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## **Remediation and Closure Report**

NB Tween State #1 \* 30-015-35915 \* 2RP-3511

Talon Project No. 700745.053.01

### **Prepared For:**

Apache Corporation  
2350 W Marland Blvd  
Hobbs, New Mexico 88240

### **Prepared By:**

Kimberly M. Wilson  
Talon/LPE  
408 West Texas  
Artesia, New Mexico 88210

**October 4, 2016**

Mr. Mike Bratcher  
**NMOCD District 2**  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210

Subject:       **Remediation Closure Report**  
                  Apache Corporation  
                  NB Tween State #1 Battery  
                  API # 30-015-35915 2RP-3511

Dear Mr. Bratcher,

Apache Corporation (Apache) had contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The incident description, soil sampling results, remediation activities and closure request are submitted herein.

#### **Incident Date**

December 28, 2015

#### **Site Information**

The NB Tween State #1 is located approximately sixteen (16) miles east of Artesia, New Mexico. The legal location for this site is Unit Letter H of Section 25, Township 17 South, and Range 28 East in Eddy County, New Mexico. More specifically the latitude and longitude for the location are 32.807655 North and -104.12471 West.

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service (NRCS), the soil in this area is made up of Simona gravelly fine sandy loam with 0 to 3 percent slopes. Drainage courses in this area are normally dry.

#### **Ground Water and Site Ranking**

According to the Chevron Texaco Groundwater Trend Map, has the ground water in this area is approximately 175-feet below ground surface (BGS).

Depth to ground water	>100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 5,000 mg/kg for TPH and 1,000 mg/kg for total chlorides.

## Incident Description

The gasket on the heater treater failed resulting in 50 barrels of oil and 70 barrels of produced water to be released on the location. The wells were shut in. No fluids were recovered due to inclement weather. The roads were impassible for a vac truck to make it to location due to the snow. All fluid was contained on location.

On January 26, 2016 Talon mobilized personnel to begin the site assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected utilizing a backhoe to a depth of 6-feet below ground surface.

Talon returned to the site with a backhoe for further vertical delineation of the impacted area as directed by the NMOCD. Vertical delineation sampling was carried out on May 3, 2016.

## Remedial Actions Taken

The remediation activities were completed pursuant to the work plan approved by the NMOCD.

The impacted area in the vicinity of sample location S-2 was excavated to a depth of 1-foot deep, S-3 and S-4 were excavated to a depth of 1.5-foot deep. The hydrocarbon impacted area within the battery at S-5 was excavated to a depth of 1.5-feet deep, the area at S-6 excavated to 2-feet and the area at S-7 was excavated to a depth of 1-foot BGS.

The excavated areas within the separator battery were left in rough condition. This was done to create a greater surface area for the spray-application of a high-nitrogen fertilizer and mircoblaze mixture in order to have the greatest chance of achieving maximum results.

All contaminated soil was transported to Lea Land, LLC, an approved disposal facility. The excavated areas on location were backfilled with new caliche, machine compacted and re-contoured to match the surrounding location.

After 90 days confirmation samples were collected within the separator battery to verify effectiveness of the treatment. Laboratory results are presented below and in [Appendix I](#).

September 16, 2016

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO
S-5		<0.300	32	<10	1040
S-6		0.881	64	<10	530
S-7		<10	48	<10	1140

## Closure

On behalf of Apache Corporation we respectfully request that no further actions be required and that closure with respect to this release be granted. A Final C-141 is also attached.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE



Kimberly M. Wilson  
Project Manager



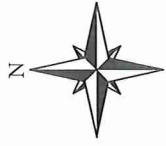
David J. Adkins  
District Manager

## Attachments:

Appendix I    Site Map  
Appendix II    Laboratory Report

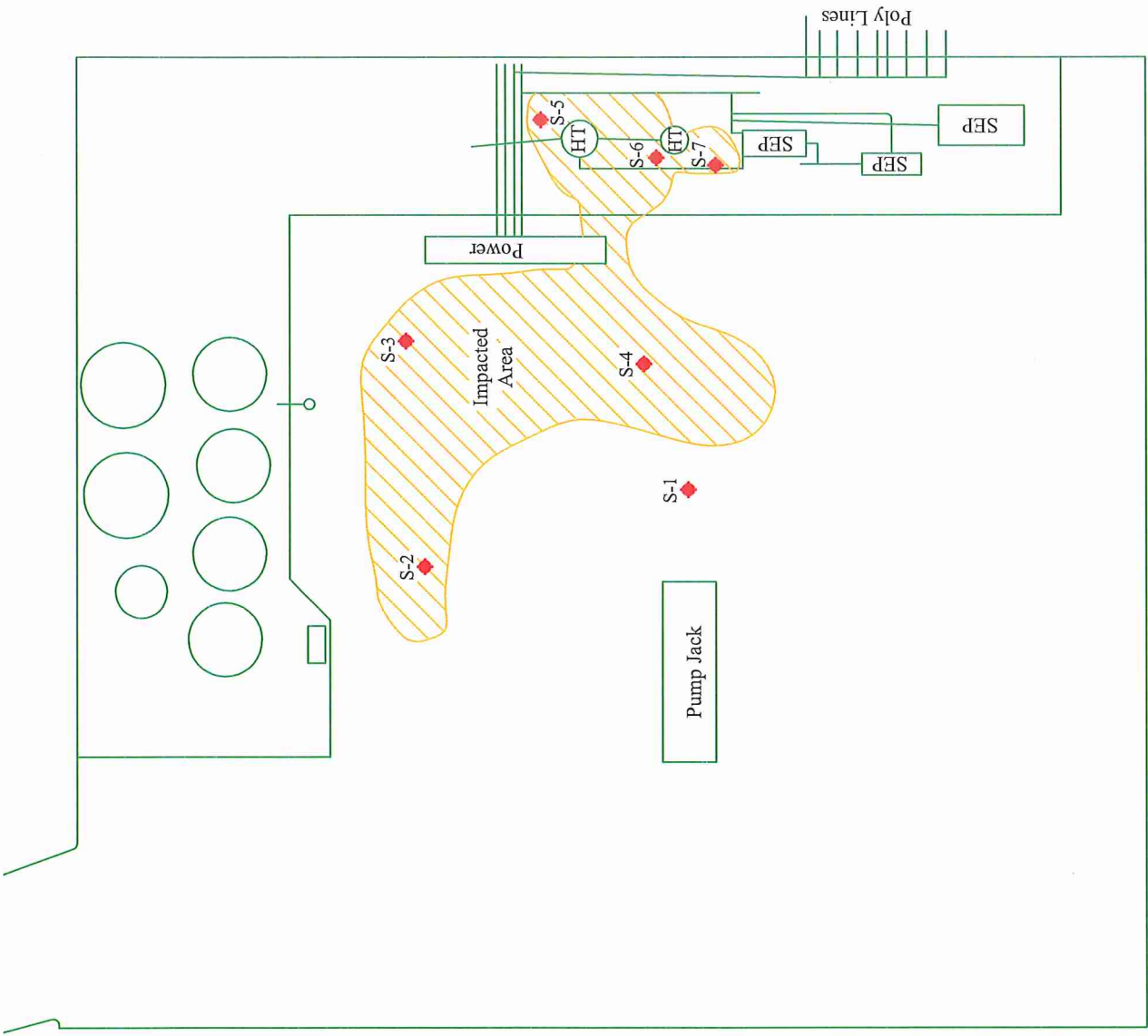
## **APPENDIX I**

### **SITE MAP**



Legend

- Sample Location



NBTween St #1  
Apache Corporation  
Eddy County, New Mexico  
Figure 1 - Site Plan

Date: 06/08/2016  
Scale: 1" = 40'  
Drawn By: TJS



**APPENDIX II**  
**LABORATORY RESULTS**





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

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September 16, 2016

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NBTWEEN

Enclosed are the results of analyses for samples received by the laboratory on 09/08/16 13:00.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

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

 Received: 09/08/2016  
 Reported: 09/16/2016  
 Project Name: NBTWEEN  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY

 Sampling Date: 09/08/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-5 (H602022-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2016	ND	2.10	105	2.00	0.123	
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288	
Ethylbenzene*	<0.050	0.050	09/12/2016	ND	2.10	105	2.00	0.00802	
<b>Total Xylenes*</b>	<b>0.169</b>	0.150	09/12/2016	ND	6.37	106	6.00	0.0381	
Total BTEX	<0.300	0.300	09/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 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
<b>Chloride</b>	<b>32.0</b>	16.0	09/12/2016	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27	
<b>DRO &gt;C10-C28</b>	<b>1040</b>	10.0	09/14/2016	ND	220	110	200	9.53	

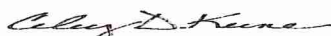
Surrogate: 1-Chlorooctane 88.8 % 35-147

Surrogate: 1-Chlorooctadecane 117 % 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: 09/08/2016  
 Reported: 09/16/2016  
 Project Name: NBTWEEN  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY

 Sampling Date: 09/08/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-6 (H602022-02)**

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	09/12/2016	ND	2.10	105	2.00	0.123		
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288		
Ethylbenzene*	0.434	0.050	09/12/2016	ND	2.10	105	2.00	0.00802		
Total Xylenes*	0.446	0.150	09/12/2016	ND	6.37	106	6.00	0.0381		
Total BTEX	0.881	0.300	09/12/2016	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 112 % 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	64.0	16.0	09/12/2016	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27		
DRO >C10-C28	530	10.0	09/14/2016	ND	220	110	200	9.53		

Surrogate: 1-Chlorooctane 94.0 % 35-147

Surrogate: 1-Chlorooctadecane 96.9 % 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: 09/08/2016  
 Reported: 09/16/2016  
 Project Name: NBTWEEN  
 Project Number: NONE GIVEN  
 Project Location: EDDY COUNTY

 Sampling Date: 09/08/2016  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-7 (H602022-03)**

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	09/12/2016	ND	2.10	105	2.00	0.123	
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288	
Ethylbenzene*	<0.050	0.050	09/12/2016	ND	2.10	105	2.00	0.00802	
Total Xylenes*	<0.150	0.150	09/12/2016	ND	6.37	106	6.00	0.0381	
Total BTEX	<0.300	0.300	09/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.6 % 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	48.0	16.0	09/12/2016	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27	
DRO >C10-C28	1140	10.0	09/14/2016	ND	220	110	200	9.53	

Surrogate: 1-Chlorooctane 92.0 % 35-147

Surrogate: 1-Chlorooctadecane 122 % 28-171

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

### BILL TO

### ANALYSIS REQUEST

Company Name: Talco/Alpe  
Project Manager: David Perkins

P.O. #:

Address: 408 West Texas

Company: Apache

City: Artesia

State: NM Zip: 88210

Attn:

Phone #: 575-87468

Fax #: 575-746-8905

Address:

Project #:

Project Owner: Apache

Project Name: NB Tween

City:

Project Location: Eddy City

State:

Sampler Name: Kim Wilson

Phone #:

FOR LAB USE ONLY

Fax #:

Lab I.D.

Sample I.D.

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER :  
ACID/BASE:  
ICE / COOL  
OTHER :

MATRIX

PRESERV

SAMPLING

DATE

TIME

TPH  
BTEX  
Cl

1 3-5  
2 3-6  
3 3-7

61  
41  
41

9/9/16 8:00  
8:04  
8:06

✓  
✓  
✓

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Relinquished By:

Date: 9/9/16

Received By:

Relinquished By:

Date: 9/9/16

Received By:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

5.12

Sample Condition  
Cool ☒ Intact ☒  
Yes ☒ No ☒

CHECKED BY: Kim

Phone Result: ☐ Yes ☐ No Add'l Phone #:  
Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:

Kimberly added Cl

Kim

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#72