

**RECEIVED**

*By OCD; Dr. Oberding at 8:13 am, Mar 30, 2015*

**APPROVED**

*By OCD; Dr. Oberding at 8:25 am, Mar 30, 2015*

**OXY USA, Inc.  
North Hobbs Unit 28  
Delineation Report and Work Plan**

**Section 32, T18S, R38E  
Lea County, New Mexico**

**March 9, 2015**



1RP-3429

**Prepared for:**

**OXY USA, Inc.  
1017 W Stanolind Road  
Hobbs, New Mexico 88240**

**By:**

**Safety & Environmental Solutions, Inc.  
703 East Clinton Street  
Hobbs, New Mexico 88240  
(575) 397-0510**

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## I. Company Contacts

Representative	Company	Telephone	E-mail
Raymond Aguilar	OXY USA, INC.	575-390-6312	Raymond_aguilar@oxy.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

## II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by OXY USA, INC to perform site assessment of a release area at the South Hobbs Unit 28-422 located in Section 32 of Township 18 South, Range 38 East, Lea County, New Mexico.

According to the C-141 the cause of release was external corrosion.

## III. Surface and Ground Water

The nearest groundwater of record is approximately 1.0 mile from the site. The New Mexico Office of State Engineer record is in Section 32 Range 38 East and Township 18 South. The reported depth was 60 feet below ground surface (BGS).

## IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks, Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1000 ppm Total Petroleum Hydrocarbons (TPH).

Depth to Ground Water:			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	X
	>100 feet	0 points	
Wellhead Protection Area:			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	X
Distance to Surface Water:			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	x
RANKING SCORE (TOTAL POINTS)			10

## V. Work Performed

On February 3, 2015, SESI was onsite to determine vertical extent of contamination. Bore holes were advanced to various depths to determine vertical extent of contamination. All samples were properly packaged, preserved and transported to the Laboratory, Hobbs New Mexico and analyzed for Benzene, Toluene, Ethylbenzene, Xylenes, Total BTEX and Chloride (Cl<sup>-</sup>) (Method SM4500Cl-B). The results of the analysis are presented in the table below:

Sample Date 02/03/2015	Sample ID	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX
Depth	Method					
BH-1 at 2'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-2 at 1.5-1.8'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-3 at 1.9-2.2'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-4 at 0.5'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-5 at 2-2.5'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-5 at 0.9-1.2'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-7 at 0.4-0.7'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-8 at 0.3-0.6'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-9 at 0.3-0.6'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-9 at 3.2-3.5'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-10 at 0.7-1'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-10 at 3.4-3.7'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-11 at 1.7-2'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-11 at 3-3.3'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-12 at 0.8-1.2'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-12 at 2.8-3.1'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300

Sample Date 02/03/2015	Sample ID	Chloride (Cl)	Sample ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg)
Depth	Method		Method		
BH-1 at 2'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-1 at 3'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-2 at 1.5-1.8'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-2 at 2.6-2.8'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-3 at 1.9-2.2'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-3 at 2.6-3.0'	SM4500CI-B	32	TPH 8015M	*	*
BH-4 at 0.5'	SM4500CI-B	640	TPH 8015M	<10.0	<10.0
BH-4 at 1.6-1.9'	SM4500CI-B	64.0	TPH 8015M	*	*
BH-5 at 2-2.5'	SM4500CI-B	48.0	TPH 8015M	<10.0	<10.0
BH-5 at 0.9-1.2'	SM4500CI-B	272	TPH 8015M	<10.0	<10.0
BH-6 at 0.7-1.1'	SM4500CI-B	784	TPH 8015M	*	*
BH-7 at 0.4-0.7'	SM4500CI-B	1020	TPH 8015M	<10.0	<10.0
BH-7 at 1.0-1.3'	SM4500CI-B	512	TPH 8015M	*	*
BH-8 at 0.3-0.6'	SM4500CI-B	512	TPH 8015M	<10.0	<10.0
BH-8 at 1.2-1.4'	SM4500CI-B	400	TPH 8015M	*	*
BH-9 at 0.3-0.6'	SM4500CI-B	64.0	TPH 8015M	<10.0	<10.0
BH-9 at 3.2-3.5'	SM4500CI-B	720	TPH 8015M	<10.0	<10.0
BH-10 at 0.7-1'	SM4500CI-B	880	TPH 8015M	<10.0	<10.0
BH-10 at 3.4-3.7'	SM4500CI-B	864	TPH 8015M	<10.0	<10.0
BH-11 at 1.7-2'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-11 at 3-3.3'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0
BH-12 at 0.8-1.2'	SM4500CI-B	160	TPH 8015M	<10.0	<10.0
BH-12 at 2.8-3.1'	SM4500CI-B	<16.0	TPH 8015M	<10.0	<10.0

\*indicates that they were not analyzed

Sample Date 02/19/2015	Sample ID	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX
Depth	Method					
BH-9 at 5.5-5.7'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
BH-10 at 5.6-5.8'	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300

Sample Date 02/19/2015	Sample ID	Chloride (Cl)	Sample ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg)
Depth	Method		Method		
BH-9 at 5.5-5.7'	SM4500CI-B	160	TPH 8015M	<10.0	<10.0
BH-10 at 5.6-5.8'	SM4500CI-B	800	TPH 8015M	<10.0	<10.0

Sample Date 02/16/2015	Sample ID	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX
Location	Method					
South Wall	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
West Wall	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
East Wall	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
Bottom	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300
North Wall	BTEX 8021B	<0.050	<0.050	<0.050	<0.150	<0.300

Sample Date 02/16/2015	Sample ID	Chloride (Cl)	Sample ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg)
Depth	Method		Method		
South Wall	SM4500CI-B	1580	TPH 8015M	<50.0	<50.0
West Wall	SM4500CI-B	2280	TPH 8015M	<50.0	<50.0
East Wall	SM4500CI-B	816	TPH 8015M	<10.0	<10.0
Bottom	SM4500CI-B	288	TPH 8015M	<10.0	<10.0
North Wall	SM4500CI-B	592	TPH 8015M	<10.0	<10.0

See photo # 22

## VI. Action Plan

Due to the results listed above the following action plan is proposed:

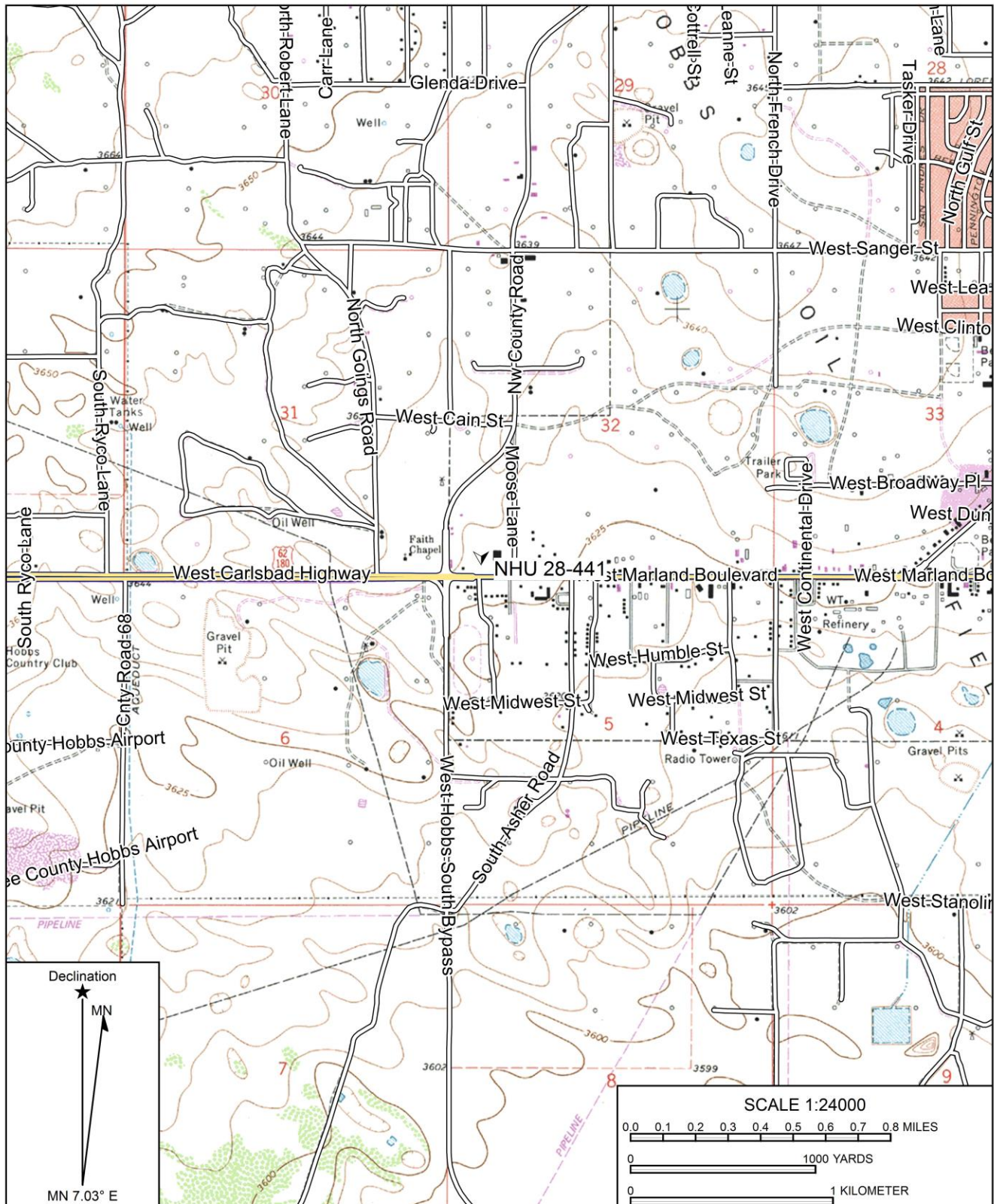
Excavate and remove all chloride contaminated soil to 500 ppm and transport to an NMOCD approved facility for disposal. The excavated area will be backfilled with native soil and returned to natural grade. Final closure documentation will be submitted at completion.

## VII. Figures & Appendices

Figure 1 – Vicinity Map  
 Figure 2 – Site Plan  
 Appendix A – Analytical Results  
 Appendix B – C-141

# **Figure 1**

## **Vicinity Map**



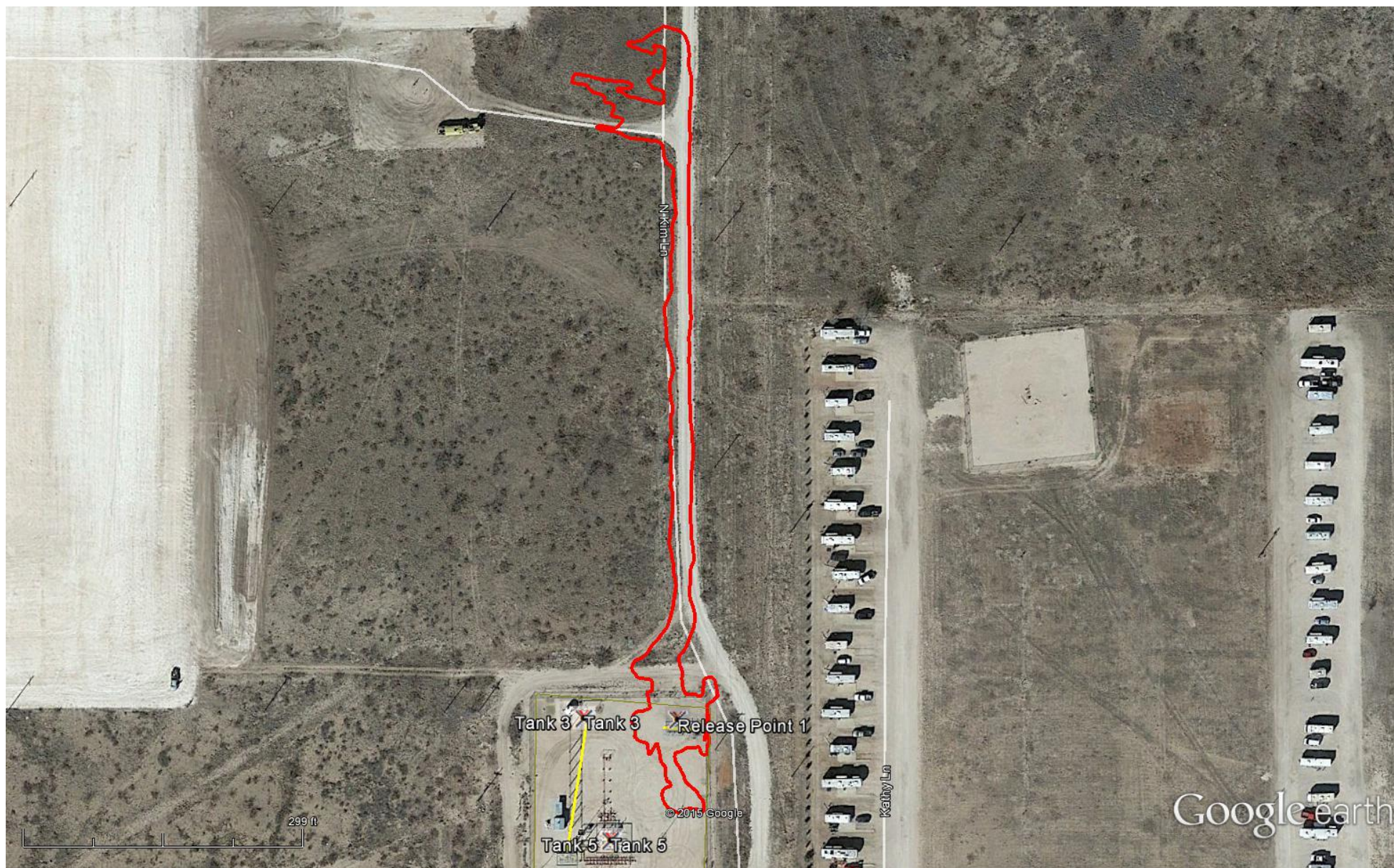
Name: HOBBS WEST,  
 Date: 02/10/15  
 Scale: 1 inch = 2,000 ft.

Location: 032.6953028° N, 103.1765817° W  
 Caption: North Hobbs Unit 28-441

## **Figure 2**

## **Site Plan**





NHU 28-422

# **Appendix A**

## **Analytical Results**



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

February 12, 2015

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: NHU SAT 28-441

Enclosed are the results of analyses for samples received by the laboratory on 02/06/15 16:40.

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,

Celey D. Keene

Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-1 2' (H500369-01)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

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	02/10/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 109 % 47.2-157

Surrogate: 1-Chlorooctadecane 95.1 % 52.1-176

**Sample ID: BH-1 3' (H500369-02)**

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	02/10/2015	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-2 1.5 - 1.8' (H500369-03)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

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	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 101 % 47.2-157

Surrogate: 1-Chlorooctadecane 87.1 % 52.1-176

**Sample ID: BH-2 2.6 - 2.8' (H500369-04)**

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	02/10/2015	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-3 1.9 - 2.2' (H500369-05)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

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	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/12/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 101 % 47.2-137

Surrogate: 1-Chlorooctadecane 85.4 % 52.1-176

**Sample ID: BH-3 2.6 - 3.0' (H500369-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/10/2015	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-4 0.5' (H500369-07)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 95.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 89.5 % 52.1-176

**Sample ID: BH-4 1.6 - 1.9' (H500369-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/10/2015	ND	400	100	400	3.92	

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager

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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

Sample ID: BH-5 2 - 2.5' (H500369-09)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96		
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19		
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64		
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44		
Total BTEX	<0.300	0.300	02/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

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	02/10/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 104 % 47.2-157

Surrogate: 1-Chlorooctadecane 102 % 52.1-176

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**Analytical Results For:**

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

Received:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-5 0.9 - 1.2' (H500369-10)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96		
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19		
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64		
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44		
Total BTX	<0.300	0.300	02/09/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 99.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 100 % 52.1-176

**Sample ID: BH-6 0.7 - 1.1' (H500369-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	784	16.0	02/10/2015	ND	400	100	400	3.92	

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**Analytical Results For:**

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

Received:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-7 0.4 - 0.7' (H500369-12)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1020	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 100 % 47.2-157

Surrogate: 1-Chlorooctadecane 95.1 % 52.1-176

**Sample ID: BH-7 1.0 - 1.3' (H500369-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	02/10/2015	ND	400	100	400	3.92	

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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-8 0.3 - 0.6' (H500369-14)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 102 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.6 % 52.1-176

**Sample ID: BH-8 1.2 - 1.4' (H500369-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	02/10/2015	ND	400	100	400	3.92	

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**Analytical Results For:**

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

Received:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-9 0.3 - 0.6' (H500369-16)**

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/10/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 103 % 47.2-157

Surrogate: 1-Chlorooctadecane 89.8 % 52.1-176

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**Analytical Results For:**

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

 Received: 02/06/2015  
 Reported: 02/12/2015  
 Project Name: NHU SAT 28-441  
 Project Number: OXY-14-034  
 Project Location: HOBBS, NM

 Sampling Date: 02/03/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

Sample ID: BH-9 3.2 - 3.5' (H500369-17)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID		101 %	61-154							
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP							

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M	mg/kg	Analyzed By: MS							

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 102 % 47.2-157

Surrogate: 1-Chlorooctadecane 90.4 % 52.1-176

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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-10 0.7 - 1' (H500369-18)**

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/09/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/09/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/09/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/09/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/09/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	02/10/2015	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	188	94.1	200	0.958	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	200	99.9	200	0.169	

Surrogate: 1-Chlorooctane 102 % 47.2-157

Surrogate: 1-Chlorooctadecane 89.7 % 52.1-176

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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:	02/06/2015	Sampling Date:	02/03/2015
Reported:	02/12/2015	Sampling Type:	Soil
Project Name:	NHU SAT 28-441	Sampling Condition:	Cool & Intact
Project Number:	OXY-14-034	Sample Received By:	Jodi Henson
Project Location:	HOBBS, NM		

**Sample ID: BH-10 3.4 - 3.7' (H500369-19)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/10/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/10/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/10/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154  
 Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	864	16.0	02/10/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	195	97.4	200	2.52	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	201	101	200	3.37	

Surrogate: 1-Chlorooctane 107 % 47.2-157  
 Surrogate: 1-Chlorooctadecane 91.8 % 52.1-176

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**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

Sample ID: BH-11 1.7 - 2' (H500369-20)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/10/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/10/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/10/2015	ND	5.05	84.2	6.00	5.44	
Total BTX	<0.300	0.300	02/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

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	02/10/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2015	ND	195	97.4	200	2.52	
DRO >C10-C28	<10.0	10.0	02/12/2015	ND	201	101	200	3.37	

Surrogate: 1-Chlorooctane 100 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.4 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

Sample ID: BH-11 3 - 3.3' (H500369-21)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/10/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/10/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/10/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 61-154

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	02/10/2015	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	195	97.4	200	2.52	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	201	101	200	3.37	

Surrogate: 1-Chlorooctane 101 % 47.2-157

Surrogate: 1-Chlorooctadecane 89.5 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

Sample ID: BH-12 0.8 - 1.2 (H500369-22)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/10/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/10/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/10/2015	ND	5.05	84.2	6.00	5.44	
Total BTX	<0.300	0.300	02/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/10/2015	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	195	97.4	200	2.52	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	201	101	200	3.37	

Surrogate: 1-Chlorooctane 104 % 47.2-137

Surrogate: 1-Chlorooctadecane 90.2 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/06/2015  
Reported: 02/12/2015  
Project Name: NHU SAT 28-441  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/03/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-12 2.8 - 3.1 (H500369-23)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2015	ND	1.80	90.1	2.00	4.96	
Toluene*	<0.050	0.050	02/10/2015	ND	1.74	87.0	2.00	5.19	
Ethylbenzene*	<0.050	0.050	02/10/2015	ND	1.68	84.1	2.00	5.64	
Total Xylenes*	<0.150	0.150	02/10/2015	ND	5.05	84.2	6.00	5.44	
Total BTEX	<0.300	0.300	02/10/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 61-154

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	02/10/2015	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/10/2015	ND	195	97.4	200	2.52	
DRO >C10-C28	<10.0	10.0	02/10/2015	ND	201	101	200	3.37	

Surrogate: 1-Chlorooctane 103 % 47.2-137

Surrogate: 1-Chlorooctadecane 91.7 % 52.1-176

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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 SM4500C-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

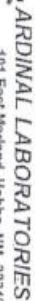
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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 Fax (505) 393-2476

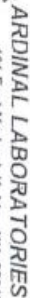
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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(505) 393-2326 Fax (505) 393-2476

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

February 24, 2015

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: NHU SAT 28-422

Enclosed are the results of analyses for samples received by the laboratory on 02/19/15 16:35.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/19/2015  
Reported: 02/24/2015  
Project Name: NHU SAT 28-422  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/19/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-9 5.5' - 5.7' (H500493-01)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/23/2015	ND	1.72	85.8	2.00	8.59		
Toluene*	<0.050	0.050	02/23/2015	ND	1.73	86.3	2.00	8.14		
Ethylbenzene*	<0.050	0.050	02/23/2015	ND	1.67	83.6	2.00	11.2		
Total Xylenes*	<0.150	0.150	02/23/2015	ND	4.89	81.6	6.00	11.4		
Total BTEX	<0.300	0.300	02/23/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/20/2015	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/21/2015	ND	202	101	200	0.814	
DRO >C10-C28	<10.0	10.0	02/21/2015	ND	188	94.2	200	2.87	

Surrogate: 1-Chlorooctane 90.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 99.8 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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*Celestine D. Keene*

Celestine D. Keene, Lab Director/Quality Manager

Page 2 of 5



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**Analytical Results For:**

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

Received: 02/19/2015  
Reported: 02/24/2015  
Project Name: NHU SAT 28-422  
Project Number: OXY-14-034  
Project Location: HOBBS, NM

Sampling Date: 02/19/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: BH-10 5.6' - 5.8' (H500493-02)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/23/2015	ND	1.72	85.8	2.00	8.59	
Toluene*	<0.050	0.050	02/23/2015	ND	1.73	86.3	2.00	8.14	
Ethylbenzene*	<0.050	0.050	02/23/2015	ND	1.67	83.6	2.00	11.2	
Total Xylenes*	<0.150	0.150	02/23/2015	ND	4.89	81.6	6.00	11.4	
Total BTX	<0.300	0.300	02/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	02/20/2015	ND	416	104	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

GRO C6-C10	<10.0	10.0	02/21/2015	ND	202	101	200	0.814	
DRO >C10-C28	<10.0	10.0	02/21/2015	ND	188	94.2	200	2.87	

Surrogate: 1-Chlorooctane 80.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 77.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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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



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 Fax (505) 393-2476

Page \_\_\_\_ of \_\_\_\_

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Page 5 of 5



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

February 23, 2015

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: NHU SATELLITE #28

Enclosed are the results of analyses for samples received by the laboratory on 02/16/15 16:00.

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,

Celely D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/16/2015  
Reported: 02/23/2015  
Project Name: NHU SATELLITE #28  
Project Number: OXY-15-034  
Project Location: HOBBS, NEW MEXICO

Sampling Date: 02/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: SOUTH WALL (H500452-01)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/20/2015	ND	1.85	92.3	2.00	5.10		
Toluene*	<0.050	0.050	02/20/2015	ND	1.86	92.9	2.00	5.32		
Ethylbenzene*	<0.050	0.050	02/20/2015	ND	1.84	92.0	2.00	5.66		
Total Xylenes*	<0.150	0.150	02/20/2015	ND	5.45	90.8	6.00	4.79		
Total BTX	<0.300	0.300	02/20/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.2 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	02/18/2015	ND	416	104	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 91.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 87.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 02/16/2015  
Reported: 02/23/2015  
Project Name: NHU SATELLITE #28  
Project Number: OXY-15-034  
Project Location: HOBBS, NEW MEXICO

Sampling Date: 02/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: WEST WALL (H500452-02)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2015	ND	1.85	92.3	2.00	5.10	
Toluene*	<0.050	0.050	02/21/2015	ND	1.86	92.9	2.00	5.32	
Ethylbenzene*	<0.050	0.050	02/21/2015	ND	1.84	92.0	2.00	5.66	
Total Xylenes*	<0.150	0.150	02/21/2015	ND	5.45	90.8	6.00	4.79	
Total BTEX	<0.300	0.300	02/21/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	02/18/2015	ND	416	104	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 85.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.7 % 52.1-176

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\*=Accredited Analyte

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*Coley D. Keene*

Coley D. Keene, Lab Director/Quality Manager

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

**Analytical Results For:**

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

Received: 02/16/2015  
Reported: 02/23/2015  
Project Name: NHU SATELLITE #28  
Project Number: OXY-15-034  
Project Location: HOBBS, NEW MEXICO

Sampling Date: 02/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: EAST WALL (H500452-03)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2015	ND	1.85	92.3	2.00	5.10	
Toluene*	<0.050	0.050	02/21/2015	ND	1.86	92.9	2.00	5.32	
Ethylbenzene*	<0.050	0.050	02/21/2015	ND	1.84	92.0	2.00	5.66	
Total Xylenes*	<0.150	0.150	02/21/2015	ND	5.45	90.8	6.00	4.79	
Total BTEX	<0.300	0.300	02/21/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.3 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	02/18/2015	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/18/2015	ND	203	102	200	3.02	
DRO >C10-C28	<10.0	10.0	02/18/2015	ND	193	96.7	200	3.27	

Surrogate: 1-Chlorooctane 86.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 76.4 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/16/2015  
Reported: 02/23/2015  
Project Name: NHU SATELLITE #28  
Project Number: OXY-15-034  
Project Location: HOBBS, NEW MEXICO

Sampling Date: 02/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: BOTTOM (H500452-04)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2015	ND	1.85	92.3	2.00	5.10	
Toluene*	<0.050	0.050	02/21/2015	ND	1.86	92.9	2.00	5.32	
Ethylbenzene*	<0.050	0.050	02/21/2015	ND	1.84	92.0	2.00	5.66	
Total Xylenes*	<0.150	0.150	02/21/2015	ND	5.45	90.8	6.00	4.79	
Total BTX	<0.300	0.300	02/21/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.6 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	02/18/2015	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/18/2015	ND	203	102	200	3.02	
DRO >C10-C28	<10.0	10.0	02/18/2015	ND	193	96.7	200	3.27	

Surrogate: 1-Chlorooctane 90.2 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.6 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 02/16/2015  
Reported: 02/23/2015  
Project Name: NHU SATELLITE #28  
Project Number: OXY-15-034  
Project Location: HOBBS, NEW MEXICO

Sampling Date: 02/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: NORTH WALL (H500452-05)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2015	ND	1.85	92.3	2.00	5.10		
Toluene*	<0.050	0.050	02/21/2015	ND	1.86	92.9	2.00	5.32		
Ethylbenzene*	<0.050	0.050	02/21/2015	ND	1.84	92.0	2.00	5.66		
Total Xylenes*	<0.150	0.150	02/21/2015	ND	5.45	90.8	6.00	4.79		
Total BTEX	<0.300	0.300	02/21/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.8 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	02/18/2015	ND	416	104	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Surrogate: 1-Chlorooctane 91.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 85.5 % 52.1-176

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Coley D. Keene, Lab Director/Quality Manager

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**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



## **Appendix B**

### **C-141**

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**

<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: OXY		Contact: Raymond Aguilar	
Address: 1017 W Stanolind Road		Telephone No. 575-390-6312	
Facility Name: North Hobbs Unit 32-141		Facility Type: Oil and Gas Production	
Surface Owner:	Mineral Owner:	Lease No.	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	32	18S	38E					

Latitude: 32.697350 Longitude: -103.177630

**NATURE OF RELEASE**

Type of Release: Produced Water	Volume of Release: 80 BBLS Produced Water	Volume Recovered: 70 BBLS Produced Water
Source of Release: Injection Line	Date and Hour of Occurrence: 10/20/2014 8:30 AM	Date and Hour of Discovery: 10/20/2014 8:30 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Tomas Oberding	
By Whom?	Date and Hour: 10/20/2014 2:55 PM	
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.*		
External Corrosion		
Describe Area Affected and Cleanup Action Taken.*		
Safety & Environmental Solutions, Inc. will delineate the spill area and submit an appropriate 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.		
Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Aguilar	Approved by District Supervisor:	
Title: HES Specialist	Approval Date:	Expiration Date:
E-mail Address: Raymond_Aguilar@oxy.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1-7-15	Phone: 575-390-6312	

\* Attach Additional Sheets If Necessary

## **Appendix C**

### **Site Photographs**





Release Area Facing North (Photo # 1)



Release Area Facing East (Photo # 2)



Saturated soil at leak location (Photo # 3)



Ponded and saturated soil at manifold facing west (Photo # 4)



Pad facing west (Photo # 5)



Pad unaffected by release looking southwest (Photo # 6)





Looking west outside fence along pipeline corridor (Photo # 7) Manifold and release area looking southwest from outside fence (Photo # 8)



Wet soil from release outside fence facing west (Photo # 9) Ponded release water looking southwest (Photo # 10)



Ponded release water looking south (Photo # 11)



Ponding and saturated soil on lease road looking north (Photo # 12)





Ponding along lease road (Photo # 13)



Wet soil along lease road facing north(Photo # 14)



Ponding at lease road at north extent of release (Photo # 15) Ponding at north extent of release, facing west (Photo # 16)



Ponding at north extent of release, facing east (Photo # 17)  
looking northeast(Photo # 18)



Ponding at north extent of release,





Vacuum truck removing ponded fluid (Photo # 20)



Lease Sign (Photo # 21)



Excavation at leak location (Photo # 22)