

# Corrective Action Plan

# **APPROVED**

June 26, 2018

By Olivia Yu at 11:31 am, Jul 20, 2018

NMOCD approves of the delineation completed for 1RP-4924. See email correspondence regarding proposed remediation.

Re: WBDU 85 API# 30-025-06652 Case # 1RP-4924

To: Olivia Yu

Environmental Specialist-New Mexico Oil Conservation Division Energy, Minerals and Natural Resources Department 1625 N. French Drive Hobbs, New Mexico 88240

# **Background:**

On January 2, 2018 Apache Corporation personal discovered an area of contamination on the east side of the well pad. The source of the release was a third party truck unloaded illegally from the pad into the pasture. An initial C-141 was submitted to NMOCD on January 9, 2018. The release area is located north of Eunice New Mexico (GPS Coordinates 32.4734573 - 103.1786652) in unit letter P section 17 Township 21S Range 37E. A search radius of 2000 meters for groundwater wells was conducted utilizing data from the NMOSE and USGS. Two USGS wells located within 2,000 feet of the release area estimate groundwater to be 71 feet.

A total of 4 verticals were conducted utilizing a backhoe in one foot intervals to delineate the vertical extend of contamination on April 19, 2018. All samples were collected from all verticals and submitted to a commercial laboratory for analysis of CI-, TPH, and BTEX. On May 24, 2018 vertical 1 was extended to a depth of 7 feet and samples collected and submitted to a commercial laboratory for analysis of CI-, TPH, and BTEX.

# **Corrective Action:**

Upon review of the vertical data collected Apache Corporation proposes that the area around SP 1 be excavated to a depth of 6 feet below ground surface. The area in the vicinity of SP 2 be excavated to a depth of 1 foot below ground surface. The area in the vicinity of SP 3 will be excavated to a depth of 5 feet below ground surface and the area in the vicinity of SP 4 will be excavated to a depth of 3 feet below ground surface. Once excavation is complete final wall samples will be collected and submitted to a commercial laboratory for analysis of CI-, TPH and BTEX.

The top two feet for SP 1, 3, 4 and the top one foot for SP 2 will be disposed of at an NMOCD approved facility. The remaining excavated material will be stockpiled on plastic at a height of one foot to allow for natural attenuation of hydrocarbons. Final grab samples representing every 50 cubic yards of bio remediated material will be collected and submitted to a commercial laboratory for analysis of CI- TPH and BTEX. The target levels to reutilize the soil for backfill will be less than 600 CI-, less than 1,000 total TPH, and less than 50 for total BTEX. If after 3 months from the time the soil is excavated the soil does not meet the target levels to

utilize for backfill. The material will be disposed of at an NMOCD approved facility. The excavation will be backfilled with clean imported soil or a combination of bio remediated soil and clean imported soil.

Enclosed: Initial C-141, Groundwater Data, Sample Diagram, Field Data, and Laboratory Results

Submitted by;

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982 Off# 575-393-7106

Bruce Baker

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

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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr.

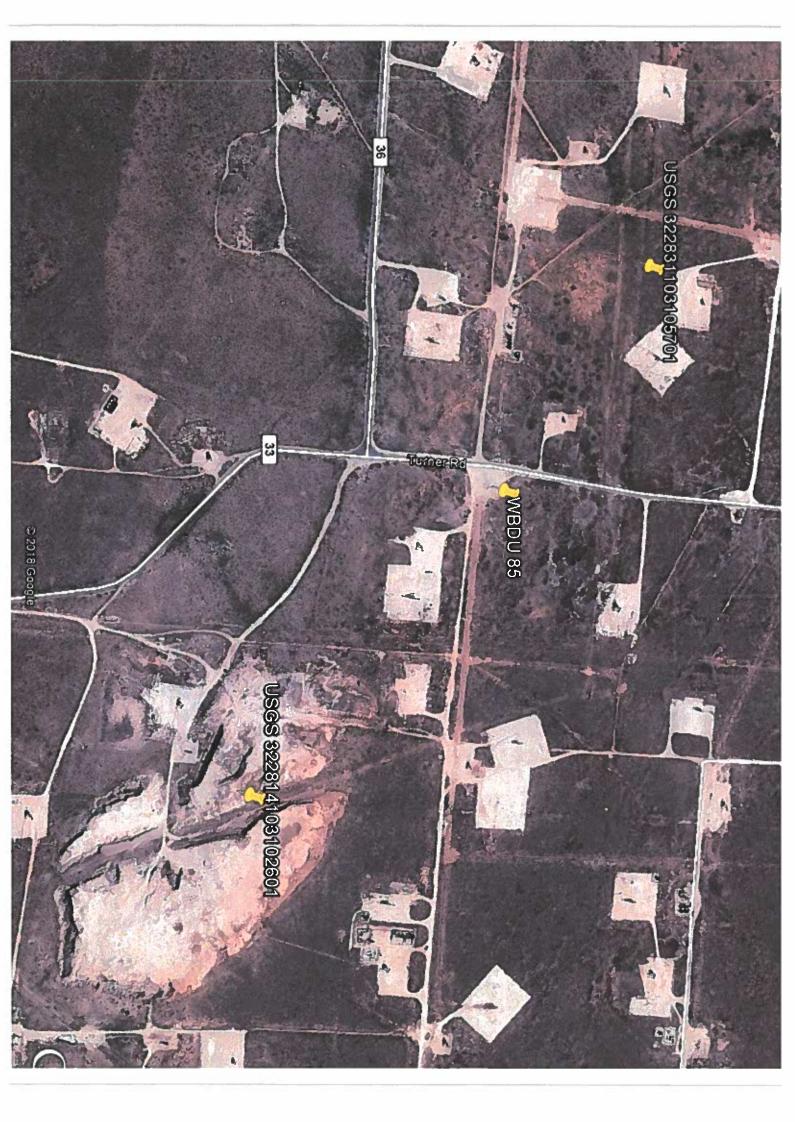
	7.7	,		Sa	nta Fe	e, NM 8/3	05					
			Rele	ase Notific	atior	and Co	rrective A	ction	1			
						OPERA?	ГOR			l Report	П	Final Report
Name of Co	mpany A	pache Corpo	ration			Contact Br	uce Baker		_			
		rland Street,	Hobbs, N	NM 88240	_		No. (432) 631-6					
Facility Nar	ne WBDI	J <b>85</b>				Facility Typ	e Injection W	<u>ell</u>				
Surface Ow	ner Privat	e		Mineral C	wner	Private			API No	. 30-025-0	6652	
				LOCA	OIT	N OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/\	Vest Line		Coun	ty
P	17	21S	37E	660`		FSL	660`		FEL		Lea	
				Latitude 32.4	73457	3 Langitude	-103.1786652					
Type of Rele	ase Produc	re Water		NAI	UKE	OF RELI	Release 120 Bar	rels	Volume P	ecovered	n	
Type of Refer	usc 11000	- water				Volume of	Release 120 Dai	icis	volume is	ccovered	U	
Source of Re	lease Unkn	own Truck				Date and I-	lour of Occurrenc	e		Hour of Dis	covery	
Was Immedia	ate Notice (		Yes [	No □ Not Re	quired	If YES, To Olivia Yu						
By Whom? I	Bruce Bake				•	ļ	lour 1/2/2018 at 1	1:52 p.n	3.			
Was a Water		ched?					lume Impacting t					
			Yes 🛚	No								
		pacted, Descr	-				EIVED Divia Yu at	t 3:2	8 pm, .	Jan 10,	201	18
On the morni	ing of 1/2/2		ation was	n Taken.* discovered on the e edge of the well						l. Tire track	s give	the
		and Cleanup A Intamination		ten.* pasture east and	northe	ast of the pa	d location. A si	mall po	rtion of co	entaminatio	on was	on the well
regulations al public health should their of or the environ	II operators or the envi operations h nment. In a	are required to ronment. The ave failed to a	o report ar acceptant idequately ICD accep	e is true and comp nd/or file certain re- te of a C-141 repo investigate and re- tance of a C-141	elease n ort by the emediate	otifications a e NMOCD m e contaminati	nd perform correct arked as "Final Re on that pose a thre	tive act eport" d eat to gi	ions for rele loes not reli ound water	eases which eve the ope , surface wa	may ei rator of iter, hu	idanger Fliability man health
	0	_					OIL CON	SERV	ATION	DIVISIO	<u>N</u>	
Signature:	Bruc	Ba	han						Ø	y		
Printed Name	e: Bruce B	aker			$\perp$	Approved by	Environmental S	pecialis	t:	( \		
Title: Enviro	nmental Te	chnician				Approval Da	e: 1/10/2018		Expiration I	Date:		
E-mail Addre	ess: larry.b	aker@apache	corp.com			Conditions of	Approval:			Attached		
Date: 1/9/	2018		Phone:	(432) 631-6982		see attac	hed directive	е			60	8

\* Attach Additional Sheets If Necessary

1RP-4924

nOY1801055905

pOY1801056219





USGS Home Contact USGS Search USGS

# **National Water Information System: Web Interface**

 USGS Water Resources
 Data Category:
 Geographic Area:

 Groundwater
 ✓

 New Mexico
 ✓

# Click to hideNews Bulletins

- Please see news on new formats
- Full News <a>
   <a>
   </a>

Groundwater levels for New Mexico

Click to hide state-specific text

# Search Results -- 1 sites found

**Agency code =** usgs **site\_no list =** • 322831103105701

# Minimum number of levels = 1

Save file of selected sites to local disk for future upload

# USGS 322831103105701 21S.37E.17.41211

Available data for this site Groundwater: Field measurements V GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

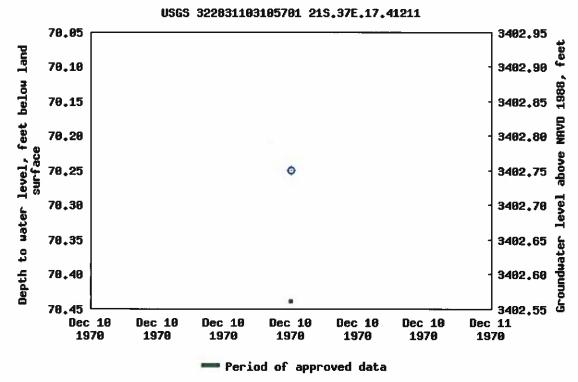
Latitude 32°28'31", Longitude 103°10'57" NAD27

Land-surface elevation 3,473 feet above NAVD88

The depth of the well is 120 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

	Output formats	 
Table of data		
Tab-separated data		
Graph of data		
Reselect period		



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

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U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for New Mexico: Water Levels

URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer

Page Last Modified: 2018-06-06 15:51:25 EDT

1.99 1.53 nadww01





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# **National Water Information System: Web Interface**

<b>USGS</b>	Water	Resources
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Data Category:	Geographic Area:		
Groundwater ~	New Mexico	~	GO

## Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

# Search Results -- 1 sites found

Agency code = usgs site\_no list = • 322814103102601

# Minimum number of levels = 1

Save file of selected sites to local disk for future upload

# USGS 322814103102601 21S.37E.21.11121

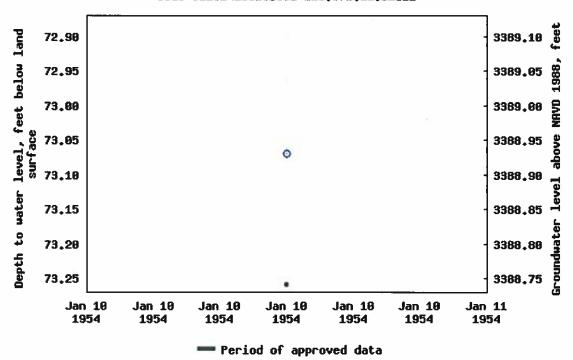
Available data for this site Groundwater: Field measurements 

Lea County, New Mexico
Hydrologic Unit Code -Latitude 32°28'14", Longitude 103°10'26" NAD27
Land-surface elevation 3,462 feet above NAVD88
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats** 

Table of data	
Tab-separated data	
Graph of data	
Reselect period	

#### USGS 322814103102601 215,37E,21,11121



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
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Data Tips
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U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for New Mexico: Water Levels

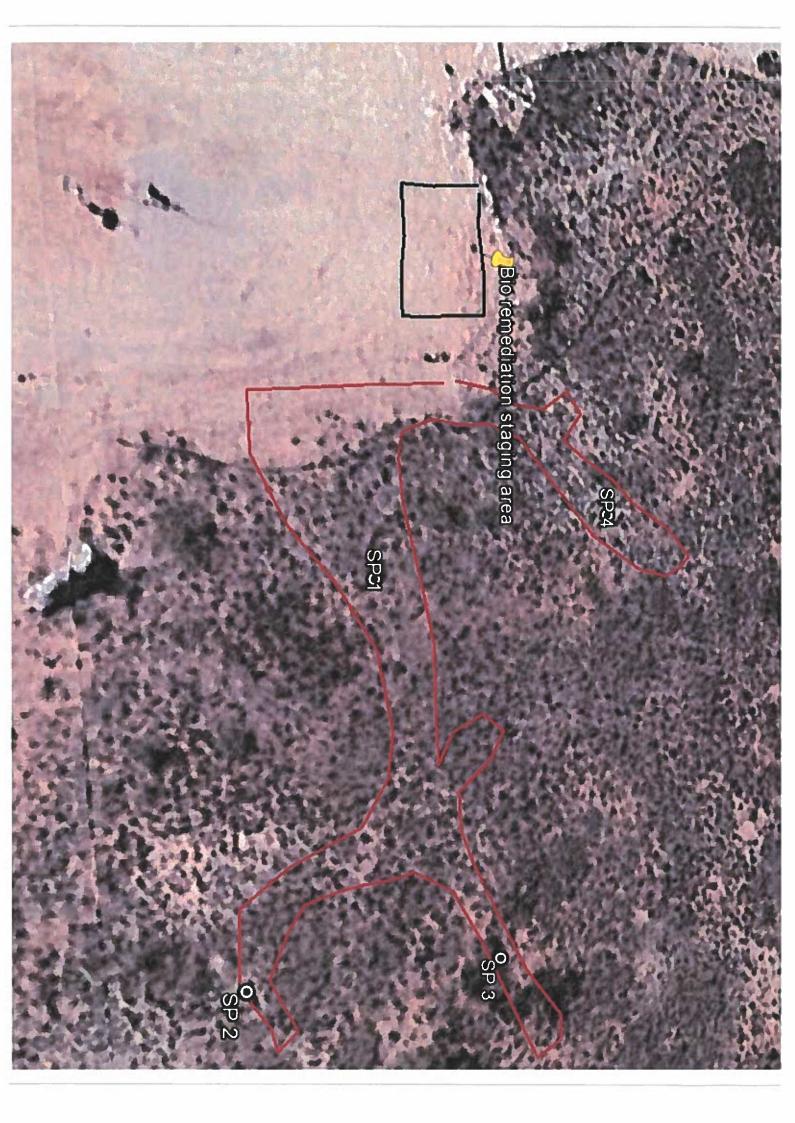
URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer

Page Last Modified: 2018-06-04 16:27:15 EDT

1.3 1.15 nadww01





# WBDU 85 Illegal Dump

<10.0	15.7	<10.0	<0.300	<0.150	<0.050	0.118	<0.050	272	31
176	1260	327	31	17.5	5.72	7.56	0.193	64	2'
888	6780	3700	675	288	113	260	13.9	16	1'
5540	25200	1180	130	68.6	20.2	39.9	1.62	272	Surface
EXT DRO	DRO	GRO	Total BTEX	Total Xylenes	Ethybenzene	Toluene	Benzene	Lab CI-	Depth
				SP 4					
<10.0	<10.0	<10.0	1.41	0.544	0.198	0.665	<0.050	208	5'
313	2320	817	163	83	28.9	50.4	0.948	80	4'
78.7	591	59.5	4.45	2.61	0.766	1.03	0.052	32	3'
364	2640	848	48.2	24	7.26	16.4	0.532	80	2'
624	4690	1890	164	76.3	32.5	53.4	1.42	64	1'
3550	18400	1500	224	125	37.8	58.3	2.54	352	Surface
EXT DRO	DRO	GRO	Total BTEX	Total Xylenes	[ Ethybenzene ]	Toluene	Benzene	Lab Cl-	Depth
				SP 3					
<10.0	<10.0	<10.0	<0.300	<0.150	<0.050	<0.050	<0.050	176	ω
<10.0	95.2	<10.0	<0.300	<0.150	<0.050	<0.050	<0.050	16	2'
57.5	234	<10	0.34	0.285	0.055	<0.050	<0.050	16	1'
1800+	8110	174	27.1	20.2	4.85	2.04	<0.050	128	Surface
EXT DRO	DRO	GRO	Total BTEX	Total Xylenes	Ethybenzene	Toluene	Benzene	Lab Cl-	Depth
				SP 2				i.	
87	508	26.4	1.49	1.07	0.243	0.176	<0.050	560	7'
50.6	323	27.6	2.73	1.79	0.434	0.503	<0.050	544	6'
<10.0	26.4	<10.0	0.487	0.188	0.06	0.239	<0.50	672	5'
235	1690	480	121	64.2	20.1	36.6	<1.00	48	4'
16.4	127	16.9	3.08	1.11	0.319	1.44	0.213	32	3'
753	5780	3490	039	244	82.2	314	18.8	`16.0	2'
1620	116000	6540	1060	434	150	450	25.1	64	1'
2640	10400	188	20.8	11.7	3.38	5.46	0.228	1060	Surface
EXT DRO	DRO	GRO	Total BTEX	Total Xylenes	Ethybenzene	Toluene	Benzene	Lab Cl-	Depth
				SP 1				ı	



April 26, 2018

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

**RE: WBDU #85** 

Enclosed are the results of analyses for samples received by the laboratory on 04/19/18 16:19.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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 <a href="https://www.tceq.texas.qov/field/qa/lab-accred-certif.html">www.tceq.texas.qov/field/qa/lab-accred-certif.html</a>.

Cardinal Laboratories is accreditated 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.

Celeg D. Keene

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



APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 1 @ SURFACE (H801093-01)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	8\$	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.228	0.050	04/21/2018	ND	2.10	105	2.00	0.675	
Toluene*	5.46	0.050	04/21/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	3.38	0.050	04/21/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	11.7	0.150	04/21/2018	ND	6.15	103	6.00	2.14	
Total BTEX	20.8	0.300	04/21/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIC	114 9	% 72-148	:						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1060	16.0	04/24/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	188	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	10400	50.0	04/21/2018	ND	213	107	200	3.00	QM-07, QR-03
EXT DRO >C28-C36	2640	50.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	123	% 41-142		- 134 a P - 4 C					
Surrogate: 1-Chlorooctadecane	530	% 37.6-14	7						

# Cardinal Laboratories

\*=Accredited Analyte

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Celany I trains



**APACHE CORP - HOBBS BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received: Reported: 04/19/2018 04/26/2018

Project Name: Project Number: Project Location:

WBDU #85 NONE GIVEN **NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil Cool & Intact

Sampling Condition: Sample Received By:

Jodi Henson

Sample ID: SP 1 @ 1' (H801093-02)

BTEX 8021B

ma/ka

Analyzed By: MS

<del></del>		11.5	74741744						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	25.1	5.00	04/23/2018	ND	2.10	105	2.00	0.675	
Toluene*	450	5.00	04/23/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	150	5.00	04/23/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	434	15.0	04/23/2018	ND	6.15	103	6.00	2.14	
Total BTEX	1060	30.0	04/23/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIL

99.7%

72-148

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/24/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	6540	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	11600	50.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	1620	50.0	04/21/2018	ND					

Surrogate: 1-Chlorooctane

340 %

41-142

Surrogate: 1-Chlorooctadecane

328 %

37.6-147

**Cardinal Laboratories** 

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim ansing, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All cardinal has been contracted by cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable including, without limitetion, business interruptions, loss of vise, or loss of profits incurred by client, its subsidianes, affiliates or successors ansing out of or related to the performance of the services hereunder claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celen Thomas

Celey D. Keene, Lab Director/Quality Manager

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

Fax To:

Received: Reported: 04/19/2018 04/26/2018

Project Name:

WBDU #85 NONE GIVEN

Project Number: Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP 1 @ 2' (H801093-03)

BTEX 8021B	mg/k	g	Analyze	d By: M\$					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	85	% Recovery	True Value QC	RPD	Qualifier
Benzene*	18.8	5.00	04/23/2018	ND	2.10	105	2.00	0.675	
Toluene*	314	5.00	04/23/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	82.2	5.00	04/23/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	244	15.0	04/23/2018	ND	6.15	103	6.00	2.14	
Total BTEX	660	30.0	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	96.0 %	72-148	3			(141)			
Chloride, SM4500CI-B	mg/k	g	Analyze	d By: AC					

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/24/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	3490	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	5780	50.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	753	50.0	04/21/2018	ND					

Surrogate: 1-Chlorooctane

233 %

41-142

Surrogate: 1-Chlorooctadecane

183 %

37.6-147

**Cardinal Laboratories** 

\*=Accredited Analyte

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Calay T. trance

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

Applement Park MC

Received:

04/19/2018

Reported:

DTEV OASID

04/26/2018

Project Name: Project Number:

Project Location:

WBDU #85 NONE GIVEN

---

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

#### Sample ID: SP 1 @ 3' (H801093-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.213	0.050	04/23/2018	ND	2.10	105	2.00	0.675	
Toluene*	1.44	0.050	04/23/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	0.319	0.050	04/23/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	1.11	0.150	04/23/2018	ND	6.15	103	6.00	2.14	
Total BTEX	3.08	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	97.8	% 72-148	}						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BŞ	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	16.9	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	127	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	16.4	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	101	% 41-142	?						
Surrogate: 1-Chlorooctadecane	102	% 37.6-14	17						

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Celley T. Kinne



APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

04/26/2018

Reported: Project Name:

WBDU #85

Project Number: Project Location: NONE GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP 1 @ 4' (H801093-05)

BTEX 8021B	mg/l	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<1.00	1.00	04/23/2018	ND	2.10	105	2.00	0.675	
Toluene*	36.6	1.00	04/23/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	20.1	1.00	04/23/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	64.2	3.00	04/23/2018	ND	6.15	103	6.00	2.14	
Total BTEX	121	6.00	04/23/2018	ND					
Surrogate 4-Bromofluorobenzene (PIE	98.4 %	6 72-148	3			-(12)			
Chloride, SM4500CI-B	mg/l	kg	Analyze	d By: AC					

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	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS				_	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	480	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	1690	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	235	10.0	04/21/2018	ND					

Surrogate: 1-Chlorooctane

131 %

41-142

Surrogate: 1-Chlorooctadecane

123 %

37.6-147

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APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

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Analyzed By: MC

Received:

04/19/2018

Reported:

BTEY 8021B

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

ma/ka

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 1 @ 5' (H801093-06)

BIEX 80518	mg/	кд	Anaiyze	а ву: мъ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.10	105	2.00	0.675	
Toluene*	0.239	0.050	04/23/2018	ND	2.09	105	2.00	2.22	
Ethylbenzene*	0.060	0.050	04/23/2018	ND	2.02	101	2.00	1.75	
Total Xylenes*	0.188	0.150	04/23/2018	ND	6.15	103	6.00	2.14	
Total BTEX	0.487	0.300	04/23/2018	ND					
Surrogate: 4-Bromosluorobenzene (PIL	97.8	% 72-148							
Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	26.4	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	<10.0	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	86.3	% 41-142							7
Surrogate: 1-Chlorooctadecane	82.4	% 37.6-147	7						

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APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received: Reported: 04/19/2018

04/26/2018

Project Name: Project Number: Project Location: WBDU #85 NONE GIVEN NOT GIVEN Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 2 @ SURFACE (H801093-07)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	2.04	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	4.85	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	20.2	0.150	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	27.1	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIC	190	% 72-148	?						
Chloride, SM4500CI-B	mg,	'kg	Analyze	d By: AC	_		<del></del>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	174	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	8110	50.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	1800	50.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	93.9	% 41-142	?		III E				
Surrogate: I-Chlorooctadecane	492	% 37.6-14	7						

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Celen Thomas

Celey D. Keene, Lab Director/Quality Manager

Page 8 of 24



APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 2 @ 1' (H801093-08)

BTEX 8021B	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	<0.050	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	0.055	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	0.285	0.150	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	0.340	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIC	1169	% 72-148	}						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	16.0	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	234	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	57.5	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	92.6	% 41-142	?						
Surrogate: 1-Chlorooctadecane	106	% 37.6-14	7						

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

Fax To:

Received: Reported: 04/19/2018 04/26/2018

Project Name:

WBDU #85 NONE GIVEN

Project Number: Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 2 @ 2' (H801093-09)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	<0.050	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	<0.050	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	<0.150	0.150	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	<0.300	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	112	% 72-148	}						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	95.2	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	<10.0	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	96.1	% 41-142	?						
Surrogate: 1-Chlorooctadecane	96.3	% 37.6-14	17						

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APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 2 @ 3' (H801093-10)

BTEX 8021B	mg/	kg	Analyze	d By: M\$					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	<0.050	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	<0.050	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	<0.150	0.150	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	<0.300	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	110	% 72-148							
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	04/25/2018	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	<10.0	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	<10.0	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	97.1	% 41-142							
Surrogate: 1-Chlorooctadecane	90.0	% 37.6-14	7						

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Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: Project Location: WBDU #85 NONE GIVEN

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Sampling Condition:

Soil Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 3 @ SURFACE (H801093-11)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.54	1.00	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	58.3	1.00	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	37.8	1.00	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	125	3.00	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	224	6.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	127	% 72-148							
Chloride, SM4500CI-B	mg,	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg,	'kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Anatyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1500	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	18400	50.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	3550	50.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	218	% 41-142							
Surrogate 1-Chlorooctadecane	725	% 37.6-14	7						

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Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name:

WBDU #85 NONE GIVEN

Project Number: Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

## Sample ID: SP 3 @ 1' (H801093-12)

BTEX 80218	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	1.42	1.00	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	53.4	1.00	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	32.5	1.00	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	76.3	3.00	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	164	6.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	121	% 72-148	:						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1890	50.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	4690	50.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	624	50.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	189	% 41-142	?						
Surrogate: 1-Chlorooctadecane	160	% 37.6-14	7						

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\*=Accredited Analyte

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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:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP 3 @ 2' (H801093-13)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.532	0.500	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	16.4	0.500	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	7.26	0.500	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	24.0	1.50	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	48.2	3.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	118	% 72-148	1						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BŞ	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg.	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	88	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	848	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	2640	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	364	10.0	04/21/2018	ND					
Surrogate: 1-Chlorooctane	151	% 41-142	?						
Surrogate: 1-Chlorooctadecane	135	% 37.6-14	7						

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\*=Accredited Analyte

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Celego tions



**APACHE CORP - HOBBS BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: SP 3 @ 3' (H801093-14)

BTEX 8021B	mg,	rkg	Analyze	a By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method 8lank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.052	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	1.03	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	0.766	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	2.61	0.150	04/23/2018	ND	6.08	101	6.00	0.503	

ND

04/23/2018

**Total BTEX** 

4.45

0.300

Surrogate: 4-Bromofluorobenzene (PIE	127	% 72-148	•						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	59.5	10.0	04/21/2018	ND	216	108	200	2.57	
DRO >C10-C28*	591	10.0	04/21/2018	ND	213	107	200	3.00	
EXT DRO >C28-C36	78.7	10.0	04/21/2018	ND					

Surrogate: 1-Chlorooctane

100 %

41-142

Surrogate: 1-Chlorooctadecane

121%

37.6-147

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APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 3 @ 4' (H801093-15)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.948	0.500	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	50.4	0.500	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	28.9	0.500	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	83.0	1.50	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	163	3.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIC	132	% 72-148	3						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	817	10.0	04/23/2018	ND	213	107	200	0.870	QM-07
DRO >C10-C28*	2320	10.0	04/23/2018	ND	209	104	200	2.13	QM-07
EXT DRO >C28-C36	313	10.0	04/23/2018	ND					
Surrogate: 1-Chlorooctane	138	% 41-142	?						
Surrogate: 1-Chlorooctadecane	128	% 37.6-14	7						

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**APACHE CORP - HOBBS BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name:

WBDU #85 NONE GIVEN

Project Number: Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 3 @ 5' (H801093-16)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	0.665	0.050	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	0.198	0.050	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	0.544	0.150	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	1.41	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	114 9	% 72-148	}						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	85	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/23/2018	ND	213	107	200	0.870	
DRO >C10-C28*	<10.0	10.0	04/23/2018	ND	209	104	200	2.13	
EXT DRO >C28-C36	<10.0	10.0	04/23/2018	ND					
Surrogate: 1-Chlorooctane	72.3	% 41-142	!						
Surrogate: 1-Chlorooctadecane	68.7	% 37.6-14	7						

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

Fax To:

04/19/2018

Reported: 04/26/2018

Project Name: Project Number:

Received:

WBDU #85 NONE GIVEN

Project Location:

**NOT GIVEN** 

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 4 @ SURFACE (H801093-17)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	1.62	1.00	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	39.9	1.00	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	20.2	1.00	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	68.6	3.00	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	130	6.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	101	% 72-148	}						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS		<u></u>			S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1180	50.0	04/23/2018	ND	213	107	200	0.870	
DRO >C10-C28*	26200	50.0	04/23/2018	ND	209	104	200	2.13	
EXT DRO >C28-C36	5540	50.0	04/23/2018	ND					
Surrogate: 1-Chlorooctane	203	% 41-142	•						
Surrogate: 1-Chlorooctadecane	1410	% 37.6-14	7						

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Celey D. Keene, Lab Director/Quality Manager

Page 18 of 24

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Analyzed By: MS

Received:

RTFY 80218

04/19/2018

Reported:

04/26/2018 WBDU #85

Project Name: Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

## Sample ID: SP 4 @ 1' (H801093-18)

RIEX 8051R	mg	/kg	Analyze	a By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	13.9	1.00	04/23/2018	ND	2.00	100	2.00	0.705	
Toluene*	260	1.00	04/23/2018	ND	2.04	102	2.00	1.64	
Ethylbenzene*	113	1.00	04/23/2018	ND	2.07	104	2.00	1.34	
Total Xylenes*	288	3.00	04/23/2018	ND	6.08	101	6.00	0.503	
Total BTEX	675	6.00	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	137	% 72-148	3						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg	/kg	Analyze	ed By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	3700	10.0	04/23/2018	ND	213	107	200	0.870	
DRO >C10-C28*	6780	10.0	04/23/2018	ND	209	104	200	2.13	
EXT DRO >C28-C36	888	10.0	04/23/2018	ND					
Surrogate: 1-Chlorooctane	236	% 41-142	?						
Surrogate: 1-Chlorooctadecane	191	% 37.6-14	17						

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APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

# Sample ID: SP 4 @ 2' (H801093-19)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.193	0.050	04/23/2018	ND	2.13	106	2.00	2.90	
Toluene*	7.56	0.050	04/23/2018	ND	2.09	104	2.00	2.48	
Ethylbenzene*	5.72	0.050	04/23/2018	ND	2.07	103	2.00	4.39	
Total Xylenes*	17.5	0.150	04/23/2018	ND	6.32	105	6.00	4.60	
Total BTEX	31.0	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIE	171	% 72-148	3						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	327	10.0	04/23/2018	ND	213	107	200	0.870	
DRO >C10-C28*	1260	10.0	04/23/2018	ND	209	104	200	2.13	
EXT DRO >C28-C36	176	10.0	04/23/2018	ND					
Surrogate: 1-Chlorooctane	113	% 41-142	?						
Surrogate: 1-Chlorooctadecane	109	% 37.6-14	7						

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Celleng & treams



APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

04/19/2018

Reported:

04/26/2018

Project Name:

WBDU #85 NONE GIVEN

Project Number: Project Location:

NOT GIVEN

Sampling Date:

04/19/2018

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

Sample ID: SP 4 @ 3' (H801093-20)

BTEX	8021B		

BTEX 8021B	mg/	/ Kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/23/2018	ND	2.13	106	2.00	2.90	QR-03
Toluene*	0.118	0.050	04/23/2018	ND	2.09	104	2.00	2.48	
Ethylbenzene*	<0.050	0.050	04/23/2018	ND	2.07	103	2.00	4.39	
Total Xylenes*	<0.150	0.150	04/23/2018	ND	6.32	105	6.00	4.60	
Total BTEX	<0.300	0.300	04/23/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	95.1	% 72-148							
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	04/25/2018	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/23/2018	ND	213	107	200	0.870	
DRO >C10-C28*	15.7	10.0	04/23/2018	ND	209	104	200	2.13	
EXT DRO >C28-C36	<10.0	10.0	04/23/2018	NĐ					
Surrogate: 1-Chlorooctane	90.8	% 41-142							
Surrogate: 1-Chlorooctadecane	86.3	% 37.6-14	7						

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#### **Notes and Definitions**

5-00	matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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.
0	Chloride by SM4500CI-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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Celeny T. trana



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: 200		0.15/1/2	4-0 for all of a many dependence of a major map of a second or a second or a major map of a second or a second	A	ANALYSIS REQUEST	
		P.O. #:				
H		Company:				
Hobbs State: Wat	Zip: 88240	Attn:				
Phone #: Fax #:		Address:	N N			
Project #: Project Owner:		City:				
Project Name: WADU 86		State: Zip:				
Project Location:		Phone #:	4			
Sampler Name: Stuce Baker		Fax #:		]		
	MATRIX	PRESERV. SAMPLING	LING	PF		
	RS TER			<i>T1</i>		
Lab I.D. Sample I.D.	AB OR (C NTAINEI JNDWA EWATE	R: BASE; COOL	.1~	×t. TE×		
H801093	# CO GRO	OTHI ACID	TIME			
1 SP 1 Swifter	G	V) 4-A-78	8 /2:25	\ \ \		
2 SP 1 @1'	61 /	<	3:00-	\ \ \		
3 sp 1 @2'	6 :	<b>*</b>	3:020 V	< <		
4 SP   @3'	6 -	=	3:000	\ \ \ \		
	G - V	1 11	3:10 pm	\ \ \		
6 SP 1 @ S'	6 - 1		3:12m V	\ \ \		
5P 2	e -	- - -	12:30m	< <		
	6 -	<u></u>	2:100	\		
	611	<b>*</b>	2:15m	\ \ \ -		
10 SP 2 @3'		\ \ ?	2:19m /	V V		
5 fi	m Grigo, waste stalen Austra Seuse An Calus III en Seuse Stalen Basten Peuse	rd or lort, shall be limited to the amount and received by Calctinal within 30 days	after completion of the applical	<b>*</b>		
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Time:

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email Results

Time:

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Sample Condition
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No No

Delivered By: (Circle One) #75



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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May 29, 2018

**BRUCE BAKER** 

**APACHE CORP - HOBBS** 

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #85

Enclosed are the results of analyses for samples received by the laboratory on 05/24/18 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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 <a href="https://www.tceq.texas.qov/field/ga/lab-accred-certif.html">www.tceq.texas.qov/field/ga/lab-accred-certif.html</a>.

Cardinal Laboratories is accreditated 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.

Celey D. Keene

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



**APACHE CORP - HOBBS** BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Received:

05/24/2018

Reported:

05/29/2018

Project Name: Project Number: WBDU #85 **NONE GIVEN** 

Project Location:

**NOT GIVEN** 

Sampling Date:

05/24/2018

Sampling Type:

Soil

Sampling Condition:

\*\* (See Notes)

Sample Received By:

Tamara Oldaker

# Sample ID: SP 1 @ 6' (H801426-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/26/2018	ND	1.70	85.2	2.00	2.11	
Toluene*	0.503	0.050	05/26/2018	ND	1.70	85.1	2.00	3.26	
Ethylbenzene*	0.434	0.050	05/26/2018	ND	1.76	88.1	2.00	0.591	
Total Xylenes*	1.79	0.150	05/26/2018	ND	5.28	88.0	6.00	0.437	
Total BTEX	2.73	0.300	05/26/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIL	113 9	% 69.8-14	2		114/4/				
Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	05/25/2018	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	27.6	10.0	05/25/2018	ND	233	117	200	1.37	
DRO >C10-C28*	323	10.0	05/25/2018	ND	225	113	200	1.48	
EXT DRO >C28-C36	50.6	10.0	05/25/2018	ND					
Surrogate: 1-Chlorooctane	88.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	98.9	% 37.6-14	7						

# Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's bability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other clause whistoners shall be deemed waved unless made in writing and received by Cardinal within 11th (30) days after completion of the applicable service. In no event shall be labele for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors anising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise, Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal subsortions.

Celegy T. treams

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To:

(575) 393-2432

Analyzed By: MC

Received:

05/24/2018

Reported:

RTFY RA21R

05/29/2018

Project Name: Project Number: WBDU #85 NONE GIVEN

Project Location:

NOT GIVEN

Sampling Date:

05/24/2018

Sampling Type:

Sampling Condition: \*

\*\* (See Notes)

Sample Received By:

Tamara Oldaker

# Sample ID: SP 1 @ 7' (H801426-02)

BTEX \$021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/26/2018	ND	1.70	85.2	2.00	2.11	
Toluene*	0.176	0.050	05/26/2018	ND	1.70	85.1	2.00	3.26	
Ethylbenzene*	0.243	0.050	05/26/2018	ND	1.76	88.1	2.00	0.591	
Total Xylenes*	1.07	0.150	05/26/2018	ND	5.28	88.0	6.00	0.437	
Total BTEX	1.49	0.300	05/26/2018	ND					
Surrogate: 4-Bromofluorobenzene (PIC	Ш	% 69.8-14	2						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	05/25/2018	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	26.4	10.0	05/25/2018	ND	233	117	200	1.37	
DRO >C10-C28*	508	10.0	05/25/2018	ND	225	113	200	1.48	
EXT DRO >C28-C36	87.0	10.0	05/25/2018	ND					
Surrogate: 1-Chlorooctane	89.6	% 41-142	?						
Surrogate: 1-Chlorooctadecane	93.1	% 37.6-14	17						

# Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Uabday and Damages. Cardinal's Babliny and client's exclusive remedy for any claim ansing, whether based in contract or tort, shall be limited to the amount paid by client for analysiss. All claims, including those for negligence and any other clause whatsoever shall be deemed waived unless made in writing and risewed by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential diamages, including, without limitation, business interruptions, toss of use, or loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celen T. Kerne

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 5



#### **Notes and Definitions**

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

Cardinal Laboratories

\*=Accredited Analyte

PLEASE MOTE: Liabeley and Damages. Cardinal's Babiley and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by thent for analyses. All claims, including those for negligence and any other cause whitestories shall be deemed wahred unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be Bable for incidencal or consequential damages, including, webout limitation, business interruptions, loss of use, or loss of predits incurred by client, its subsidiaries, efficiency arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeny T. trana



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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Charles Charle			City:	241	
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Charles Charles Exy	Sampler Name: Joe Edwinson	!	Fax #:	<i>L</i> ,	
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C D Yes D No		# CONTAINERS GROUNDWATER WASTEWATER SOIL OIL	ACID/BASE: ICE / COOL OTHER :	Ch NOVPLI E	
T D Yes D No	_		4-k-S	1	
t: Ü Yes C No	759	\ \ \	5-24-18 2:	1	
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Date: Received By:    Date: Received By:   Phone Result:   Dives   Divo	service. In no event shall Cerdinal be lable for incidental or consequental damages, including still take, or suggestors arising ead of related to the performance of services herounder by C	y without Smitation, business interruptions, it Cardinal, regardless of whether such claim is	es of use, or loss of profits incurred by client, in based upon any of the above stated reasons	ts aubsidiaries, or otherwise.	
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