



September 16, 2020

Mr. Bradford Billings  
State of New Mexico Oil Conservation Division  
1220 South St Francis Drive  
Santa Fe, NM 87505

RE: 2RP-1604 Raven Fed Com # 12H

Mr. Billings,

In compliance with 19.15.29.15(B) NMAC and the agreement submitted by Apache Corporation on November 8, 2018, Apache Corporation is submitting information related to closure for the release occurring January 21, 2013. Apache is respectfully submitting the closure report based on remediation and studies occurring in 2020 that demonstrate the site meeting the requirements of the agency. Unless further information is requested by NMOCD, Apache Corporation considers this release closed.

If there are any questions, please feel free to contact me by telephone at 432-631-6982 or by e-mail at [larry.baker@apachecorp.com](mailto:larry.baker@apachecorp.com)

Sincerely,

Larry Baker  
Environmental Technician SR.  
Apache Corporation

Attachment: Closure Report Dated September 16, 2020



303 Veterans Airpark Lane Midland, TX 79705

## **Closure Report**

September 16, 2020

Re: Raven Fed Com # 12H  
Case: 2RP-1604

On 1/21/2013 a release occurred due to displacement fluid was flowing over the top of the BOP and caused the cellar to overflow into the trenches. The release (GPS: 32.849911, - 103.899498) is located east of Loco Hills, New Mexico in unit letter E section 8 township 17S range 31E. There is no known ground water located in township 17S range 31E.

Using the information found on the initial C-141 and google imaging to find the release location. On 8/14/2019 5 vertical points were sampled to a depth of 2 feet. All samples were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Laboratory results indicated that the surface for SP 5 was above the table one standards for releases greater than 100 feet to ground water. On 1/29/2020 the surface at SP 5 was hand dug 3 to 6 inches due to many buried utilities associated with the current satellite. The area was grid off into 200 square feet sections and 5 point surface composite samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. The laboratory results were below table one standards for release greater than 100 feet to ground water. The excavated soil(<1 yard) was placed on plastic and hauled off during the remediation activities associated with the NFE Federal # 8 which was located on the same pad.

Apache Corporation has demonstrated that the levels are below table one standards for release greater than 100 feet to ground water and respectfully request closure of event # 2RP-1604.

Enclosed: C-141, Maps, Sample Data, Laboratory Results, and Photos.

Submitted by;

*Bruce Baker*

**Environmental Technician**

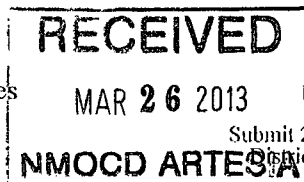
**larry.baker@apachecorp.com**

**Cell# 432-631-6982**

**Off# 432-818-1000**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



Form C-141  
Revised October 10, 2003  
Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

## Release Notification and Corrective Action

NJM 1309854309

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Apache Corporation	873	Contact Natalie Gladden
Address PO Box 1849, Eunice NM 88231		Telephone No. 575-390-4186
Facility Name Raven Fed. Com 12H		Facility Type Drilling/Production

Surface Owner Unknown	Mineral Owner BLM	Lease No. 30-015-40468
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## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	8	17S	31E	2088'	FNL	220'	FWL	Eddy

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

## NATURE OF RELEASE

Type of Release Brine/Drilling Mud	Volume of Release 10	Volume Recovered 8
Source of Release Displacement in hole/overflow of bins	Date and Hour of Occurrence 01/21/13	Date and Hour of Discovery 01/21/13
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Natalie Gladden	Date and Hour 01/21/13	
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.\*

Rig was tripping in the hole, when displacement fluid was flowing over the top of the BOP and caused the cellar to over-flow into the trenches.

Describe Area Affected and Cleanup Action Taken.\*

Once the well is drilled along with the five wells on this pad, the entire site will be remediated to standard.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC D 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 NMOC D 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, NMOC D acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

## OIL CONSERVATION DIVISION

Signature:

Printed Name: Natalie Gladden

Title: Sr. Environmental Tech

E-mail Address: natalie.gladden@apachecorp.com

Date: 01/21/13 Phone: 575-390-4186

Approved by District Supervisor:

Signed By

APR 08 2013

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

Remediation per OCD Rule & Guidelines. **SUBMIT REMEDIATION PROPOSAL NO LATER THAN:**

May 8, 2013

2RP-1604

\* Attach Additional Sheets If Necessary

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>None</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Larry Baker Title: Environmental Tech SR.  
Signature: Larry Baker Date: 9/16/2020  
email: larry.baker@apachecorp.com Telephone: 432-631-6982

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

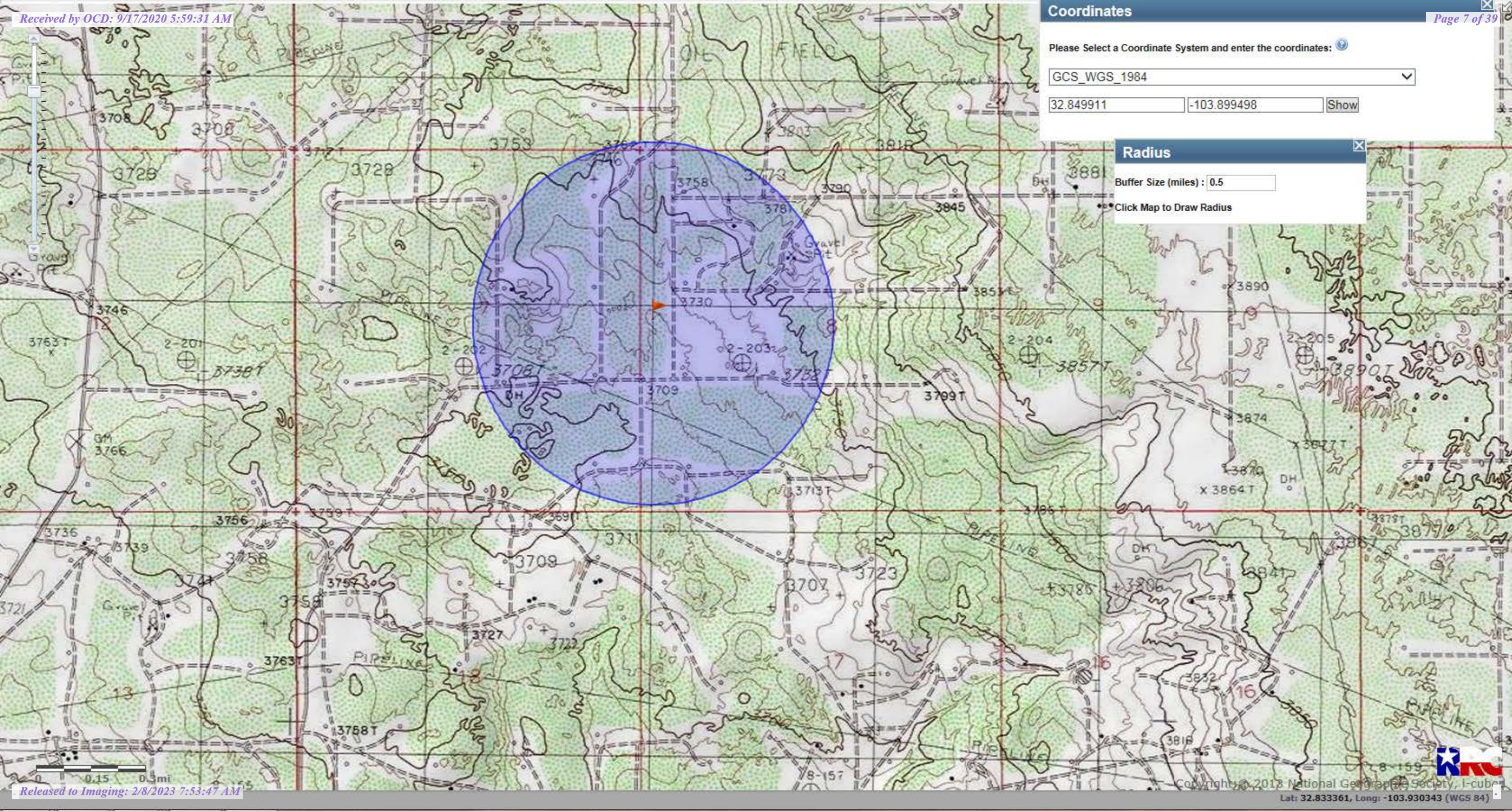
Printed Name: Larry Baker Title: Environmental Tech SR.  
Signature: Larry Baker Date: 9/16/2020  
email: larry.baker@apachecorp.com Telephone: 432-631-6982

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Brittany Hall Date: 2/8/2023  
Printed Name: Brittany Hall Title: Environmental Specialist



**Coordinates**

Please Select a Coordinate System and enter the coordinates:

GCS\_WGS\_1984

32.849911

-103.899498

Show

**Radius**

Buffer Size (miles) : 

0.5

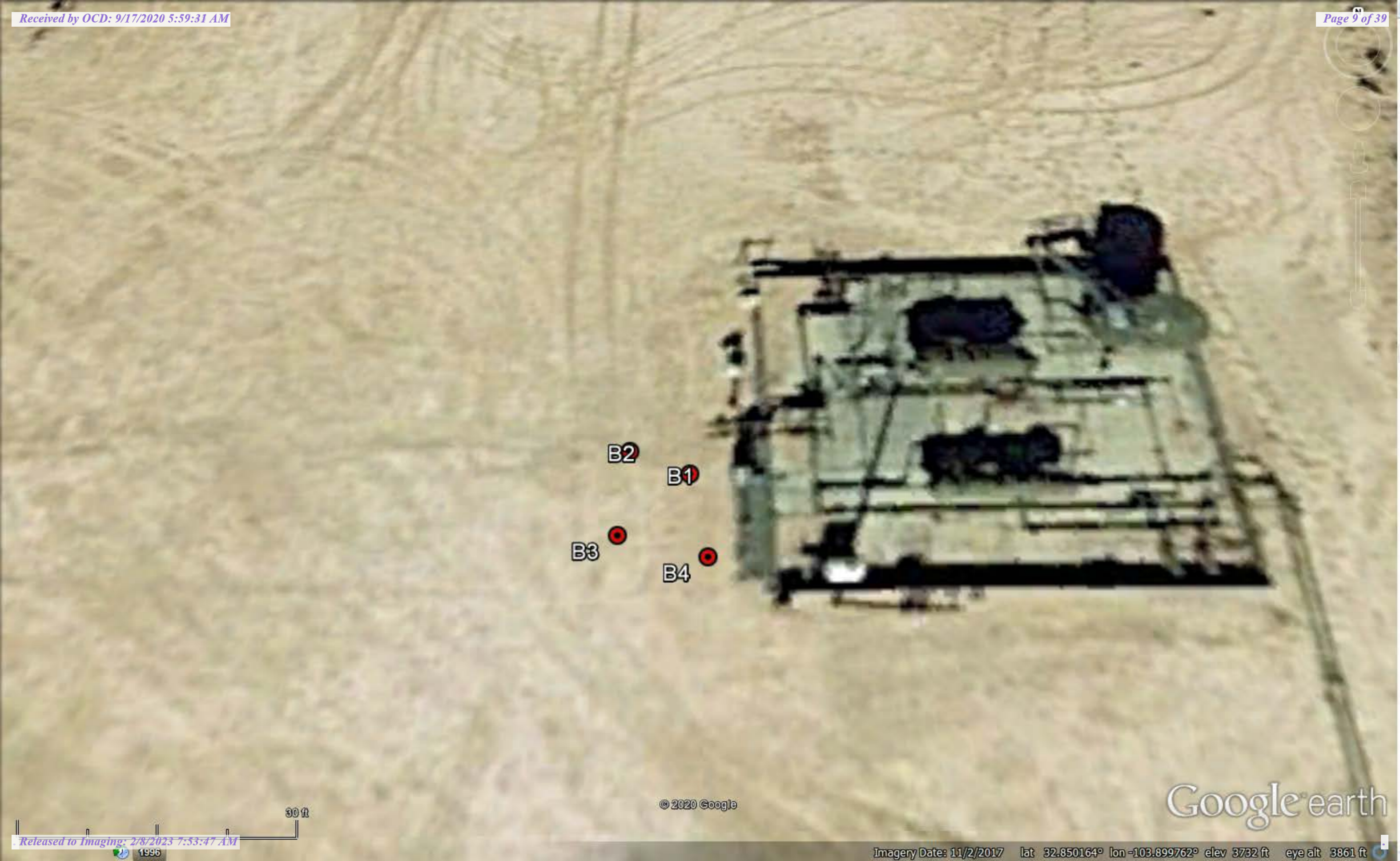
• Click Map to Draw Radius



SP 2  
SP 3  
SP 1  
SP 5  
SP 4



Google earth



B2  
B1  
B3  
B4

© 2020 Google

Google earth

Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
<u>Delineation Samples</u>												
8/14/2019	SP1	S	9330	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.849911, - 103.899498
8/14/2019		1'	2880	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019		2'	960	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019	SP2	S	9330	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<16.6	<10.0	32.849941, - 103.899452
8/14/2019		1'	1180	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019		2'	1090	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019	SP3	S	4880	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	84.4	<10.0	32.849903, - 103.899513
8/14/2019		1'	2040	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	11.5	<10.0	
8/14/2019		2'	256	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019	SP4	S	4320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.849934, - 103.899467
8/14/2019		1'	1230	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019		2'	864	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019	SP5	S	22600	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.849892, - 103.899391
8/14/2019		1'	6320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
8/14/2019		2'	768	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	

<u>Final Bottom Samples</u>												
Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
1/29/2020	B1	0"	4880	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.8499386, - 103.899247
1/29/2020	B2	0"	3760	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.8999451, - 103.8994539
1/29/2020	B3	0"	6800	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.8499019, - 103.8994559
1/29/2020	B4	0"	896	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.8498928, - 103.8994214



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

August 19, 2019

BRUCE BAKER

Note: Currently the pad were the Raven Fed. Com 12H was is called Pad 8.

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NFE FED #8

Enclosed are the results of analyses for samples received by the laboratory on 08/14/19 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 1 @ SURFACE 32.849911 (H902794-01)**

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	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTEX	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9330	16.0	08/15/2019	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	08/15/2019	ND	212	106	200	0.826	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	220	110	200	8.90	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 74.5 % 41-142

Surrogate: 1-Chlorooctadecane 72.1 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability 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 cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable 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 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.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 1 @ 1 -103.899498 (H902794-02)**

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	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTX	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2880	16.0	08/15/2019	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	08/15/2019	ND	212	106	200	0.826	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	220	110	200	8.90	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 79.5 % 41-142

Surrogate: 1-Chlorooctadecane 76.1 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability 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 cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable 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 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.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 1 @ 2 (H902794-03)**

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	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTX	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	08/15/2019	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	08/15/2019	ND	212	106	200	0.826	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	220	110	200	8.90	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 79.6 % 41-142

Surrogate: 1-Chlorooctadecane 77.4 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 2 @ SURFACE 32.849941 (H902794-04)**

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	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTEx	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9330	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	16.6	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 2 @ 1 - 103.899452 (H902794-05)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTEX	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1180	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 97.6 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 2 @ 2 (H902794-06)**

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	08/15/2019	ND	1.85	92.3	2.00	5.37	
Toluene*	<0.050	0.050	08/15/2019	ND	2.02	101	2.00	7.71	
Ethylbenzene*	<0.050	0.050	08/15/2019	ND	2.04	102	2.00	6.98	
Total Xylenes*	<0.150	0.150	08/15/2019	ND	6.17	103	6.00	6.50	
Total BTX	<0.300	0.300	08/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 3 @ SURFACE 32.849903 (H902794-07)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24		
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02		
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78		
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21		
Total BTEX	<0.300	0.300	08/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4880	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	84.4	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 77.8 % 41-142

Surrogate: 1-Chlorooctadecane 88.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 3 @ 1 - 103.899513 (H902794-08)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTEX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2040	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	11.5	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 92.5 % 41-142

Surrogate: 1-Chlorooctadecane 97.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 3 @ 2 (H902794-09)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 99.6 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ SURFACE (H902794-10)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4320	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 93.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 1 32.849934 (H902794-11)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1230	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 95.8 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 2 - 103.899467 (H902794-12)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	864	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 98.0 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 @ SURFACE 32.849892 (H902794-13)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	22600	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 96.0 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 @ 1 -103.899391 (H902794-14)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/17/2019	ND	1.83	91.4	2.00	6.24		
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02		
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78		
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21		
Total BTEx	<0.300	0.300	08/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6320	16.0	08/15/2019	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	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 93.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/14/2019  
 Reported: 08/19/2019  
 Project Name: NFE FED #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 08/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 @ 2 (H902794-15)**

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	08/17/2019	ND	1.83	91.4	2.00	6.24	
Toluene*	<0.050	0.050	08/17/2019	ND	1.92	95.9	2.00	6.02	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.05	102	2.00	5.78	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.16	103	6.00	6.21	
Total BTEX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	768	16.0	08/15/2019	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*	<10.0	10.0	08/15/2019	ND	203	101	200	0.792	
DRO >C10-C28*	<10.0	10.0	08/15/2019	ND	208	104	200	0.309	
EXT DRO >C28-C36	<10.0	10.0	08/15/2019	ND					

Surrogate: 1-Chlorooctane 95.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.4 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

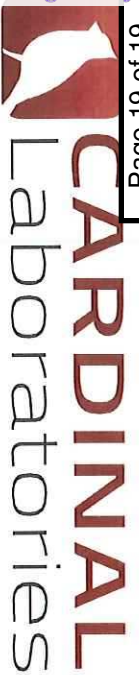
Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



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

---

February 04, 2020

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NFE PAD #8

Enclosed are the results of analyses for samples received by the laboratory on 01/29/20 14:42.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 01/29/2020  
 Reported: 02/04/2020  
 Project Name: NFE PAD #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 01/29/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 1 @ 0" 32.8499386 - 103.899247 (H000284-01)**

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	01/31/2020	ND	1.99	99.4	2.00	10.2		
Toluene*	<0.050	0.050	01/31/2020	ND	2.03	101	2.00	9.92		
Ethylbenzene*	<0.050	0.050	01/31/2020	ND	1.96	98.1	2.00	9.78		
Total Xylenes*	<0.150	0.150	01/31/2020	ND	5.89	98.2	6.00	9.82		
Total BTEX	<0.300	0.300	01/31/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4880	16.0	01/31/2020	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	01/30/2020	ND	201	101	200	0.206	
DRO >C10-C28*	<10.0	10.0	01/30/2020	ND	217	108	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	01/30/2020	ND					

Surrogate: 1-Chlorooctane 67.9 % 41-142

Surrogate: 1-Chlorooctadecane 75.4 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 01/29/2020  
 Reported: 02/04/2020  
 Project Name: NFE PAD #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 01/29/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 2 @ 0" 32.8999451 - 103.8994539 (H000284-02)**

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	01/31/2020	ND	1.99	99.4	2.00	10.2		
Toluene*	<0.050	0.050	01/31/2020	ND	2.03	101	2.00	9.92		
Ethylbenzene*	<0.050	0.050	01/31/2020	ND	1.96	98.1	2.00	9.78		
Total Xylenes*	<0.150	0.150	01/31/2020	ND	5.89	98.2	6.00	9.82		
Total BTEX	<0.300	0.300	01/31/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3760	16.0	01/31/2020	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	01/30/2020	ND	201	101	200	0.206	
DRO >C10-C28*	<10.0	10.0	01/30/2020	ND	217	108	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	01/30/2020	ND					

Surrogate: 1-Chlorooctane 73.9 % 41-142

Surrogate: 1-Chlorooctadecane 77.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 01/29/2020  
 Reported: 02/04/2020  
 Project Name: NFE PAD #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 01/29/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 3 @ 0" 32.8499019 - 103.8994559 (H000284-03)**

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	01/31/2020	ND	1.99	99.4	2.00	10.2		
Toluene*	<0.050	0.050	01/31/2020	ND	2.03	101	2.00	9.92		
Ethylbenzene*	<0.050	0.050	01/31/2020	ND	1.96	98.1	2.00	9.78		
Total Xylenes*	<0.150	0.150	01/31/2020	ND	5.89	98.2	6.00	9.82		
Total BTEX	<0.300	0.300	01/31/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6800	16.0	01/31/2020	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	01/30/2020	ND	201	101	200	0.206	
DRO >C10-C28*	<10.0	10.0	01/30/2020	ND	217	108	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	01/30/2020	ND					

Surrogate: 1-Chlorooctane 61.3 % 41-142

Surrogate: 1-Chlorooctadecane 62.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 01/29/2020  
 Reported: 02/04/2020  
 Project Name: NFE PAD #8  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 01/29/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 4 @ 0" 32.8498928 - 103.8994214 (H000284-04)**

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	01/30/2020	ND	2.08	104	2.00	8.27	
Toluene*	<0.050	0.050	01/30/2020	ND	2.02	101	2.00	8.43	
Ethylbenzene*	<0.050	0.050	01/30/2020	ND	2.01	101	2.00	8.50	
Total Xylenes*	<0.150	0.150	01/30/2020	ND	5.94	99.0	6.00	8.68	
Total BTEX	<0.300	0.300	01/30/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	01/31/2020	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	01/30/2020	ND	201	101	200	0.206	
DRO >C10-C28*	<10.0	10.0	01/30/2020	ND	217	108	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	01/30/2020	ND					

Surrogate: 1-Chlorooctane 67.6 % 41-142

Surrogate: 1-Chlorooctadecane 72.7 % 37.6-147

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\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability 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 cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable 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 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.

Celey D. Keene, Lab Director/Quality Manager

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

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### Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

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Celey D. Keene, Lab Director/Quality Manager



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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 10234

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 10234
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Site will need to meet the requirements of 19.15.29.13 NMAC at time of plugging and abandonment.	2/8/2023