

Imagine the result

Apache Corporation

WBDU 52 1RP-4588-0

OGRID 873

Remediation

Plan Proposal

Lea County, New Mexico

May 11, 2017

Jennifer Van Curen
Environmental Project Scientist

WBDU 52
Remediation
Plan Proposal

Prepared for:
Apache
Corporation
Lea County, New Mexico

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Our Ref.:
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Date:
May 11, 2017

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**Remediation
Plan Proposal**

Apache
Corporation
Lea County, New Mexico

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Corporation
Lea County, New Mexico

1. INTRODUCTION

The subject site is located on the facility pad at 32.4866638 and -103.1641617 in Section 9, T21S, R37E in Lea County. The site is operated by Apache Corporation.

2. SUMMARY OF SITE INVESTIGATION ACTIVITIES

The New Mexico Oil Conservation Division (NMOCD), Maxey Brown, and the Bureau of Land Management (BLM), Shelly Tucker, were notified of a release that occurred on December 19, 2016 with 22 barrels (bbls.) oil and 8 bbls of water released and 14 bbls oil and 6 bbls water recovered at the site via form C-141, submitted on December 21, 2016 by Bruce Baker with Apache Corporation. The surface is private land and minerals is federal for this area.

The release was reported to have had a line freeze and rupture. A vacuum truck was dispatched to pick-up the standing fluid. The line was repaired. Most of the standing fluid was contained on well pad area (989 square yards). There is an area southeast of the well pad where the release followed a cattle path into the pasture (144 square yards).

Initial sampling and mapping of site took place on December 22, 2017 with follow-up vertical delineation in February 2017. Soil sampling results are shown in the Table 1. The laboratory results are attached in Appendix C.

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Table1: Soil Sample Results

Date	Sample #	Depth	Lab Data			Field Data
			BTEX	TPH	CL's	CL's
12/22/2016						
	SP 1	8"	1.12	156	2640	2240
	SP 2	6"	ND	ND	3280	2320
	SP 3	10"	1.54	751.2	176	180
	SP 4	10"	573	17,440	32	32
	SP 5	10"	0.455	58.2	32	32
	SP 6	10"	1.01	164	48	32
	SP 7	10"	0.171	ND	32	32
2/1/2017						
	SP 1	0"	3.59	996.6	5730	>4,000
		1'	ND	ND	1200	1,260
		2'	ND	ND	384	240
		3'	ND	ND	176	180
	SP 2	0'	68.9	8210	3200	2890
		1'	ND	ND	160	180
		2'	ND	ND	96	64
	SP 4	0'	326	11740	16	16
		2'	3.77	526	32	16

TPH: Gasoline range (GRO) - >C6-C12; Diesel range (DRO) - >C12-C28

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Figure: 1 Sample Point Locations



3. ENVIRONMENTAL ASSESSMENT

3.1 Hydrology

Groundwater depths in the area is approximately 70 feet bgs (Waters Map). There is no surface water near this release site or water wells within 1,000 ft.

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

Depth to ground water	>70' = 10
Wellhead Protection Area	>1000' = 0
Distance to surface water body	>1000' = 0

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Lea County, New Mexico

4. REMEDIATION PLAN

After review of various remedial options, we propose the following Remediation Plan for this release site is as follows:

4.1 Soil Remediation Plan

Initial release site investigation activities were conducted in December 22, 2016 by completing mapping and sampling (lab & field) to 8-10 inches below ground surface (bgs). Seven samples were taken to the lab within the release site. There was chloride impacted soils on the well pad at SP 1 and SP 2, but not in pasture. The TPH was noted in the pasture. Further investigation was completed on the well pad and the pasture on February 1, 2017 in the areas of highest concern, SP 1, SP 2, and SP 4. SP 1 was delineated to 3 ft. bgs. where the chloride impacts showed to clean up at 2 ft. bgs. with an additional sample to verify no further impacts from this release. SP 2 was delineated to 2 ft. bgs. where the chloride and TPH impacts showed to clean up at 1 ft. bgs. with an additional sample to verify no further impacts from this release. SP 4 was delineated primarily for TPH, but chlorides were run at the lab to verify that they were not encountered at depth as well. SP 4 was delineated to 2 ft. bgs. with lab results showing low TPH levels. The soil samples were taken to a depth to reach the NMOCD delineation guidelines. All sample areas are noted in Figure 1.

The impacted soils on the well pad will be excavated via a backhoe. The area around wellhead (SP 1), outside of the 25' safety area will be excavated to 2 ft. bgs, and the area around SP 2 will be excavated to 1 ft. bgs. Caliche will be used to resurface the excavated area on the well pad. The pasture area around SP 4 will be excavated to 2 ft. bgs where pooling took place. The area within SP 3 will be scraped and clean caliche will be used to resurface this area. The areas of SP 5 - SP 7 will be scraped and then tilled and blended with fresh soil for optimal vegetation re-growth. All excavated material will be transported to a NMOCD approved disposal facility.

4.2 Noxious Weed Plan

Apache will treat noxious weeds if they become established within the areas of the remediation. Weed control will be maintained on the disturbed land where noxious weeds exist both prior to remediation and restoration. Apache will consult with the Authorized Officer for acceptable weed control methods. Apache, in coordination with the OCD and BLM, may develop a noxious weed plan to include recommendations

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and guidelines for noxious weed and invasive species management throughout the disturbed areas and to minimize the spread of weeds to adjacent areas.

5. REMEDIATION WORK SCHEDULE

Soil remediation activities are expected to be completed within 5 working days (Monday through Friday) with work commencing after receiving approval and funding of this Remediation Plan.

6. FOLLOW-UP SCHEDULE

A Remediation Report with Form C-141 will be completed and mailed within 30 days of remediation work being completed.



Appendix A

Attachments

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Apache Corporation	Contact Bruce Baker	
Address: 8 Ellison Lane Eunice, NM 88231	Telephone No. (432) 631-6982	
Facility Name WBDU 52	Facility Type: Oil Well	
Surface Owner Private	Mineral Owner Federal	API No. 30-025-38198

LOCATION OF RELEASE

Unit Letter O	Section 9	Township 21S	Range 37E	Feet from the 190'	North/South Line FSL	Feet from the 1461'	East/West Line FEL	County Lea
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Latitude 32.4866638 Longitude -103.1641617

NATURE OF RELEASE

Type of Release: oil and produced water	Volume of Release 22 barrels of water and 8 barrels of oil	Volume Recovered 14 barrels of water and 6 barrels of oil
Source of Release: Flow line	Date and Hour of Occurrence 12/19/2016	Date and Hour of Discovery 12/19/2016 at 6:30 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Shelly Tucker (BLM) Left message with Maxey Brown (NMOCD)	
By Whom? Bruce Baker	Date and Hour 12/19/2016 at 2:46 p.m.	
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.*

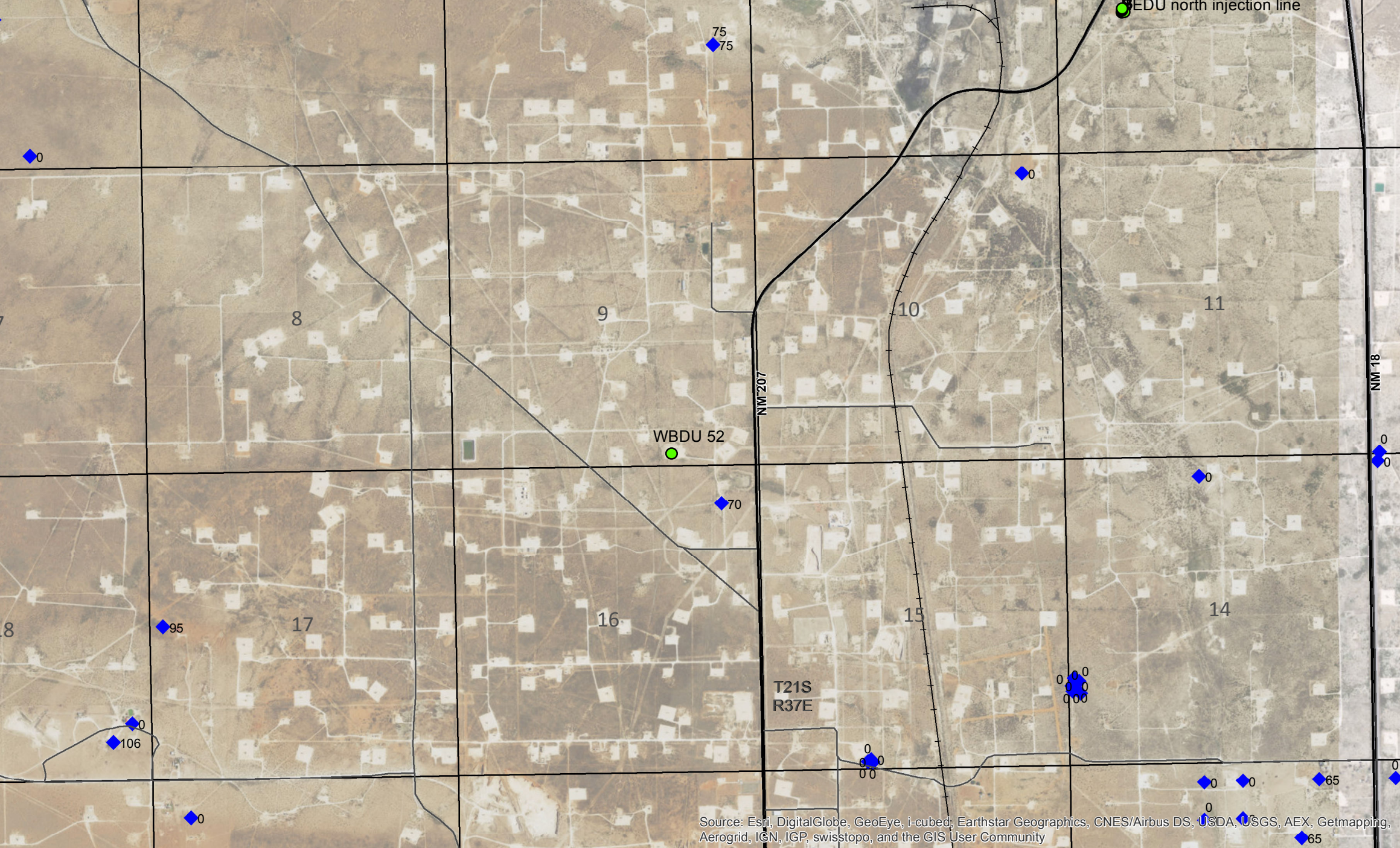
The flow line froze and ruptured. The well was shut in to isolate the line and a vacuum truck was dispatched to pick-up standing fluid. A gang was dispatched to repair flow line.

Describe Area Affected and Cleanup Action Taken.*

The majority of the release was contained to the location pad and lease road except for approximately 1200 square feet southeast of well pad and south of lease road in pasture.

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: <i>Bruce Baker</i>	OIL CONSERVATION DIVISION		
Printed Name: Bruce Baker	Approved by Environmental Specialist:		
Title: Environmental Technician	Approval Date:	Expiration Date:	
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 12/21/2016	Phone: (432) 631-6982		





Appendix B

Photos

PHOTOGRAPH LOG

Apache
WBDU 52



Photograph: 1

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016



Photograph: 2

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016

PHOTOGRAPH LOG

Apache
WBDU 52



Photograph: 3

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016



Photograph: 4

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016

PHOTOGRAPH LOG

Apache
WBDU 52



Photograph: 5

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016



Photograph: 6

Description:
Release Area

Location:
WBDU 52

Photograph taken by:
Jennifer Van Curen

Date: 12/22/2016



Appendix C

Laboratory Sample Results

February 08, 2017

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #52

Enclosed are the results of analyses for samples received by the laboratory on 02/01/17 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is 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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 1 @ SURFACE (H700243-01)

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	02/02/2017	ND	2.14	107	2.00	0.0867	
Toluene*	0.163	0.050	02/02/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	0.829	0.050	02/02/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	2.59	0.150	02/02/2017	ND	5.99	99.8	6.00	0.215	
Total BTX	3.59	0.300	02/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5730	16.0	02/03/2017	ND	432	108	400	0.00	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	64.6	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	932	10.0	02/02/2017	ND	213	107	200	9.16	QM-07

Surrogate: 1-Chlorooctane 94.4 % 35-147

Surrogate: 1-Chlorooctadecane 105 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 1 @ 1' (H700243-02)

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	02/02/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/02/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/02/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/02/2017	ND	5.99	99.8	6.00	0.215	
Total BTEx	<0.300	0.300	02/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 81.4 % 35-147

Surrogate: 1-Chlorooctadecane 85.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 1 @ 2' (H700243-03)

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	02/02/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/02/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/02/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/02/2017	ND	5.99	99.8	6.00	0.215	
Total BTEx	<0.300	0.300	02/02/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 94.4 % 35-147

Surrogate: 1-Chlorooctadecane 92.9 % 28-171

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Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 02/01/2017
 Reported: 02/08/2017
 Project Name: WBDU #52
 Project Number: NONE GIVEN
 Project Location: LEA COUNTY, NM

 Sampling Date: 02/01/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 1 @ 3' (H700243-04)

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	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEx	<0.300	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 94.5 % 35-147

Surrogate: 1-Chlorooctadecane 103 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 02/01/2017
 Reported: 02/08/2017
 Project Name: WBDU #52
 Project Number: NONE GIVEN
 Project Location: LEA COUNTY, NM

 Sampling Date: 02/01/2017
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 2 @ SURFACE (H700243-05)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	6.41	0.500	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	16.4	0.500	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	46.0	1.50	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTX	68.9	3.00	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	02/03/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	1000	50.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	7210	50.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 147 % 35-147

Surrogate: 1-Chlorooctadecane 184 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 2 @ 1' (H700243-06)

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	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEx	<0.300	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 87.8 % 35-147

Surrogate: 1-Chlorooctadecane 86.9 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 2 @ 2' (H700243-07)

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	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	<0.050	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	<0.050	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	<0.150	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEx	<0.300	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	<10.0	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 91.0 % 35-147

Surrogate: 1-Chlorooctadecane 96.6 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

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APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 4 @ SURFACE (H700243-08)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	3.31	2.00	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	93.1	2.00	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	74.8	2.00	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	155	6.00	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTEX	326	12.0	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3620	50.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	8120	50.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 177 % 35-147

Surrogate: 1-Chlorooctadecane 200 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 02/01/2017
Reported: 02/08/2017
Project Name: WBDU #52
Project Number: NONE GIVEN
Project Location: LEA COUNTY, NM

Sampling Date: 02/01/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 4 @ 2' (H700243-09)

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	02/03/2017	ND	2.14	107	2.00	0.0867	
Toluene*	0.721	0.050	02/03/2017	ND	2.10	105	2.00	0.136	
Ethylbenzene*	0.837	0.050	02/03/2017	ND	2.11	106	2.00	0.0711	
Total Xylenes*	2.21	0.150	02/03/2017	ND	5.99	99.8	6.00	0.215	
Total BTX	3.77	0.300	02/03/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/03/2017	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	59.9	10.0	02/02/2017	ND	194	97.1	200	4.66	
DRO >C10-C28	466	10.0	02/02/2017	ND	213	107	200	9.16	

Surrogate: 1-Chlorooctane 107 % 35-147

Surrogate: 1-Chlorooctadecane 122 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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



Celey D. Keene, Lab Director/Quality Manager

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Woods</u>				BILL TO				ANALYSIS REQUEST											
Project Manager: <u>Samuel VanCuren</u>				P.O. #:															
Address:				Company: <u>Archie</u>															
City:				Attn: <u>Bruce</u>															
State:				Address:															
Phone #:				City:															
Fax #:				State:															
Project #:				Zip:															
Project Name: <u>106DU52</u>				Phone #:															
Project Location: <u>Red County</u>				Fax #:															
Sampler Name: <u>Samuel VanCuren</u>																			

FOR LAB USE ONLY		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME		Chlorides		TPH		BTEX	
Lab I.D.		H100243		SP1 Surface		X		X		X		X		X		X		X		X		X		X		2/17		1030		X		X		X	
				SP1 1'		X		X		X		X		X		X		X		X		X		X		1031		X		X		X		X	
				SP1 2'		X		X		X		X		X		X		X		X		X		X		1032		X		X		X		X	
				SP1 3'		X		X		X		X		X		X		X		X		X		X		1033		X		X		X		X	
				SP2 Surface		X		X		X		X		X		X		X		X		X		X		1034		X		X		X		X	
				SP2 1'		X		X		X		X		X		X		X		X		X		X		1035		X		X		X		X	
				SP2 2'		X		X		X		X		X		X		X		X		X		X		1036		X		X		X		X	
				SP4 Surface		X		X		X		X		X		X		X		X		X		X		1037		X		X		X		X	
				SP4 2'		X		X		X		X		X		X		X		X		X		X		1038		X		X		X		X	

Relinquished By: <u>[Signature]</u>		Date: <u>2-17</u>		Received By: <u>[Signature]</u>		Date: <u>2-17</u>	
Relinquished By: <u>[Signature]</u>		Date: <u>2-17</u>		Received By: <u>[Signature]</u>		Date: <u>2-17</u>	
Delivered By: (Circle One) <u>#75</u>		Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact		CHECKED BY: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sampler - UPS - Bus - Other: <u>5.00</u>		Sample Condition: <input type="checkbox"/> Cool <input type="checkbox"/> Intact		CHECKED BY: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Cardinal cannot accept verbal change. Please fax written change to (575) 393-2326		REMARKS:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
REMARKS:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	

January 05, 2017

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU FLOWLINE

Enclosed are the results of analyses for samples received by the laboratory on 12/22/16 9:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is 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:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	12/22/2016	Sampling Date:	12/22/2016
Reported:	01/05/2017	Sampling Type:	Soil
Project Name:	WBDU FLOWLINE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	9-21-37		

Sample ID: SP 1 (H602858-01)

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	12/28/2016	ND	1.91	95.7	2.00	2.70	
Toluene*	0.112	0.050	12/28/2016	ND	2.02	101	2.00	2.11	
Ethylbenzene*	0.185	0.050	12/28/2016	ND	1.98	98.9	2.00	2.63	
Total Xylenes*	0.819	0.150	12/28/2016	ND	5.95	99.1	6.00	2.49	
Total BTX	1.12	0.300	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	156	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 86.1 % 35-147

Surrogate: 1-Chlorooctadecane 92.5 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: SP 2 (H602858-02)

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	12/28/2016	ND	1.91	95.7	2.00	2.70	
Toluene*	<0.050	0.050	12/28/2016	ND	2.02	101	2.00	2.11	
Ethylbenzene*	<0.050	0.050	12/28/2016	ND	1.98	98.9	2.00	2.63	
Total Xylenes*	<0.150	0.150	12/28/2016	ND	5.95	99.1	6.00	2.49	
Total BTX	<0.300	0.300	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 128 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	01/03/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	<10.0	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 96.7 % 35-147

Surrogate: 1-Chlorooctadecane 100 % 28-171

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Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: SP 3 (H602858-03)

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	12/28/2016	ND	1.91	95.7	2.00	2.70	
Toluene*	0.091	0.050	12/28/2016	ND	2.02	101	2.00	2.11	
Ethylbenzene*	0.261	0.050	12/28/2016	ND	1.98	98.9	2.00	2.63	
Total Xylenes*	1.19	0.150	12/28/2016	ND	5.95	99.1	6.00	2.49	
Total BTX	1.54	0.300	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 134 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	49.2	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	702	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 108 % 35-147

Surrogate: 1-Chlorooctadecane 115 % 28-171

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Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: SP 4 (H602858-04)

BTX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	9.57	5.00	12/28/2016	ND	2.06	103	2.00	1.01	QM-07
Toluene*	157	5.00	12/28/2016	ND	2.16	108	2.00	0.806	QM-07
Ethylbenzene*	125	5.00	12/28/2016	ND	2.12	106	2.00	0.955	QM-07
Total Xylenes*	282	15.0	12/28/2016	ND	6.36	106	6.00	0.865	QM-07
Total BTX	573	30.0	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 73.6-140

Chloride, SM4500CI-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	5840	100	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	11600	100	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 242 % 35-147

Surrogate: 1-Chlorooctadecane 258 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: SP 5 (H602858-05)

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	12/28/2016	ND	2.06	103	2.00	1.01	
Toluene*	0.094	0.050	12/28/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	0.062	0.050	12/28/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	0.298	0.150	12/28/2016	ND	6.36	106	6.00	0.865	
Total BTX	0.455	0.300	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 131 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	58.2	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 95.6 % 35-147

Surrogate: 1-Chlorooctadecane 85.1 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: SP 6 (H602858-06)

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	12/28/2016	ND	2.06	103	2.00	1.01	
Toluene*	0.081	0.050	12/28/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	0.176	0.050	12/28/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	0.754	0.150	12/28/2016	ND	6.36	106	6.00	0.865	
Total BTEX	1.01	0.300	12/28/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 132 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	15.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	149	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 89.1 % 35-147

Surrogate: 1-Chlorooctadecane 89.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 12/22/2016
 Reported: 01/05/2017
 Project Name: WBDU FLOWLINE
 Project Number: NONE GIVEN
 Project Location: 9-21-37

 Sampling Date: 12/22/2016
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: SP 7 (H602858-07)

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	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	<0.050	0.050	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	0.171	0.150	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTX	<0.300	0.300	12/29/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/27/2016	ND	186	93.0	200	6.66	
DRO >C10-C28	<10.0	10.0	12/27/2016	ND	189	94.4	200	6.77	

Surrogate: 1-Chlorooctane 95.3 % 35-147

Surrogate: 1-Chlorooctadecane 88.6 % 28-171

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Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 12/22/2016
Reported: 01/05/2017
Project Name: WBDU FLOWLINE
Project Number: NONE GIVEN
Project Location: 9-21-37

Sampling Date: 12/22/2016
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Jodi Henson

Sample ID: DUP (H602858-08)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	8.06	5.00	12/29/2016	ND	2.06	103	2.00	1.01	
Toluene*	157	5.00	12/29/2016	ND	2.16	108	2.00	0.806	
Ethylbenzene*	128	5.00	12/29/2016	ND	2.12	106	2.00	0.955	
Total Xylenes*	285	15.0	12/29/2016	ND	6.36	106	6.00	0.865	
Total BTX	577	30.0	12/29/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/28/2016	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	6100	100	12/27/2016	ND	186	93.0	200	6.66		
DRO >C10-C28	12900	100	12/27/2016	ND	189	94.4	200	6.77		

Surrogate: 1-Chlorooctane 263 % 35-147

Surrogate: 1-Chlorooctadecane 291 % 28-171

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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