

Incident ID	nRM1926352539
District RP	1RP-5677
Facility ID	
Application ID	pRM1926352024

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>21</u> (ft bgs)
Did this release impact groundwater or surface water?	<input checked="" type="checkbox"/> Yes <input 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 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 not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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

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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: Bruce Baker Title: Environmental Tech Sr.

Signature: _____ Date: _____

email: larry.baker@apachecorp.com Telephone: 432-631-6982**OCD Only**

Received by: _____ Date: _____

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Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Bruce Baker Title: Environmental Tech Sr.

Signature: _____ Date: _____

email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

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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: Bruce Baker Title: Environmental Tech Sr.

Signature: _____ Date: _____

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: _____ Date: _____

Printed Name: _____ Title: _____

1RP-5677
EXCAVATION CLOSURE AND GROUNDWATER REPORT
North Monument G/SA Unit #002
Produced Water and Crude Oil Release

Lea County, New Mexico

Latitude: 32.61233°
Longitude: -103.27262°

LAI Project No. 19-0112-51

June 3, 2022

Prepared for:
Apache Corporation
2350 W. Marland Blvd
Hobbs, New Mexico 88240

Prepared by:
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Mark J. Larson, P.G.
Certified Professional Geologist #10490



Robert Nelson
Sr. Geoscientist

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Excavation Closure and Groundwater Report
North Monument G/SA Unit #002
Lea County, New Mexico
June 3, 2022

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1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this excavation closure and groundwater report for submittal to the New Mexico Oil Conservation Division (OCD) in Santa Fe and Hobbs, New Mexico, on behalf of Apache Corporation (Apache). This report presents remediation activities at the NMGSAU 2102(Site) located in Unit O (SW/4, SE/4), Section 32, Township 19 South, Range 37 East, in Lea County, New Mexico. The geodetic position is North 32.61233 and West -103.27262. Figure 1 presents a topographic map. Figure 2 presents an aerial drawing.

1.1 Background

The crude oil and produced water release occurred on August 16, 2019, due to corrosion and failure of a buried 3-inch steel flowline. The failure allowed for an unknown volume of crude oil and produced water to be released. Approximately 2.5 barrels (bbls) of crude oil and produced water were recovered. The fluid pooled in the pasture south of the well pad and west of the lease road. Immediate notice was given to Mr. Dylan Rose-Cross (NMOCD) by Mr. Jeffery Broom (Apache Environmental Tech) via email on August 16, 2019. The surface ownership is private. The initial C-141 was submitted on August 29, 2019 and assigned remediation permit number of 1RP-5677. Appendix A presents the initial C-141.

On October 10, 2019, Apache applied for a variance to backfill the excavation due to the presence of groundwater between approximately 21 to 23 feet below ground surface (bgs), and total petroleum hydrocarbon (TPH) and chloride contamination in soil beneath the excavation at approximately 12 feet bgs. The request stated that Apache would backfill the excavation with clean caliche to about 6 feet bgs, install a 20-mil polyethylene synthetic liner, and complete backfilling to surface with clean topsoil containing chloride less than 600 mg/Kg. NMOCD approved the variance request on October 16, 2019, under the condition that Apache will install two (2) monitor wells, with TMW-1 installed as close as possible to the source of the release and TMW-2 installed hydraulically down gradient approximately 150 feet southeast of the excavation. Additional, NMOCD requested one (1) monitor well be installed hydraulically upgradient to monitor background groundwater. Appendix B presents the variance request and NMOCD communications.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,564 feet above mean sea level (msl).
- The topography slopes gently towards the southeast.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes this site as "Low Risk Potential".
- The soils are designated Berino-Cacique fine sandy loams association, 0 to 3 percent slopes, consisting of 8 inches of fine sandy loam and 52 inches of sandy clay loam in descending order.
- The surface geology consists of Eolian and piedmont deposits (Holocene to middle Pleistocene) interlayered eolian sands and piedmont-slop deposits.

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- Groundwater occurs in the Ogallala Formation from about 21 to 23 feet below ground surface (bgs) based on depth to groundwater from two (2) monitoring wells installed near the excavation.

Appendix C presents the karst potential map.

1.3 Remediation Levels

The following remediation standards are based on closure criteria for soil impacted by a release as presented in Table 1 of 19.15.29 NMAC:

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 100 mg/Kg
- Chloride 600 mg/Kg

Further, 19.15.29.13 NAMC (Restoration, Reclamation, and Re-Vegetation) requires the operator to restore the impacted surface area that existed prior to the release or their final land use.

2.0 SOIL REMEDIATION

Between September 4 and 23, 2019, an Apache contractor excavated contaminated soil to approximately twelve (12) feet bgs or about 10 feet above groundwater over an area measuring approximate 16,024 square feet or about 0.37 acre. Personnel from Apache collected confirmation soil samples from the excavation floor (bottom) and sidewalls. The samples were delivered under chain of custody to Cardinal Laboratories in Hobbs, New Mexico, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA SW-846 Method 8021B, total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28), and oil range organics (<C28-C35) by EPA SW-846 Method 8015M and chloride by titration method SM4500 CL-B. The samples were five-point composites collected no more than every 200 square feet of the excavation sidewalls (W1 through W36) and floor (B1 through B87).

All sidewall samples reported benzene, BTEX, TPH, and chloride less than the OCD remediation limits of 10 milligrams per kilogram (mg/Kg), 50 mg/Kg, 100 mg/Kg, and 600 mg/Kg, respectively. All floor (bottom) samples reported benzene and BTEX below the OCD remediation levels. TPH was reported above the remediation level of 100 mg/Kg in the following floor samples:

Sample ID	TPH (mg/Kg)
B48	256.5
B55	119
B56	461.8
B63	136
B77	277.3

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Chloride was reported above the OCD remediation level (600 mg/Kg) in the following floor samples:

Sample ID	Chloride (mg/Kg)
B5	608
B10	688
B11	976
B19	923
B22	816
B23	720
B45	1,170
B55	720
B56	864
B57	1,120
B58	832
B59	1,120
B62	928
B63	816
B64	1,060
B65	976
B66	1,300
B67	640
B76	784
B77	1,140
B78	1,090
B79	688

On October 19, 2020, per the NMOCD approved variance, the excavation was backfilled to approximately 6 feet bgs with non-contaminated caliche containing chloride less than 600 mg/Kg. The 20-mil polyethylene synthetic liner was installed above the caliche at approximately 6 feet bgs, and excavation backfilling was completed to surface with clean topsoil containing chloride less than 600 mg/Kg. Table 1 presents the Apache laboratory analytical data summary. Appendix D presents a drawing showing the Apache soil sample locations. Appendix E presents the Apache soil sample laboratory reports.

3.0 GROUNDWATER INVESTIGATION AND MONITORING

3.1 Groundwater Investigation

On March 11, 2020, Scarborough Drilling, Inc. (SDI) under LAI supervision installed two (2) monitor wells (TMW-1 and TMW-2) utilizing an air rotary rig. The wells were drilled to depths of approximately 30 feet bgs. Monitoring well TMW-1 was installed near the east side of the excavation. Monitoring well TMW-2 was installed southeast (down gradient) approximately 150 feet from the excavation. The monitoring wells were completed with 2-inch schedule 40 threaded casing and 20 feet of 0.010-inch factory slotted screen that was positioned above and below the groundwater level gauged at the time of drilling. Graded silica sand was placed around the screen to about 2 feet above the screen. The annular space above the

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sand was filled with bentonite chips to about 1-foot bgs. The wells were logged according to the Unified Soil Classification System (ASTM D 2487 – 06) and are secured with locking steel protectors anchored in concrete. West Company, a State of New Mexico licensed professional land surveyor (License Number 23263) surveyed the monitoring wells for position and elevation including top of casing and natural ground surface. Figure 2 presents the monitoring well locations. Appendix F presents the boring logs.

3.2 Groundwater Monitoring

3.2.1 Depth to Groundwater and Groundwater Flow

During eight (8) consecutive quarters between March 1, 2020, and December 21, 2021, LAI personnel gauged depth to groundwater in monitoring wells TMW-1, TMW-2, and the background well (MW-2) located about 300 feet northwest and hydraulically up gradient from the release. Monitoring well MW-2 is located northwest of NMGSAU #1631.

On December 21, 2021, depth to groundwater ranged from 10.88 feet bgs at monitoring well MW-2 (up gradient) to 23.54 feet bgs at TMW-2 (down gradient). The groundwater elevation ranged from 3,555.76 feet above mean sea level (AMSL) at MW-2 (up gradient) to 3,537.98 feet AMSL at TMW-2 (down gradient). The groundwater flow direction was from northwest to southeast at a gradient of approximately 0.26 feet per foot. The groundwater elevation and flow direction remained consistent through eight (8) consecutive quarters. Table 2 presents the monitoring well completion details and depth to groundwater readings. Figure 3 presents the groundwater potentiometric surface map for December 21, 2021.

3.2.2 Groundwater Samples

Groundwater samples were collected using the low stress or low flow method according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low rate until environmental parameters stabilize.

Groundwater samples were collected from the discharge of the dedicated disposable Tygon[®] tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and laboratory grade detergent (Alconox[®]) and rinsed with distilled water. Quality assurance and quality control (duplicate) samples were collected from monitoring wells MW-2 and TMW-2. The samples were carefully transferred to laboratory containers that were labeled, packed in an ice filled chest and delivered under chain of custody control to Xenco-Eurofins Laboratories (Eurofins), a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Midland, Texas. Xenco analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8021B and chloride by EPA Method 300, respectively. Table 3 presents the laboratory analytical data summary. Appendix G presents the groundwater sample laboratory reports.

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3.2.2.1 Organic Analysis

All BTEX values were below the SW-846 – 8021B analytical method reporting limits (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards during the eight (8) consecutive quarters. No data quality exceptions were noted in the Xenco case narratives.

3.2.2.2 Inorganic Analysis

Chloride was reported above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in the following samples during 2020:

Sample ID	March 12, 2020	July 20, 2020	October 1, 2020	December 8, 2020
	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TMW-1	360	432	452	449
TMW-2	423	664	591	473

Figure 4a through 4d present isopleth drawings for chloride concentrations in groundwater samples on March 12, 2020, July 20, 2020, October 1, 2020, and December 8, 2020, respectively.

Chloride was reported above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in the following samples during 2021:

Sample ID	March 10, 2021	June 11, 2021	October 12, 2021	December 21, 2021
	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TMW-1	418	361	291	406
TMW-2	428	402	325	388

Figure 5a through 5d present isopleth drawings for chloride concentrations in groundwater samples on March 10, 2021, June 11, 2021, October 12, 2021, and December 21, 2020, respectively. Figure 6 presents a control chart for chloride concentrations in groundwater. Appendix H presents photographic documentation.

4.0 CONCLUSIONS

- Soil was excavated to approximately 12 feet bgs and disposed at Sundance Disposal, a NMOCD approved landfill located east of Eunice, New Mexico.
- Per the NMOCD approved variance the excavation was backfilled caliche to approximately 6 feet bgs where a 20-mil thickness polyethylene synthetic liner was placed in the bottom of the

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excavation with the remainder of the excavation above the liner backfilled with non-contaminated soil containing less than 600 mg/Kg chloride.

- Two (2) monitor wells (TMW-1 and TMW-2) were installed in air rotary drilled borings at approximately 30 feet bgs. Monitoring well TMW-1 was installed near the east side of the excavation. Monitoring well TMW-2 was installed southeast (down gradient) approximately 150 feet from the excavation.
- Groundwater samples were collected from an upgradient monitoring well (MW-2) and the down gradient wells (TMW-1 and TMW-2) during eight consecutive quarters between March 12, 2020, and December 21, 2021, and were analyzed for BTEX and chloride.
- BTEX values were below the RL and WQCC human health standard (0.01 mg/L) in all samples during the eight (8) consecutive quarters.
- Chloride concentrations from the down gradient wells (TMW-1 and TMW-2) exceeded the WQCC domestic water quality standard (250 mg/L) during the eight (8) consecutive quarters and ranged from 290 mg/L in TMW-1 on October 12, 2021, and 664 mg/L in TMW-2 on July 20, 2020.

5.0 CLOSURE REQUEST

Apache requests closure approval for the excavation and no further action for groundwater or groundwater monitoring. The monitoring wells will be plugged according to State of New Mexico Office of the State Engineer requirements.

Tables

Floor Samples

Map ID	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
W1	W1	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W2	W2	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W3	W3	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W4	W4	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W5	W5	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W6	W6	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W7	W7	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W8	W8	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W9	W9	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W10	W10	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W11	W11	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W12	W12	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W13	W13	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W14	W14	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W15	W15	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W16	W16	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W17	W17	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W18	W18	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W19	W19	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W20	W20	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W21	W21	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W22	W22	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W23	W23	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W24	W24	12'	352	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W25	W25	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W26	W26	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W27	W27	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W28	W28	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W29	W29	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W30	W30	12'	30	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W31	W31	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W32	W32	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W33	W33	12'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W34	W34	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W35	W35	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W36	W36	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results

W37	W37	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
W38	W38	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	10.1	On Lab Results

Wall Samples

Map ID	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
B1	B1	12'	176	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B2	B2	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B3	B3	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B4	B4	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B5	B5	12'	608	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B6	B6	12'	288	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B7	B7	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B8	B8	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B9	B9	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B10	B10	12'	688	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B11	B11	12'	976	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B12	B12	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B13	B13	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B14	B14	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B15	B15	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B16	B16	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B17	B17	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B18	B18	12'	272	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B19	B19	12'	928	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B20	B20	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B21	B21	12'	528	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B22	B22	12'	816	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B23	B23	12'	720	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B24	B24	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B25	B25	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B26	B26	12'	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B27	B27	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B28	B28	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B29	B29	12'	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	12	<10.0	On Lab Results
B30	B30	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B31	B31	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B32	B32	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B33	B33	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B34	B34	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B35	B35	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B36	B36	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results

B37	B37	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B38	B38	12'	144	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B39	B39	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B40	B40	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B41	B41	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B42	B42	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B43	B43	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B44	B44	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B45	B45	12'	1170	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B46	B46	12'	144	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B47	B47	12'	336	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B48	B48	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	222	34.5	On Lab Results
B49	B49	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B50	B50	12'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B51	B51	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	92.4	<10.0	On Lab Results
B52	B52	12'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B53	B53	12'	256	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	19.7	<10.0	On Lab Results
B54	B54	12'	416	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B55	B55	12'	720	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	119	<10.0	On Lab Results
B56	B56	12'	864	<0.050	<0.050	<0.050	0.221	0.221	21.5	395	45.3	On Lab Results
B57	B57	12'	1120	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B58	B58	12'	832	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	11.9	<10.0	On Lab Results
B59	B59	12'	1120	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	37.8	<10.0	On Lab Results
B60	B60	12'	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B61	B61	12'	144	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	74.9	<10.0	On Lab Results
B62	B62	12'	928	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	29.9	<10.0	On Lab Results
B63	B63	12'	816	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	136	16.6	On Lab Results
B64	B64	12'	1060	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	85.5	12	On Lab Results
B65	B65	12'	976	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	13.6	<10.0	On Lab Results
B66	B66	12'	1300	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B67	B67	12'	640	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B68	B68	12'	496	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B69	B69	12'	192	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B70	B70	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B71	B71	12'	464	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B72	B72	12'	496	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B73	B73	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B74	B74	12'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	14.1	<10.0	On Lab Results
B75	B75	12'	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B76	B76	12'	784	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	74.9	<10.0	On Lab Results
B77	B77	12'	1140	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	190	87.3	On Lab Results
B78	B78	12'	1090	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results

NMGSAU 2102

FIELD SAMPLING SHOWN IN RED WITH CHLORIDE FINDINGS ONLY

B79	B79	12'	688	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	12	<10.0	On Lab Results
B80	B80	12'	384	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B81	B81	12'	224	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B82	B82	12'	416	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B83	B83	12'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B84	B84	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B85	B85	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B86	B86	12'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	On Lab Results
B87	B87	12'	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	41.5	<10.0	On Lab Results

Table 2
Monitor Well Completion and Gauging Summary
Apache Corporation, NMGSAU 2102
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
MW-2	Unknown	62.91	60.03	2	3566.64	Unknown	2.88	3,569.52	03/12/2020	13.59	10.71	49.32	3,555.93
									07/20/2020	13.75	10.87	49.16	3,555.77
									10/01/2020	13.90	11.02	49.01	3,555.62
									12/08/2020	13.81	10.93	49.10	3,555.71
									03/10/2021	13.80	10.92	49.11	3,555.72
									06/11/2021	13.80	10.92	49.11	3,555.72
									10/12/2021	13.81	10.93	49.10	3,555.71
									12/21/2021	13.76	10.88	49.15	3,555.76
TMW-1	3/11/2020	36.23	33.33	2	3561.92	9.83 - 29.49	2.90	3,564.82	03/12/2020	24.37	21.47	11.86	3,540.45
									07/20/2020	24.95	22.05	11.28	3,539.87
									10/01/2020	24.90	22.00	11.33	3,539.92
									12/08/2020	24.65	21.75	11.58	3,540.17
									03/10/2021	24.60	21.70	11.63	3,540.22
									06/11/2021	24.80	21.9	11.43	3540.02
									10/12/2021	24.96	22.06	11.27	3539.86
									12/21/2021	24.64	21.74	11.59	3540.18
TWM-2	3/11/2020	37.07	34.03	2	3561.43	10.05 - 29.30	3.04	3,564.47	03/12/2020	26.38	23.34	10.69	3,538.09
									07/20/2020	26.70	23.66	10.37	3,537.77
									10/01/2020	26.70	23.66	10.37	3,537.77
									12/08/2020	26.51	23.47	10.56	3,537.96
									03/10/2021	26.40	23.36	10.67	3,538.07
									06/11/2021	26.57	23.53	10.50	3537.9
									10/12/2021	26.72	23.68	10.35	3537.75
									12/21/2021	26.49	23.45	10.58	3537.98

Notes: MW-2 is hydraulically upgradient. TMW-1 is near release source. TWM-2 is hydraulically down gradient.

bgs: below ground surface

TOC: top of casing

AMSL: elevation above mean sea level

Groundwater Sample Analytical Data Summary

Apache Corporation, NMGSAU 2102

Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
WQCC Standard:		*0.005	* 1	*0.7	*0.62	**250
MW-2	3/12/2020	<0.00100	<0.00100	<0.00100	<0.00300	230
	7/20/2020	<0.00200	<0.00200	<0.00200	<0.00600	231
	10/1/2020	<0.00200	<0.00200	<0.00200	<0.00200	241
	12/8/2020	<0.00200	<0.00200	<0.00200	<0.00200	227
	3/10/2021	<0.00200	<0.00200	<0.00200	<0.00200	235
	6/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	212
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	207
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	222
TMW-1	3/12/2020	<0.00100	<0.00100	<0.00100	<0.00300	360
	7/20/2020	<0.00200	<0.00200	<0.00200	<0.00600	432
	10/1/2020	<0.00200	<0.00200	<0.00200	<0.00200	452
	12/8/2020	<0.00200	<0.00200	<0.00200	<0.00200	449
	3/10/2021	<0.00200	<0.00200	<0.00200	<0.00200	418
	6/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	361
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	291
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	406
TMW-2	3/12/2020	<0.00100	<0.00100	<0.00100	<0.00300	423
	7/20/2020	<0.00200	<0.00200	<0.00200	<0.00600	664
	10/1/2020	<0.00200	<0.00200	<0.00200	<0.00200	591
	12/8/2020	<0.00200	<0.00200	<0.00200	<0.00200	473
	3/10/2021	<0.00200	<0.00200	<0.00200	<0.00200	428
	6/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	402
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	325
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	388
(QA/QC (Duplicate) Samples)						
MW-2	3/12/2020	<0.00100	<0.00100	<0.00100	<0.00300	223
	7/20/2020	<0.00200	<0.00200	<0.00200	<0.00600	242
	10/1/2020	<0.00200	<0.00200	<0.00200	<0.00200	245
	12/8/2020	<0.00200	<0.00200	<0.00200	<0.00200	226
TMW-2	3/10/2021	<0.00200	<0.00200	<0.00200	<0.00200	237
	6/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	305
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	226

Notes:

analysis performed by Xenco Laboratories, Midland, Texas by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride)

All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)

< values - denotes concentration is less than method reporting limit (RL).

* - NMWQCC human health standard

** - NMWQCC domestic water quality standard

BGS - below ground surface

Figures

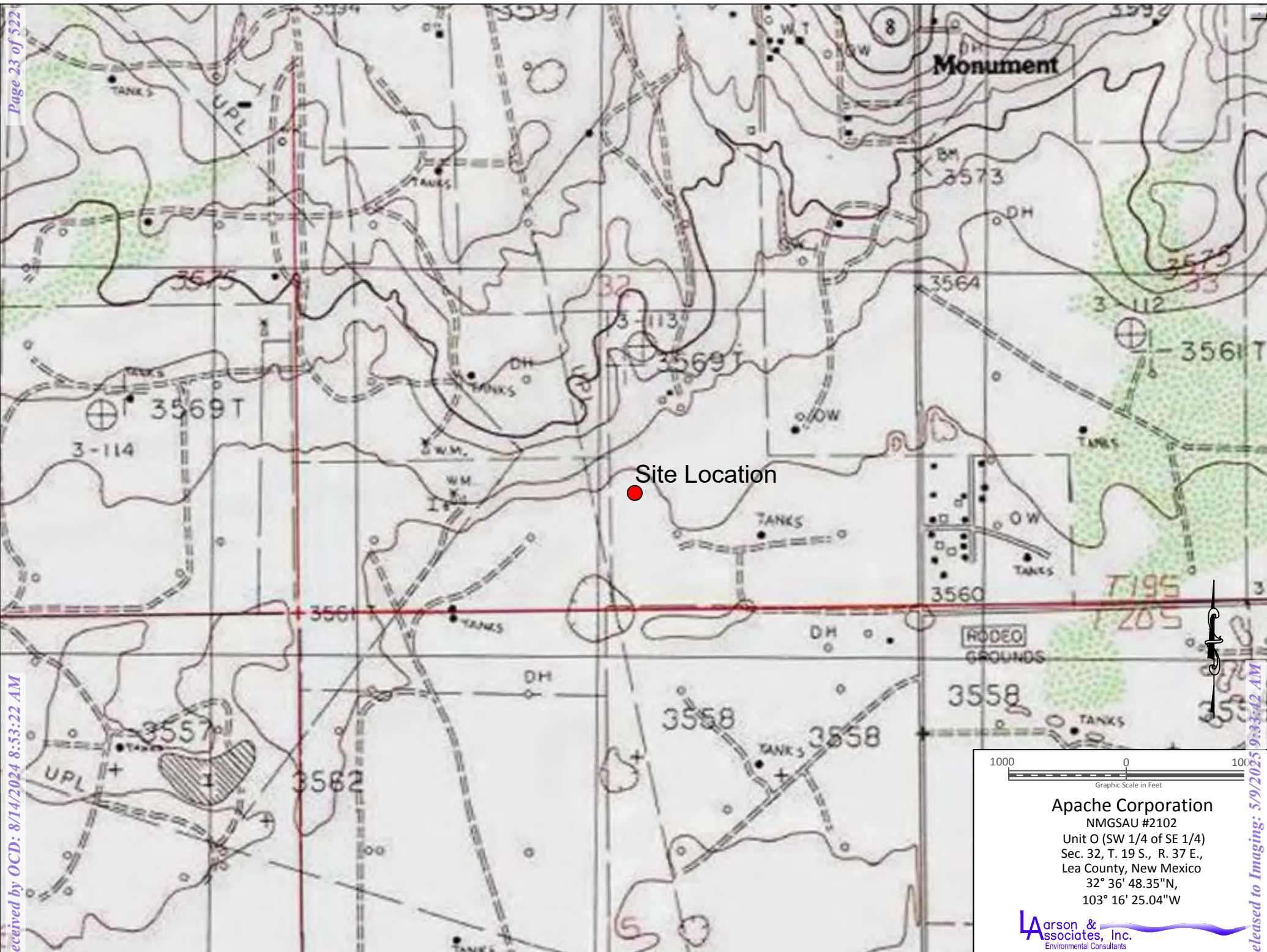


Figure 1 - Topographic Map

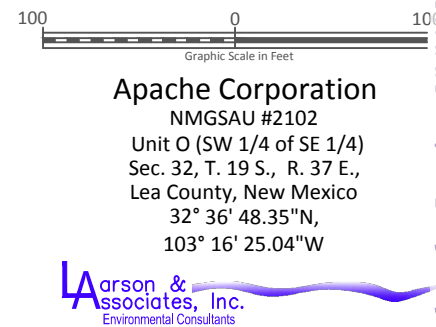


Figure 2 - Aerial Map

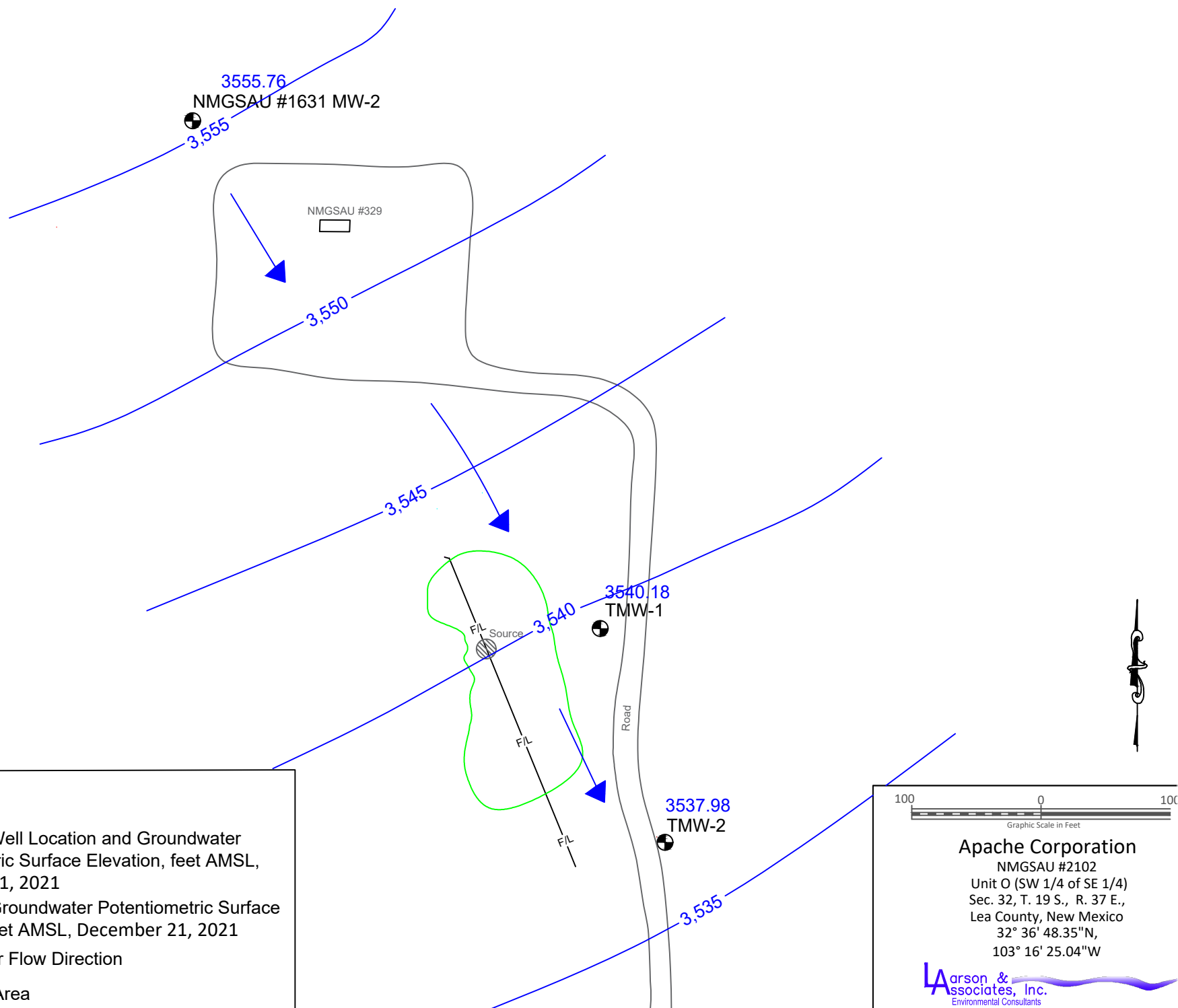
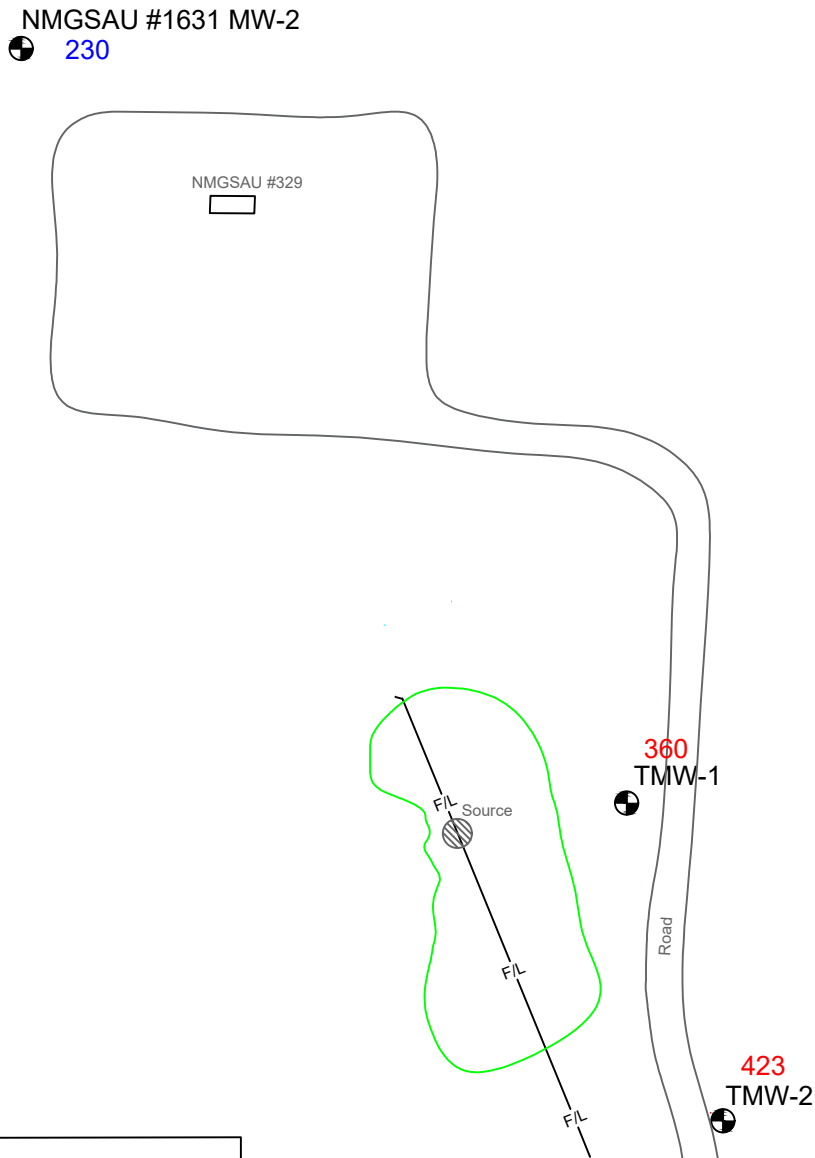
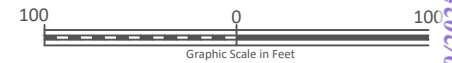


Figure 3 - Groundwater Potentiometric Surface Map, December 21, 2021



Legend

- TMW-2
- Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, March 12, 2020
- Red - Exceeds NMWQCC Domestic Water Ruality Standard: 250 mg/L



Apache Corporation
NMGSAU #2102
Unit O (SW 1/4 of SE 1/4)
Sec. 32, T. 19 S., R. 37 E.,
Lea County, New Mexico
32° 36' 48.35"N,
103° 16' 25.04"W

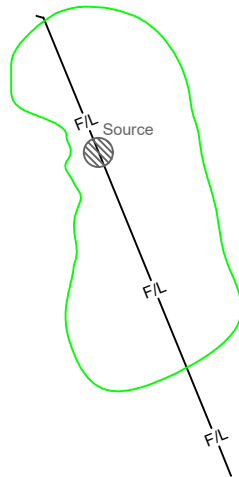
Larson & Associates, Inc.
Environmental Consultants



Figure 4a - Chloride Concentration in Groundwater Map, March 12, 2020

NMGS AU #1631 MW-2
● 231

NMGS AU #329



432
TMW-1

664
TMW-2

Legend

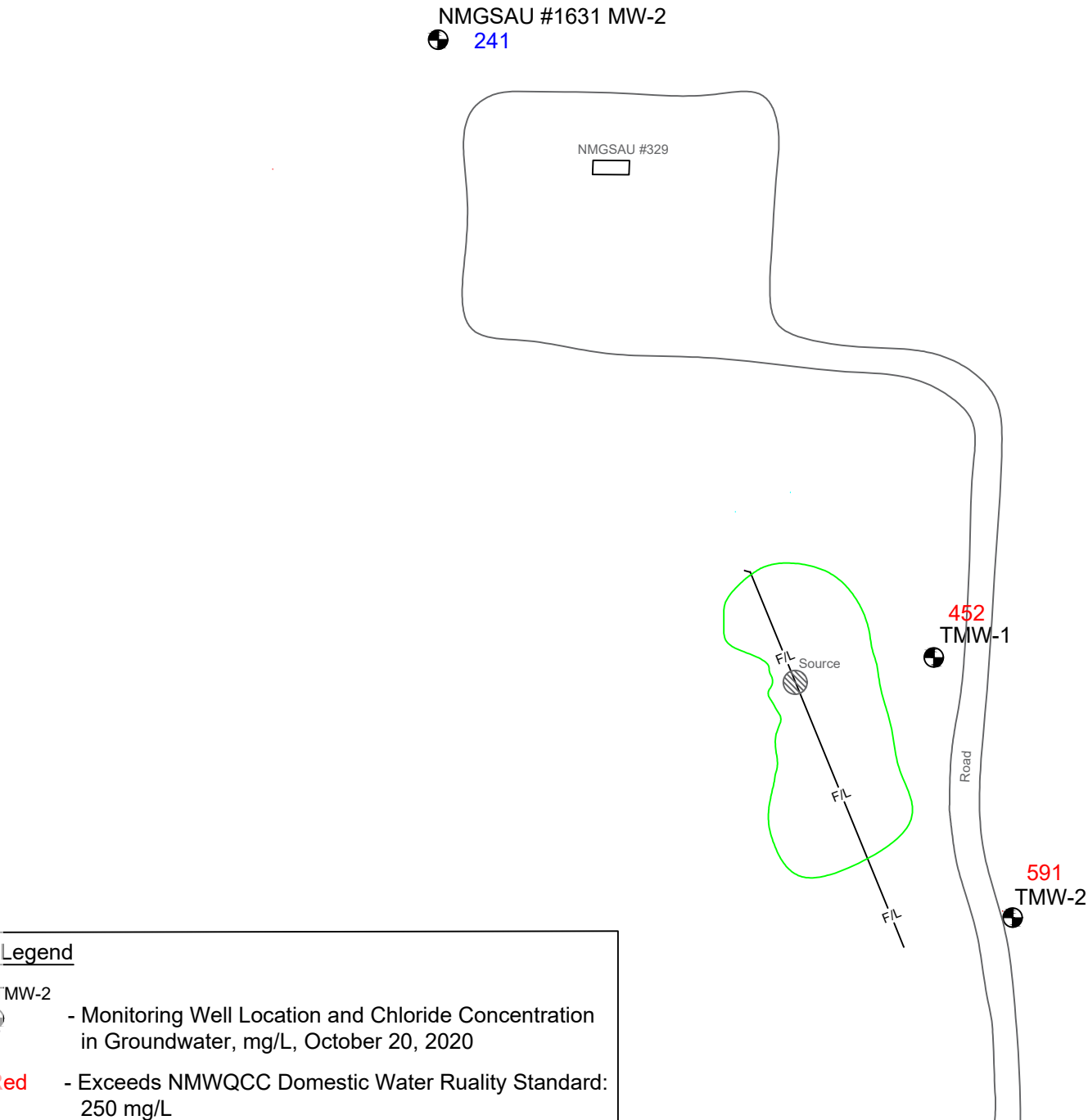
- TMW-2
- Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, July 20, 2020
- (Red)
- Exceeds NMWQCC Domestic Water Ruality Standard: 250 mg/L



Apache Corporation
NMGS AU #2102
Unit O (SW 1/4 of SE 1/4)
Sec. 32, T. 19 S., R. 37 E.,
Lea County, New Mexico
32° 36' 48.35"N,
103° 16' 25.04"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4b - Chloride Concentration in Groundwater Map, July 20, 2020



100 0 100
Graphic Scale in Feet

Apache Corporation
NMGS AU #2102
Unit O (SW 1/4 of SE 1/4)
Sec. 32, T. 19 S., R. 37 E.,
Lea County, New Mexico
32° 36' 48.35"N,
103° 16' 25.04"W

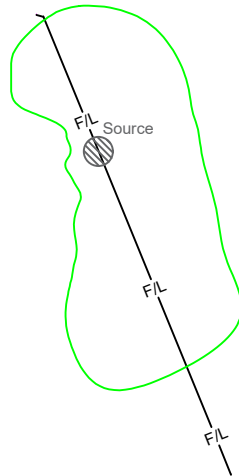
Larson & Associates, Inc.
Environmental Consultants



Figure 4c - Chloride Concentration in Groundwater Map, October 1, 2020

NMGS AU #1631 MW-2
● 227

NMGS AU #329



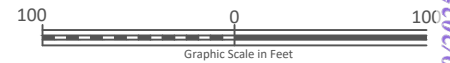
449
TMW-1
●

Road

473
TMW-2
●

Legend

- TMW-2
- Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, December 5, 2020
- - Exceeds NMWQCC Domestic Water Ruality Standard: 250 mg/L



Apache Corporation
NMGS AU #2102
Unit O (SW 1/4 of SE 1/4)
Sec. 32, T. 19 S., R. 37 E.,
Lea County, New Mexico
32° 36' 48.35"N,
103° 16' 25.04"W

Larson & Associates, Inc.
Environmental Consultants



Figure 4d - Chloride Concentration in Groundwater Map, December 8, 2020

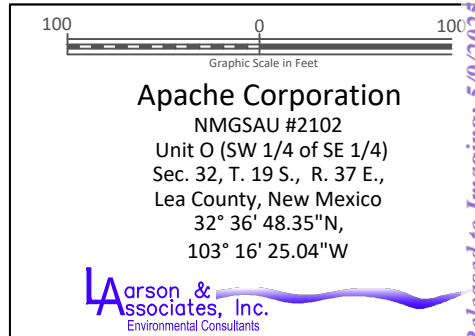
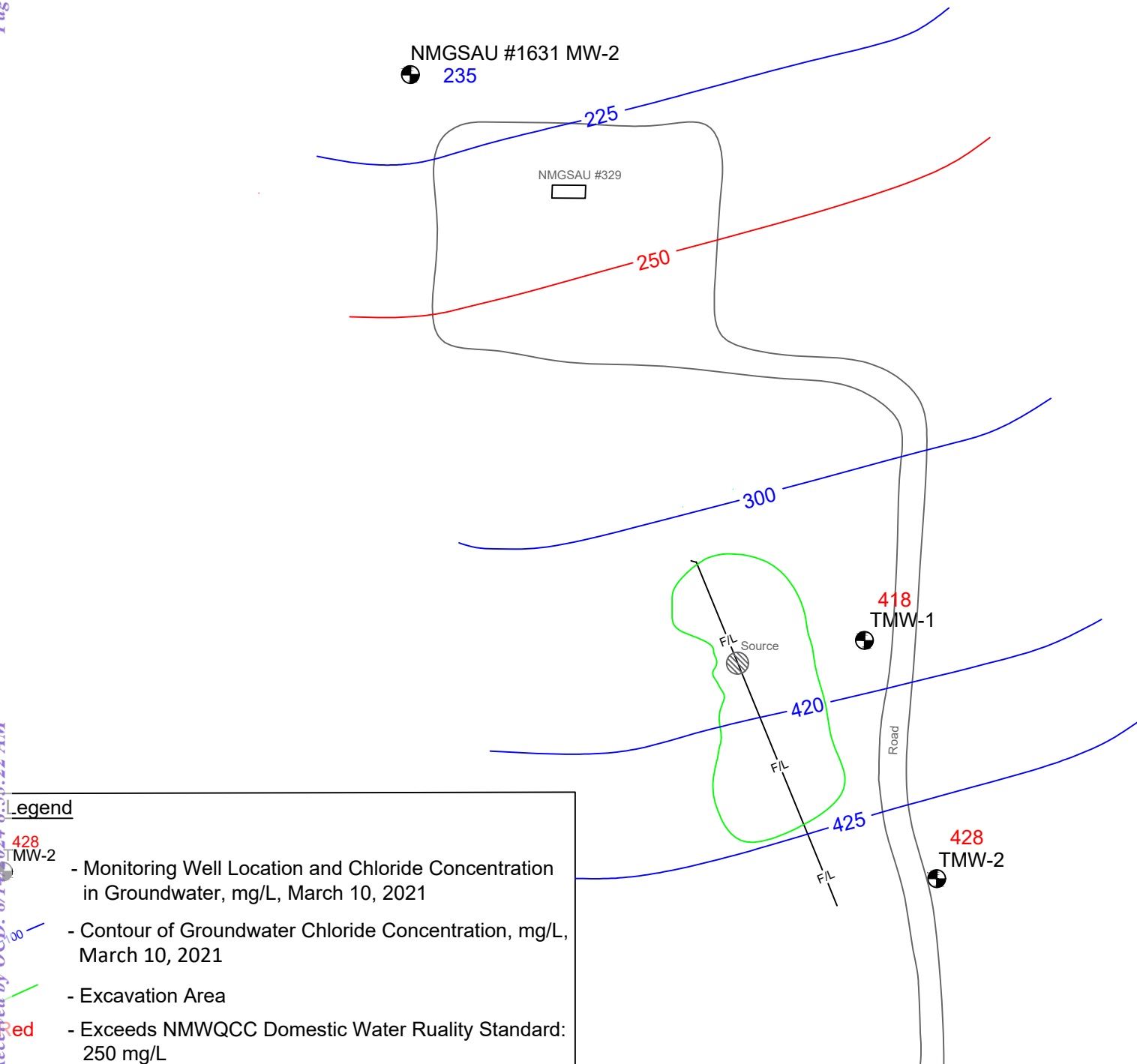
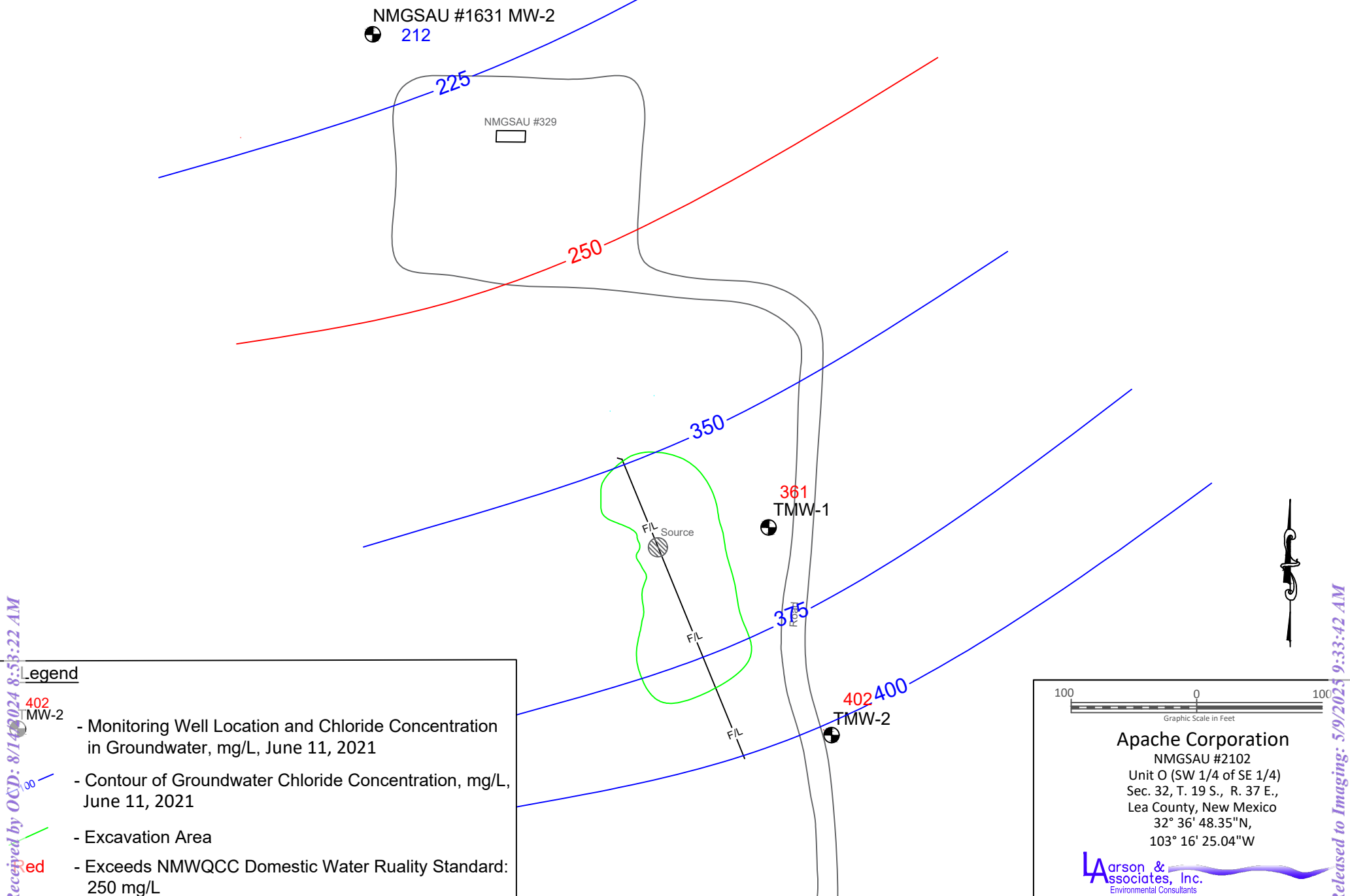


Figure 5a - Chloride Concentration in Groundwater Map, March 10, 2021



Legend

- 402 MW-2 - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, June 11, 2021
- — Contour of Groundwater Chloride Concentration, mg/L, June 11, 2021
- — Excavation Area
- — Exceeds NMWQCC Domestic Water Ruality Standard: 250 mg/L

100 0 100
Graphic Scale in Feet

Apache Corporation
 NMGSAU #2102
 Unit O (SW 1/4 of SE 1/4)
 Sec. 32, T. 19 S., R. 37 E.,
 Lea County, New Mexico
 32° 36' 48.35"N,
 103° 16' 25.04"W

Larson & Associates, Inc.
 Environmental Consultants

Figure 5b - Chloride Concentration in Groundwater Map, June 11, 2021

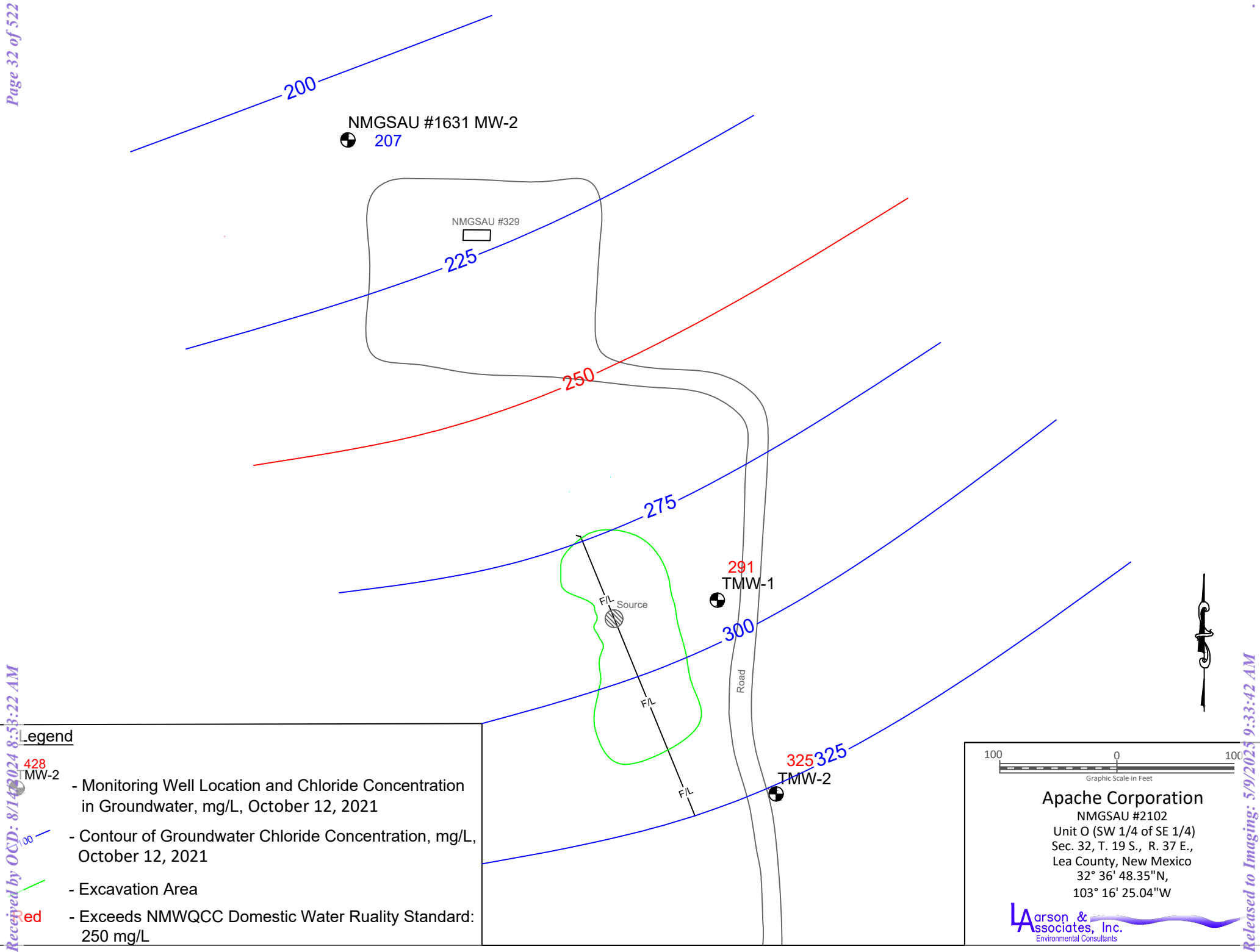


Figure 5c - Chloride Concentration in Groundwater Map, October 12, 2021

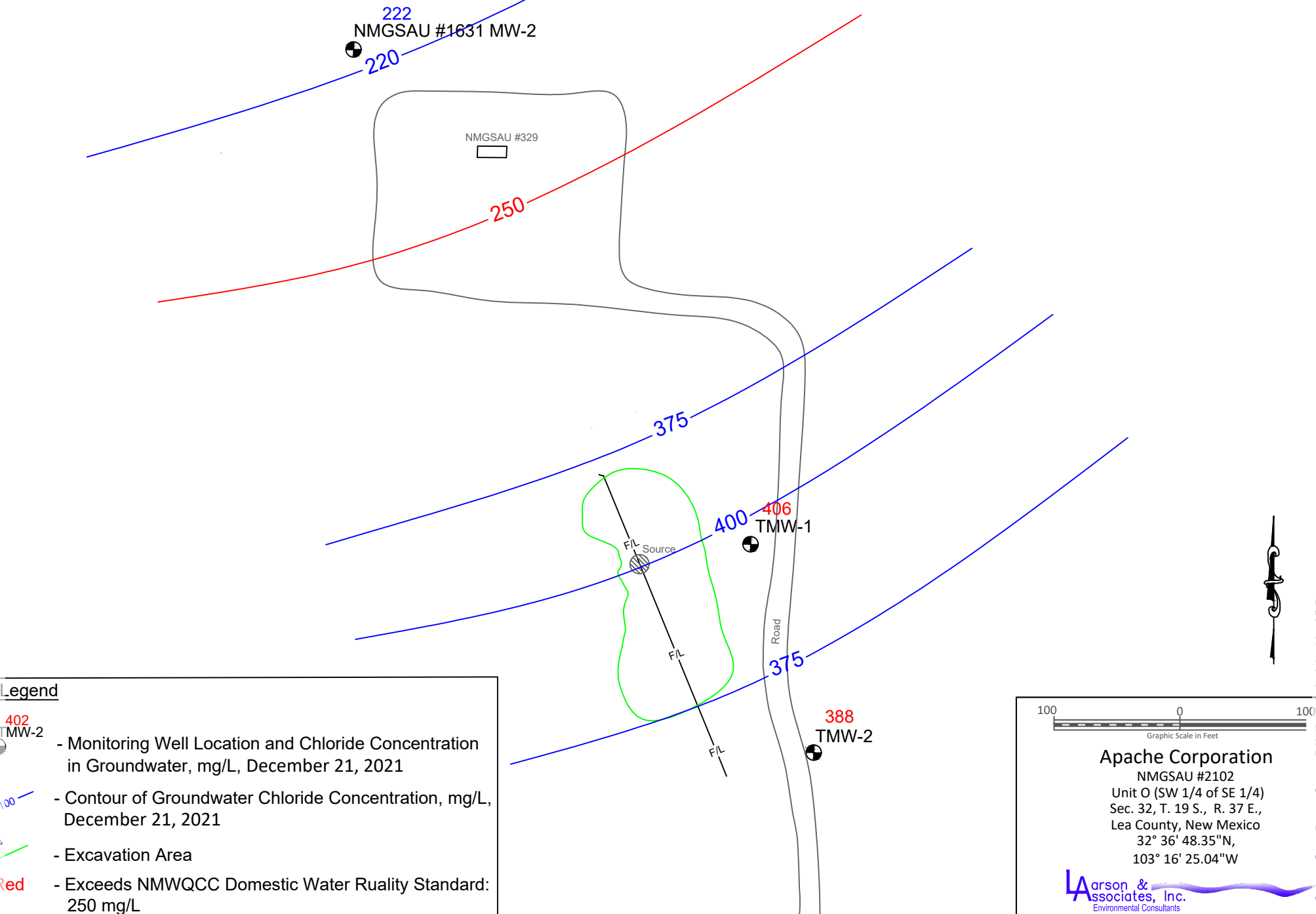


Figure 5d - Chloride Concentration in Groundwater Map, December 21, 2021

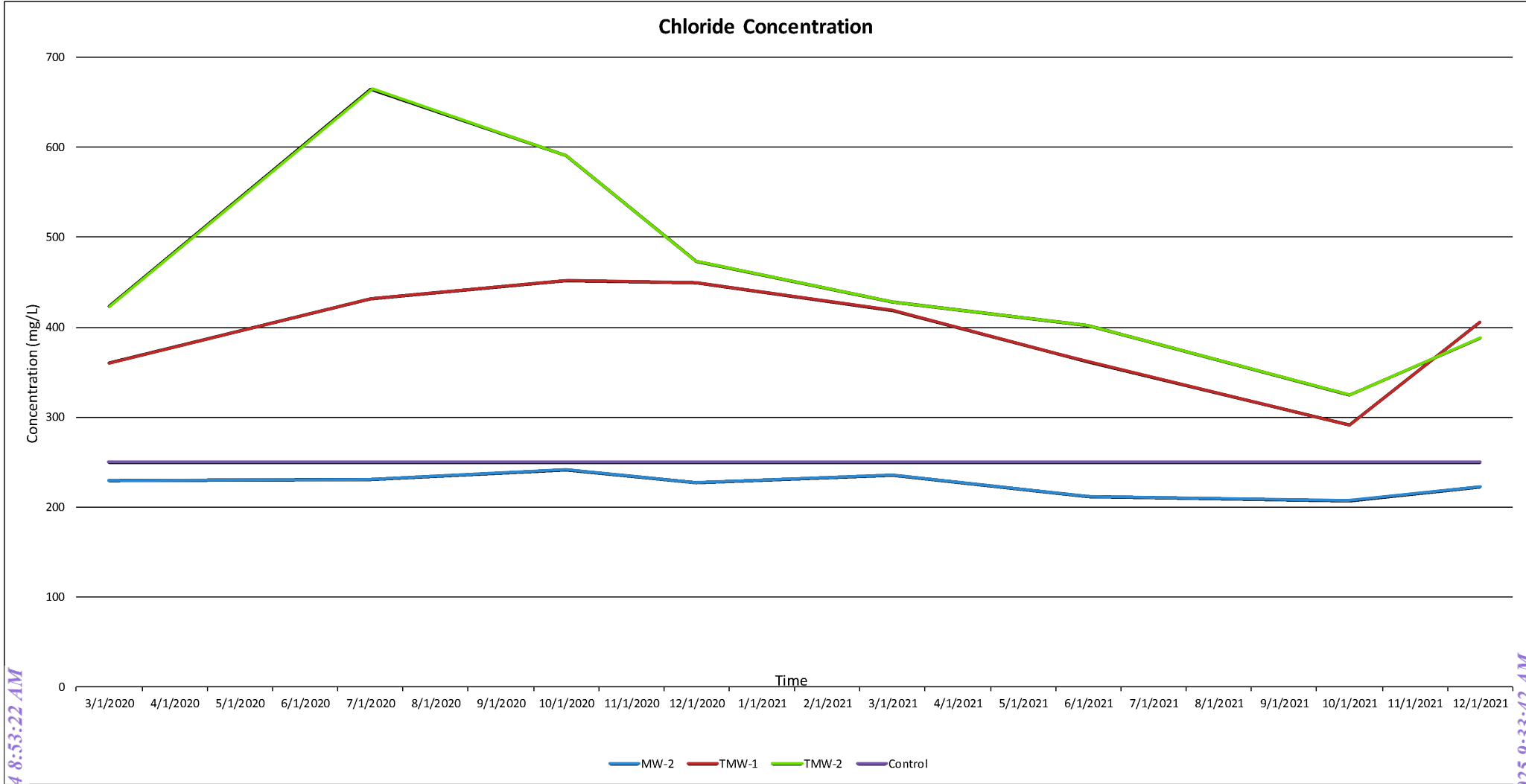


Figure 6 - Chloride Concentration Control Chart

Apache Corporation
NMGSAU #2102
Unit O (SW 1/4 of SE 1/4)
Sec. 32, T. 19 S., R. 37 E.,
Lea County, New Mexico

Larson & Associates, Inc.
Environmental Consultants

Appendix A

Initial C-141

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM1926352539
District RP	1RP-5677
Facility ID	
Application ID	pRM1926352024

Release Notification

Responsible Party

Responsible Party	Apache Corporation	OGRID	873
Contact Name	Bruce Baker	Contact Telephone	432-631-6982
Contact email	larry.baker@apachecorp.com	Incident # (assigned by OCD)	
Contact mailing address	2350 W. Marland BLVD Hobbs, NM 88240		

Location of Release Source

Latitude 32.61233 Longitude -103.27262
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	North Monument G/SA Unit # 002	Site Type	Oil Well
Date Release Discovered	8/16/19	API# (if applicable)	30-025-05919

Unit Letter	Section	Township	Range	County
O	32	19S	37E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Johnston)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) Unknown	Volume Recovered (bbls) 2.5 barrels
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) Unknown	Volume Recovered (bbls) 2.5 barrels
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Buried flanged 3 inch steel pipe failed due to internal corrosion. The release occurred on the flowline in the pasture so the GPS coordinates for the actual release will not match the actual well location.**

State of New Mexico
Oil Conservation Division

Incident ID	NRM1926352539
District RP	1RP-5677
Facility ID	
Application ID	pRM1926352024

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release is greater than 25 barrels
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Via email on 8/16/2019 given to NMOCD Rep. Dylan Rose-Coss by Jeff Broom, Environmental Tech, Apache Corporation	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Bruce Baker</u>	Title: <u>Environmental Tech. SR.</u>
Signature: <u>Bruce Baker</u>	Date: <u>8/29/19</u>
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>
OCD Only Received by: <u>Ramona Marcus</u> Date: <u>09/20/2019</u>	

Appendix B
Variance Request

Hamlet, Robert, EMNRD

From: Hamlet, Robert, EMNRD
Sent: Wednesday, October 16, 2019 10:30 AM
To: 'Baker, Larry'
Cc: Bratcher, Mike, EMNRD; Venegas, Victoria, EMNRD; Billings, Bradford, EMNRD; Griswold, Jim, EMNRD
Subject: Variance Conditional Approval - Apache - North Monument GSA Unit #003 - (1RP-5677) 9-16-2019
Attachments: Variance Conditional Approval - Apache - North Monument GSA Unit #003 - (1RP-5677) 10.16.19.pdf

Larry,

We have received your variance request for **1RP-5677 North Monument GSA Unit #003**, thank you. This variance request is conditionally approved.

Your proposal calls for installation of two monitoring wells, with well TMW-1 installed as close as possible to the source of the release and TMW-2 installed hydraulically down gradient approximately 150 feet southeast of the excavation to monitor groundwater quality. Additionally, the OCD would like Apache to drill a monitoring well up gradient to be used for collecting back-ground groundwater samples.

Please keep us informed on your progress.

Please let me know if you have any further questions.

Regards,

Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 748-1283
Robert.Hamlet@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Appendix C
Karst Risk Potential Map



Browser

★ Favorites

📁 Spatial Bookmarks

🏠 Project Home

🏠 Home

📁 C:\

📁 D:\

📁 L:\

📁 Z:\

📁 GeoPackage

📁 SpatiaLite

📁 PostgreSQL

📁 MSSQL

📁 Oracle

📁 DB2

🌐 WMS/WMTS

🌐 XYZ Tiles

🌐 WCS

🌐 WFS / OGC API - Features

🌐 OWS

🌐 ArcGisMapServer

🌐 ArcGisFeatureServer

🌐 GeoNode

Layers

✓ Added geom info

✓ carlsbad_west

✓ Karst_or_No_Karst

- ✓ High
- ✓ Low
- ✓ Medium

✓ Bing Satellite



Appendix D

Apache Confirmation Soil Sample Location Map

Appendix E

Apache Confirmation Soil Sample Laboratory Reports



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

September 17, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/11/19 15:35.

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.

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

Page 46 of 522
Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 3 32.6124552-103.2730152 (H903141-01)

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEx	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 79.2 % 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	80.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Released to Imaging: 5/9/2025 9:33:42 AM



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: 09/11/2019
Reported: 09/17/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 4 32.6123818-103.27330568 (H903141-02)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 79.2 % 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	48.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 85.0 % 41-142

Surrogate: 1-Chlorooctadecane 95.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 5 32.6123114-103.2730431 (H903141-03)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 77.2 % 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	48.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 84.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.1 % 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:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 6 32.6123253-103.2730421 (H903141-04)

BTEX 8021B		mg/kg		Analyzed By: BF				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 151 % 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	32.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 37.6-147

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Celestine D. Keene

Celestine 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:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 7 32.6122662-103.2729995 (H903141-05)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 75.4 % 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	128	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 83.4 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 37.6-147

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 15 32.6122705-103.2728741 (H903141-06)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 78.5 % 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	144	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 89.0 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 37.6-147

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Celestine D. Keene
Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/11/2019	Sampling Date:	09/11/2019
Reported:	09/17/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 10 32.6121547-103.2729090 (H903141-07)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 78.3 % 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	128	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 93.3 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

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

Company Name: <u>Apple</u> Project Manager: <u>Jeffrey Brown</u>		P.O. #:	
Address: <u>City: Holden</u> <u>State: MA</u> <u>Zip: 01840</u>		Company: Attn: Address: City: State: Zip:	
Phone #: Fax #:		Project Name:	
Project #:		Project Location: <u>on 65th Ave</u>	
Project Name:		Project Owner:	
Project Location:		State: Zip:	
Sample Name: <u>See Quota</u>		Phone #:	
FOR LAB USE ONLY		Fax #:	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						DATE	TIME	EXT	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER	ACID/BASE					
H903141	1	32 G12 Q55-2	1							9/11	12:09			
	2	32 G12 Q55-2	1								12:11			
	3	32 G12 Q55-2	1								12:13			
	4	32 G12 Q55-2	1								12:15			
	5	32 G12 Q55-2	1								12:17			
	6	32 G12 Q55-2	1								12:18			
	7	32 G12 Q55-2	1								12:19			
	8	32 G12 Q55-2	1								12:20			
	9	32 G12 Q55-2	1								12:21			
	10	32 G12 Q55-2	1								12:22			

Reinquinished By: <u>[Signature]</u> Date: <u>9/11/19</u> Time: <u>8:35</u>	Received By: <u>[Signature]</u> Date: <u>9/11/19</u> Time: <u>8:35</u>
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Delivered By: (Circle One) <u>2.22</u> <u>#47</u> Sample Condition: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Cool <input type="checkbox"/> No <input type="checkbox"/> Yes	CHECKED BY: <u>[Signature]</u> REMARKS: <u>E-Mob 1</u> <u>Resu 14s</u>
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September 18, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/13/19 7:30.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM

Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received: 09/13/2019
Reported: 09/18/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/12/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Mike Snyder

Sample ID: B 17 @ 12' 32.6122239-103.2730310 (H903162-01)

BTEX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.6 % 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	160	16.0	09/16/2019	ND	432	108	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 84.7 % 41-142

Surrogate: 1-Chlorooctadecane 91.5 % 37.6-147

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Analytical Results For:

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

Received:	09/13/2019	Sampling Date:	09/12/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 20 @ 12' 32.6121242-103.2729113 (H903162-02)

BTEX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 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	112	16.0	09/16/2019	ND	432	108	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 88.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.9 % 37.6-147

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Received by OCD: 8/14/2024 8:53:22 AM

Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received:	09/13/2019	Sampling Date:	09/12/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 15 @ 12' 32.6123148-103.2728449 (H903162-03)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.3 % 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	160	16.0	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Ceiley D. Keene

Ceiley D. Keene, Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM

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Analytical Results For:

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

Received:	09/13/2019	Sampling Date:	09/12/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 16 @ 12' 32.6123332-103.2728691 (H903162-04)

BTX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.8 % 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	112	16.0	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 86.0 % 41-142

Surrogate: 1-Chlorooctadecane 92.6 % 37.6-147

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Coley D. Keene

Coley 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: 09/13/2019
Reported: 09/18/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/12/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Mike Snyder

Sample ID: W 9 32.6122163-103.2729334 (H903162-05)

BTEX 80218

mg/kg

Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC	96.4 %	73.3-129
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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	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane	94.6 %	41-142
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Surrogate: 1-Chlorooctadecane	103 %	37.6-147
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Received by OCD: 8/14/2024 8:53:22 AM

Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received:	09/13/2019	Sampling Date:	09/12/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: W 8 32.6122163-103.2729334 (H903162-06)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 76.3 % 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	160	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received: 09/13/2019
Reported: 09/18/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/12/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Mike Snyder

Sample ID: B 19 32.6122829-103.2728600 (H903162-07)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 78.8 % 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	928	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 78.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.9 % 37.6-147

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Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received: 09/13/2019
Reported: 09/18/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/12/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Mike Snyder

Sample ID: B 18 32.6122566-103.2728781 (H903162-08)

BTX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 76.6 % 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	272	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.4 % 37.6-147

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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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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

Company Name: <u>Harsh</u>		P.O. #:		BILL TO		ANALYSIS REQUEST										
Project Manager: <u>William Brewer</u>		Company:														
Address:		Attn:														
City: <u>Hobbs</u>		Address:														
State: <u>NM</u> Zip: <u>88240</u>		City:														
Phone #:		State:														
Project #:		Zip:														
Project Name:		Phone #:														
Project Location: <u>426 S. 4th St. #2119</u>		Fax #:														
Sampler Name: <u>Chris Curran</u>																
FOR LAB USE ONLY																
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	(CE) COOL	OTHER	DATE	TIME	EXL. TPH	BTEX
<u>14003162</u>	<u>B13 0.10' 32.602339</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>8:08</u>	<u>01</u>	<u>1</u>
	<u>-103.2730310</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>10:54</u>	<u>1</u>	<u>1</u>
	<u>3 BAO 0.12' 32.6021042</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>12:10</u>	<u>1</u>	<u>1</u>
	<u>-103.2729113</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>13:14</u>	<u>1</u>	<u>1</u>
	<u>3 B15 0.12' 32.6023148</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>
	<u>-103.2728449</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>
	<u>4 B16 0.12' 32.6023332</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>
	<u>-103.2728441</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>
	<u>5 B19 32.6123163</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>
	<u>-103.2729334</u>	<input checked="" type="checkbox"/>	<u>1</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9/12/08</u>	<u>1:50</u>	<u>1</u>	<u>1</u>

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Relinquished By: Chris Curran Date: 9/12/08 Time: 1:50

Received By: Mike Smith Date: 9/12/08 Time: 1:50

Delivered By: (Circle One) 4.6°C Sample Condition 4.6°C CHECKED BY: 4.6°C

Sampler - UPS - Bus - Other: Counted 50°C Cool ☒ Intact ☒ Yes ☒ No ☒ No ☒ No ☒ No ☒ No

Phone Result: ☒ Yes ☒ No ☒ Add'l Phone #: 4.6°C

Fax Result: ☒ Yes ☒ No ☒ Add'l Fax #: 4.6°C

REMARKS: 4.6°C

Curran/Results



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]



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September 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/16/19 11:40.

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.

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



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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 24 @ 12' 32.6124803-103.2728909 (H903176-01)

BTX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	QR-03
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	32.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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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: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/13/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 1 32.6124824-103.2729247 (H903176-02)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 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	80.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 92.0 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/13/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 2 32.6124668-103.2729945 (H903176-03)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 94.6 % 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	48.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 94.3 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/13/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 11 32.6125023-103.2728862 (H903176-04)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	64.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 81.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.3 % 37.6-147

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/13/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 25 @ 12' 32.6125097-103.2729076 (H903176-05)

BTX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 94.8 % 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	96.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 96.0 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/13/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 26 @ 12' 32.6123182-103.2727883 (H903176-06)

BTEX 80218		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.8 % 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	160	16.0	09/17/2019	ND	432	108	400	0.00	QR-03

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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 27 @ 12' 32.6124058-103.2728697 (H903176-07)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.2 % 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	48.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 88.9 % 41-142

Surrogate: 1-Chlorooctadecane 99.5 % 37.6-147

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/13/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W 12 32.6125323-103.2728815 (H903176-08)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.5 % 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	48.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 87.2 % 41-142

Surrogate: 1-Chlorooctadecane 96.4 % 37.6-147

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Celely D. Keene

Celely D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/13/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 28 @ 12' 32.6123391-103.2728375 (H903176-09)

BTEX 8021B

mg/kg

Analyzed By: CK

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC	95.6 %	73.3-129
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Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane	84.8 %	41-142
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Surrogate: 1-Chlorooctadecane	96.4 %	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
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	09/16/2019	Sampling Date:	09/13/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 29 @ 12' 32.6122533-103.2727678 (H903176-10)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 95.0 % 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	240	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	12.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 83.9 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Adorix</u>		P.O. #:		BILL TO												ANALYSIS REQUEST												
Project Manager: <u>Bill Keon</u>		Company:																										
Address:		City:																										
City: <u>Hobbs</u>		State: <u>NM</u>		Zip: <u>88240</u>																								
Phone #:		Fax #:		Address:																								
Project #:		Project Owner:		City:																								
Project Name:		State:		Zip:																								
Project Location: <u>NMAHSAW #247</u>		Phone #:																										
Sample Name: <u>Sosa Quach</u>		Fax #:																										
FOR LAB USE ONLY																												
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV	SAMPLING	DATE	TIME																
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER																
<u>H903126</u>	<u>B24612' 32.6124803</u>	<u>C 1</u>	<u>1</u>										<u>9/13</u>	<u>9:20</u>	<u>1</u>	<u>1</u>	<u>1</u>											
	<u>-103.2723909</u>	<u>C 1</u>	<u>1</u>											<u>9:35</u>	<u>1</u>	<u>1</u>	<u>1</u>											
	<u>-103.2729247</u>	<u>C 1</u>	<u>1</u>											<u>9:37</u>	<u>1</u>	<u>1</u>	<u>1</u>											
	<u>32.6124668</u>	<u>C 1</u>	<u>1</u>																									
	<u>-103.2729945</u>	<u>C 1</u>	<u>1</u>																									
	<u>4111 32.6125023</u>	<u>C 1</u>	<u>1</u>												<u>10:15</u>	<u>1</u>	<u>1</u>	<u>1</u>										
	<u>-103.2728862</u>	<u>C 1</u>	<u>1</u>																									
	<u>5 B25012' 32.6125097</u>	<u>C 1</u>	<u>1</u>												<u>11:00</u>	<u>1</u>	<u>1</u>	<u>1</u>										
	<u>-103.2723026</u>	<u>C 1</u>	<u>1</u>																									

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Relinquished By: [Signature] Date: 9/14 Received By: [Signature] Date: 9/16-19

Time: 10:00 Time: 1:00

Delivered By: (Circle One) 3.76 [Signature] Sample Condition: Intact Checked By: [Signature]

Sampler - UPS - Bus - Other: Initiated 4.1.10 [Signature]

REMARKS: Phone Result: [] Yes [] No Add'l Phone #: []
Fax Result: [] Yes [] No Add'l Fax #: []



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Reckitt</u> Project Manager: <u>Jeffrey Brown</u> Address: City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u> Phone #: Fax #: Project #: Project Owner: Project Name: Project Location: <u>MUSALL 2114</u> Sampler Name: <u>see Quezacoatl</u>		BILL TO P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:		ANALYSIS REQUEST												
Lab I.D. Sample I.D.	(G)RAB OR (C)OMP # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER ACID/BASE (CE) COOL OTHER	MATRIX	PRESERV	SAMPLING	DATE TIME	EXT T PH BTEX										
H903716	6 B010 012 32.6033182 -103.2727583	C 1			9/13 11:45	✓										
7	827012 38.424058 -103.2728647	C 1			9/13 13:00	✓										
8	112 32.6125523 -103.2728815	C 1			9/13 15:45	✓										
9	B08 012 32.6123391 -103.2728375	C 1			9/13 16:13	✓										
16	B09 012 32.6123333 -103.27271678	C 1			9/13 17:05	✓										

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Relinquished By: <u>[Signature]</u> Refinquired By: <u>[Signature]</u> Delivered By: <u>[Signature]</u> Sampler - UPS - Bus - Other: <u>Consolidated 4.1.12</u>	Date: <u>9-11-19</u> Time: <u>11:40</u> Received By: <u>[Signature]</u> Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CHECKED BY: <u>[Signature]</u> (Initials) <u>70</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: REMARKS: <u>Envel Results</u>
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PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

September 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/16/19 11:40.

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.

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



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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 21 @ 12' 32.6121112-103.2729187 (H903177-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 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	528	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 85.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.6 % 37.6-147

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/14/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 22 @ 12' 32.6121214-103.2728724 (H903177-02)

BTEx 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEx	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.1 % 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	816	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 98.2 % 37.6-147

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Celestine D. Keene
Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 23 @ 12' 32.6121264-103.2728416 (H903177-03)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 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	720	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 99.2 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 30 @ 12' 32.6124509-103.2727966 (H903177-04)

BTX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 96.3 % 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	64.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 83.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/14/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 31 @ 12' 32.6124594-103.2727497 (H903177-05)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.2 % 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	64.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 85.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.8 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 32 @ 12' 32.6124605-103.2727383 (H903177-06)

BTEX 80218		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 94.6 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.4 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 33 @ 12' 32.6123673-103.2727364 (H903177-07)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.2 % 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	48.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 91.3 % 37.6-147

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* = Accredited Analyte

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/14/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 34 @ 12' 32.6124354-103.2727041 (H903177-08)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.7 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 92.0 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager

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Analytical Results For:

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

Received:	09/16/2019	Sampling Date:	09/14/2019
Reported:	09/20/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 35 @ 12' 32.6124687-103.2727859 (H903177-09)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEx	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 97.0 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 85.4 % 41-142

Surrogate: 1-Chlorooctadecane 91.8 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
Reported: 09/20/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/14/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 36 @ 12' 32.6123770-103.2727806 (H903177-10)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 95.0 % 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	48.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.8 % 41-142

Surrogate: 1-Chlorooctadecane 93.8 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 37 @ 12' 32.6124351-103.2727172 (H903177-11)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.05	103	2.00	4.77	
Toluene*	<0.050	0.050	09/19/2019	ND	1.97	98.3	2.00	0.984	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.88	94.2	2.00	8.89	QR-03
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.71	95.1	6.00	7.38	QR-03
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 104 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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Notes and Definitions

- 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.
- 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.
- 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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Apache		P.O. #:		BILL TO				ANALYSIS REQUEST			
Project Manager: Jeffrey Brown		Company:									
Address:		Attn:									
City: Hobbs		State: NM Zip: 88240		Address:							
Phone #:		Fax #:		City:		State:		Zip:			
Project #:		Project Owner:		Phone #:		Fax #:					
Project Name:		Project Location: Well Estate #8114		Phone #:		Fax #:					
Sample Name: dr. Currie		FOR LAB USE ONLY		DATE		TIME					
Lab I.D.		Sample I.D.		DATE		TIME					
H903177		B31012' 50.6121112		9/14		8:16					
		-103.2729187									
		B22012' 50.6121814		9/14		8:12					
		-103.2728724									
		B23012' 39.6121814		9/14		8:20					
		-103.2728416									
		B30012' 39.6121509		9/14		10:44					
		-103.2728796									
		B31012' 32.6121594		9/14		12:30					
		-103.2727049									

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Relinquished By: Jeff Currie	Date: 9/16	Received By: Jeff Brown	Date: 9/16/19
Relinquished By: Jeff Currie	Date: 9/16/19	Received By: Jeff Brown	Date: 9/16/19
Delivered By: (Circle One) 3.72	Time: 1:40	Sample Condition	CHECKED BY: Jeff Currie
Sampler - UPS - Bus - Other: Ported 4.12	Time: 4:12	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials: JE

REMARKS: **Good Results**



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Agrium</u>		P.O. #:	
Project Manager: <u>Debbie Brown</u>		Company:	
Address:		Attn:	
City: <u>Woburn</u>		Address:	
State: <u>MA</u> Zip: <u>01801</u>		City:	
Phone #:		State:	
Project #:		Zip:	
Project Name:		Phone #:	
Project Location: <u>410 GSHU #2119</u>		Fax #:	
Sample Name: <u>See Attached</u>		Matrix:	
FOR LAB USE ONLY		PRESERV.	
SAMPLING			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	CHL/COL	OTHER	DATE	TIME	CI	Ext	TPH	BTEX
<u>H903177</u>	<u>B32012' 32.612 412 465</u>	<u>C</u>	<u>1</u>			<u>✓</u>							<u>9/14</u>	<u>12:38</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
	<u>-103.2727583</u>																	
	<u>7 B33012' 32.612 3673</u>	<u>C</u>	<u>1</u>			<u>1</u>							<u>9/14</u>	<u>4:27pm</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
	<u>-103.2727364</u>																	
	<u>8 B3400' 32.612 4354</u>	<u>C</u>	<u>1</u>			<u>1</u>							<u>9/14</u>	<u>4:24pm</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
	<u>-103.2727041</u>																	
	<u>9 B35012' 32.612 4157</u>	<u>C</u>	<u>1</u>			<u>1</u>							<u>9/14</u>	<u>7:30</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
	<u>-103.2727859</u>																	
	<u>10 B36012' 32.612 3770</u>	<u>C</u>	<u>1</u>			<u>1</u>							<u>9/14</u>	<u>7:36</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
	<u>-103.2727806</u>																	

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Relinquished By: _____ Date: 9/16 Received By: John R. Brown

Relinquished By: _____ Date: 9/16/19 Received By: _____

Delivered By: (Circle One) 3.72 Sample Condition: Intact CHECKED BY: _____

Sampler - UPS - Bus - Other: Contracted 4.12 Yes ☒ No ☐ ND ☐

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

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

REMARKS: _____



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

Page 96 of 522



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

September 23, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 9:15.

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.

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

Page 98 of 522
Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 38 @ 12' 32.6123281-103.2727551 (H903211-01)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 86.5 % 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	144	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Coley D. Keene, Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM
Released to Imaging: 5/9/2025 9:33:42 AM



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 39 @ 12' 32.6122818-103.2727108 (H903211-02)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 88.3 % 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	48.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 92.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.0 % 37.6-147

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Celely D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 40 @ 12' 32.6122623-103.2727718 (H903211-03)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.6 % 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	96.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.7 % 37.6-147

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Colley D. Keene

Colley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 41 @ 12' 32.6122730-103.2727326 (H903211-04)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 86.8 % 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	32.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 94.7 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 42 @ 12' 32.6122386-103.2727745 (H903211-05)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 87.4 % 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	64.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 43 @ 12' 32.6122086-103.2727759 (H903211-06)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 88.0 % 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	48.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 44 @ 12' 32.6121575-103.2727095 (H903211-07)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.8 % 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	128	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.7 % 37.6-147

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Coley D. Keene

Coley 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:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 45 @ 12' 32.6121858-103.2727806 (H903211-08)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.6 % 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	1170	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:		BILL TO	P.O. #:			ANALYSIS REQUEST												
Project Manager:			Company:															
Address:			Attn:															
City:		State:	Zip:															
Phone #:		Fax #:	Address:															
Project #:		Project Owner:	City:															
Project Name:		State:	Zip:															
Project Location:		Phone #:																
Sampler Name:		Fax #:																
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						PRESERV	SAMPLING							
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER						
H903211																		
1	B38012' 32.612.3881 -103.272.7551	C	1										DATE	TIME				
2	B39012 32.612.2818 -103.272.7108	C	1										9/16	5:30pm	1			
3	B40012' 32.612.2633 -103.272.7715	C	1										9/16	12:45pm	1			
4	B41012 32.612.2736 -103.272.7326	C	1										9/16	12:42	1			
5	B42012' 32.612.2384 -103.272.7245	C	1										9/16	3:01pm	1			

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Relinquished By:	Date:	Received By:	Date:
[Signature]	Time: [Signature]	[Signature]	Time: [Signature]
Reinforced By:		REMARKS:	
[Signature]		[Blank]	
Relinquished By:		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #: _____	
Delivered By: (Circle One)		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #: _____	
Damaged By: [Blank] Time: [Blank]		Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>	
Sampler - UPS - Bus - Other: [Blank]		CHECKED BY: [Signature] Initials: [Blank]	

E-mail Results



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: APC Inc		P.O. #:	
Project Manager: Steve Brown		Company:	
Address:		Attn:	
City: Hobbs		Address:	
State: NM Zip: 88246		City:	
Phone #:		State:	
Fax #:		Zip:	
Project #:		Project Owner:	
Project Location: NM 656th #2115		Phone #:	
Sample Name: See Attached		Fax #:	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	BTEX	EXT TPH	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER							
H9D3211																
6	B43012 32.612 7754	C	1									9/16	3:03pm	1	1	
	-103.2727754															
7	B44012 32.612 7755	C	1									9/16	5:13pm	1	1	
	-103.2727755															
8	B45012 32.612 7756	C	1									9/16	5:15pm	1	1	
	-103.2727756															

Relinquished By:	Received By:
Date: 9/18/15	Date: 9/18/15
Time: 1:15	Time: 1:15
Delivered By: (Circle One) 1:10	Sample Condition: Intact
Sampler - UPS - Bus - Other: 1:10	CHECKED BY:

Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
REMARKS: 2-Me / Res 115	



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

September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 9:15.

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.

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



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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 46 @ 12' 32.6120666-103.2729757 (H903212-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 89.5 % 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	144	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 97.8 % 37.6-147

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 47 @ 12' 32.6120251-103.2729522 (H903212-02)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 87.2 % 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	336	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 97.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGS AU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 48 @ 12' 32.6129886-103.2729559 (H903212-03)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.1 % 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	128	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	222	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	34.5	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 94.5 % 37.6-147

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 49 32.6119759-103.2728892 (H903212-04)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 87.1 % 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	32.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.7 % 37.6-147

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Coley 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:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 50 32.6119697-103.2728909 (H903212-05)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 89.0 % 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	32.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 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: 09/18/2019
Reported: 09/24/2019
Project Name: NMGS AU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: B 51 @ 12' 32.6119770-103.2729381 (H903212-06)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 91.8 % 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	48.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	92.4	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 52 @ 12' 32.6119550-103.2728067 (H903212-07)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 89.3 % 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	128	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 91.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 53 @ 12' 32.6120324-103.2728724 (H903212-08)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.2 % 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	256	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	19.7	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.5 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/17/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 54 @ 12' 32.6120753-103.2728127 (H903212-09)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.9 % 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	416	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 94.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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C. D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:		P.O. #:		BILL TO												ANALYSIS REQUEST																			
Project Manager:		Company:																																	
Address:		Attn:																																	
City:		Address:																																	
State:		City:																																	
Zip:		State:																																	
Phone #:		Fax #:																																	
Project #:		Project Owner:																																	
Project Name:		Phone #:																																	
Project Location:		Fax #:																																	
Sampler Name:		PRESERV.																																	
FOR LAB USE ONLY		SAMPLING																																	
Lab I.D.		Sample I.D.		(G)RAB OR (C)OM		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER		ACID/BASE		ICE		OTHER		DATE		TIME		C1		C1 TPH		BTX	
H903212		6 R51 010' 32.6119770		C1		1		1		1		1		1		1		1		1		1		1		9/17 15:17		1		1		1			
7 B52 012' 32.6119550		C1		1		1		1		1		1		1		1		1		1		1		1		9/17 16:04		1		1		1			
8 B53 012' 32.6119550		C1		1		1		1		1		1		1		1		1		1		1		1		9/17 17:18		1		1		1			
9 B54 012' 32.6119550		C1		1		1		1		1		1		1		1		1		1		1		1		9/17 18:58		1		1		1			



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September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 17:07.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 55 @ 12' 32.6120731-103.2728734 (H903232-01)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.3 % 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	720	16.0	09/20/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/19/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	119	10.0	09/19/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 81.0 % 41-142

Surrogate: 1-Chlorooctadecane 86.1 % 37.6-147

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 56 @ 12' 32.6120793-103.2728684 (H903232-02)

BTX 8021B		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	GC-NC
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	0.221	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	0.221	0.100	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 137 % 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	864	16.0	09/20/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	21.5	10.0	09/20/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	395	10.0	09/20/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	45.3	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 87.6 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
Reported: 09/24/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: B 57 @ 12' 32.6121233-103.2729716 (H903232-03)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTEx	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 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	1120	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/20/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 83.3 % 41-142

Surrogate: 1-Chlorooctadecane 88.5 % 37.6-147

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Analytical Results For:

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

Received: 09/18/2019
Reported: 09/24/2019
Project Name: NMGS AU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: B 58 @ 12' 32.6121260-103.2727816 (H903232-04)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.5 % 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	832	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	11.9	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 59 @ 12' 32.6121327-103.2727604 (H903232-05)

BTX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 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	1120	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	37.8	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 60 @ 12' 32.6121496-103.2727276 (H903232-06)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 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	240	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 37.6-147

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 61 @ 12' 32.6119948-103.2728627 (H903232-07)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 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	144	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	74.9	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.6 % 41-142

Surrogate: 1-Chlorooctadecane 97.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 62 @ 12' 32.6120276-103.2728493 (H903232-08)

BTX 6021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.7 % 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	928	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	29.9	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 63 @ 12' 32.6119728-103.2729059 (H903232-09)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.4 % 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	816	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	136	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	16.6	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 89.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/18/2019	Sampling Date:	09/18/2019
Reported:	09/24/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 64 @ 12' 32.6120652-103.2727886 (H903232-10)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.58	79.1	2.00	7.18	
Toluene*	<0.050	0.050	09/23/2019	ND	1.55	77.6	2.00	7.16	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.56	77.9	2.00	6.01	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	4.66	77.7	6.00	5.89	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 91.8 % 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	1060	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	85.5	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	12.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 94.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
Reported: 09/24/2019
Project Name: NMGS AU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: B 65 @ 12' 32.6120756-103.2727755 (H903232-11)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.58	79.1	2.00	7.18	
Toluene*	<0.050	0.050	09/23/2019	ND	1.55	77.6	2.00	7.16	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.56	77.9	2.00	6.01	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	4.66	77.7	6.00	5.89	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 89.6 % 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	976	16.0	09/20/2019	ND	432	108	400	3.64	

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	13.6	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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.
- GC-NC 8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
- 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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C. 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

Company Name: <u>Acme</u>		P.O. #:		BILL TO												ANALYSIS REQUEST											
Project Manager: <u>Jeffrey Brown</u>		Company:																									
Address:		Attn:																									
City: <u>Hobbs</u>		Address:																									
Phone #:		City:																									
Project #:		State:																									
Project Location: <u>NH State Ave</u>		Phone #:																									
Sample Name: <u>Joe Quinlan</u>		Fax #:																									
FOR LAB USE ONLY																											

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX							DATE	TIME	EXT TRAIL	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE				
1	B55 012' 33.612.0731	C 1								9/18	7:38			
2	B56 012' 33.612.0734	C 1								9/18	8:43			
3	B57 012' 33.612.1933	C 1								9/18	10:09			
4	B58 012' 33.612.1934	C 1								9/18	10:13			
5	B59 012' 33.612.1937	C 1								9/18	13:05			

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Relinquished By: Joe Quinlan Date: 9/18/19 Received By: Joe Quinlan Date: 9/18/19

Delivered By: (Circle One) 2.02 Sample Condition: Intact Checked By: gjt

Simpler UPS - Bus - Other: 2.40 Cool ☒ Intact ☒ Yes ☐ No ☐ No

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

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS: Time correction



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Acuch</u>				BILL TO				ANALYSIS REQUEST			
Project Manager: <u>Jeff Brown</u>				P.O. #:							
Address:				Company:							
City: <u>Hobbs</u>				Attn:							
State: <u>NM</u>				Address:							
Zip: <u>88240</u>				City:							
Phone #:				State:							
Fax #:				Zip:							
Project #:				Phone #:							
Project Name:				Fax #:							
Project Location: <u>WUGSBA 8114</u>											
Sampler Name: <u>Joe Guadalupe Jr.</u>											
FOR LAB USE ONLY											

Lab I.D.	Sample I.D.	(G)RAB OR (COMP)	# CONTAINERS	MATRIX						DATE	TIME	EXT	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER					
6	360.810' (0121446)	C	1							9/18	13:10	/	/	/
7	103.8707276	C	1							9/18	13:31	/	/	/
8	103.8728627	C	1							9/18	14:06	/	/	/
9	103.8728493	C	1							9/18	14:57	/	/	/
10	103.8729059	C	1							9/18	16:00	/	/	/
11	103.8727286	C	1							9/18	16:00	/	/	/

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Relinquished By: Joe Guadalupe Jr. **Received By:** Joe Guadalupe Jr.

Date: 9/18/18 **Time:** 17:07

Remarks: Final Results

Turnaround Time: Standard

Thermometer ID #97 Corrected Temp. °C

Correction Factor ± 0.4 °C

Bacteria (only) Sample Condition

Cool Intact Observed Temp. °C

Yes Corrected Temp. °C

No

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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

September 25, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/19/19 17:05.

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.

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 fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 66 @ 12' 32.6120883-103.2727075 (H903252-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.2 % 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	1300	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 94.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celestine Keene

Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 67 @ 12' 32.6120324-103.2727400 (H903252-02)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.9 % 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	640	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 96.2 % 41-142

Surrogate: 1-Chlorooctadecane 96.8 % 37.6-147

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Celestine Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 68 @ 12' 32.6120239-103.2727504 (H903252-03)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 88.3 % 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	496	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 90.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 37.6-147

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Celestine D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 69 32.6120188-103.2727537 (H903252-04)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 89.8 % 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	192	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 97.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
Reported: 09/25/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 70 32.6120217-103.2727578 (H903252-05)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 86.8 % 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	112	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.9 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 71 @ 12' 32.6120217-103.2727578 (H903252-06)

BTX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 90.1 % 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	464	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.2 % 37.6-147

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Colley D. Keene

Colley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 72 @ 12' 32.6119186-103.2727507 (H903252-07)

BTX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.2 % 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	496	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 93.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 73 @ 12' 32.6119110-103.2727598 (H903252-08)

BTX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 90.4 % 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	48.0	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 96.2 % 41-142

Surrogate: 1-Chlorooctadecane 98.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 74 @ 12' 32.6119056-103.2727762 (H903252-09)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.1 % 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	48.0	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	14.1	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 95.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 75 @ 12' 32.6119189-103.2727712 (H903252-10)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 90.0 % 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	96.0	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	<10.0	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 95.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 76 @ 12' 32.6119612-103.2727239 (H903252-11)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673	
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403	
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245	
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227	
Total BTX	<0.300	0.300	09/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 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	784	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	74.9	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 89.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 77 @ 12' 32.6119985-103.2727396 (H903252-12)

BTX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673	
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403	
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245	
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227	
Total BTX	<0.300	0.300	09/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.1 % 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	1140	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	190	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	87.3	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 90.2 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/19/2019
Reported: 09/25/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 78 @ 12' 32.6120200-103.2727286 (H903252-13)

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673	
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403	
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245	
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227	
Total BTEX	<0.300	0.300	09/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.0 % 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	1090	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	<10.0	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 93.5 % 37.6-147

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Celely D. Keene

Celely D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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C. D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache Corp. Project Manager: Jeffery Brown Address: City: Hobbs State: NM Zip: 88240 Phone #: Fax #: Project #: Project Owner: Project Name: Project Location: NECTS 219 Sampler Name: Jeff Brown				P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:			
BILL TO							
ANALYSIS REQUEST							

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						DATE	TIME	PRESERV	SAMPLING
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER				
1	8.46 012.32.6120853	C	1							9/19	8:13		
2	103.072.7025	C	1							9/19	11:30		
3	103.072.7400	C	1							9/19	11:30		
4	103.072.7504	C	1							9/19	11:42		
5	103.072.7537	C	1							9/19	11:57		

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Delivered By: (Circle One) Observed Temp. °C: 21.6 Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact CHECKED BY: (Initials) Sample - UPS - Bus - Other: Corrected Temp. °C: 1.0 <input type="checkbox"/> Yes <input type="checkbox"/> No Thermometer ID #97 Standard <input type="checkbox"/> Bacteria (only) Sample Condition <input type="checkbox"/> Cool <input type="checkbox"/> Intact Observed Temp. °C: Correction Factor + 0.4 °C <input type="checkbox"/> Yes <input type="checkbox"/> No Corrected Temp. °C:				REMARKS: Email Results by 4:00 PM			



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Hoagland Corp		P.O. #:		BILL TO		ANALYSIS REQUEST															
Project Manager: Jeffery Brown		Company:																			
Address:		City: Healdsburg		State: CA		Zip: 94920		Attn:													
Phone #:		Fax #:		Address:		City:		State:		Zip:											
Project #:		Project Owner:																			
Project Location: Hillside Dr		Sample Name: See Attached		For Use Only		MATRIX		PRESERV		SAMPLING											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	CHEM / COOL	OTHER :	DATE	TIME							
H03352	103-27275-78		1										9/19	12:03	/	/	/				
6	-103-27275-78												9/19	13:30	/	/	/				
7	-103-27275-78												9/19	13:30	/	/	/				
8	-103-27275-78												9/19	14:51	/	/	/				
9	-103-27275-78												9/19	14:51	/	/	/				
10	-103-27275-78												9/19	14:57	/	/	/				

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Reinquisitioned By:	Date: 9/19	Received By:	Date: 9/19
Reinquisitioned By: [Signature]	Date: 9/19	Received By: [Signature]	Date: 9/19

Verbal Result: ☐ Yes ☒ No **Add Phone #:**

All Results are emailed. Please provide Email address:

REMARKS: Email Results to Jeffery Brown

Delivered By: (Circle One)	Observed Temp. °C	Corrected Temp. °C	Sample Condition	CHECKED BY: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:			<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Cool <input type="checkbox"/> Yes <input type="checkbox"/> No			<input checked="" type="checkbox"/> Rush	<input type="checkbox"/> Bacteria (only) <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Observed Temp. °C Corrected Temp. °C
FORM-006 R 3.0	0.6	1.0		TE				



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Heechu Corp</u>		BILL TO		ANALYSIS REQUEST																					
Project Manager: <u>Jeffrey Brown</u>		P.O. #:																							
Address:		Company:																							
City: <u>Hobbs</u>		Attn:																							
State: <u>NM</u> Zip: <u>88240</u>		Address:																							
Phone #: _____		City:																							
Project #: _____		State:																							
Project Name:		Zip:																							
Project Location: <u>MUSAU A19</u>		Phone #:																							
Sampler Name: <u>Jeffrey Brown</u>		Fax #:																							
FOR LAB USE ONLY		PRESERV.		SAMPLING																					
Lab I.D.	Sample I.D.	(G)RAB OR (C)OM	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	CB / COOL	OTHER	DATE	TIME											
<u>H903352</u>	<u>B76 012 32.614912</u>	<u>C</u>	<u>1</u>										<u>9/19</u>	<u>15:28</u>	<u>EXT TPI</u>	<u>BTEX</u>									
	<u>-103.2727334</u>																								
	<u>12 B77 012 32.6114985</u>		<u>1</u>										<u>9/19</u>	<u>16:30</u>											
	<u>-103.2727334</u>																								
	<u>13 B78 012 32.6120200</u>		<u>1</u>										<u>9/19</u>	<u>16:36</u>											
	<u>-103.2727334</u>																								

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 the client for the 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 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 services hereunder by Cardinal. Instances of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Jeffrey Brown Date: 9-19-19 Received By: Jeffrey Brown

Time: _____

Delivered By: (Circle One) Observed Temp. °C 0.6 Sample Condition Cool ☒ Intact ☒ Yes ☐ No ☐ No CHECKED BY: (Initials) JB

Sampler - UPS - Bus - Other: FORM-008 R 3.0 Corrected Temp. °C 1.0 Thermometer ID #97 Correction Factor + 0.4 °C ☒ Standard ☐ Bacteria (only) Sample Condition Cool ☒ Intact ☒ Yes ☐ No ☐ No Observed Temp. °C _____ Corrected Temp. °C _____

REMARKS: Email Result to Jeffrey Brown

Verbal Result: ☐ Yes ☐ No Add'l Phone #: _____

All Results are emailed. Please provide Email address: _____



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

September 27, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/24/19 7:30.

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.

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



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:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 79 @ 12' 32.6119567-103.2727105 (H903272-01)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 83.7 % 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	688	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	12.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 82.9 % 41-142

Surrogate: 1-Chlorooctadecane 87.4 % 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:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 80 @ 12' 32.6120273-103.2726743 (H903272-02)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 85.0 % 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	384	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.8 % 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:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 81 32.6121375-103.2726961 (H903272-03)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 84.3 % 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	224	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 89.8 % 41-142

Surrogate: 1-Chlorooctadecane 94.3 % 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: 09/24/2019
Reported: 09/27/2019
Project Name: NMGSAU #2119
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 09/20/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Mike Snyder

Sample ID: B 82 @ 12' 32.6120784-103.2726877 (H903272-04)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 84.9 % 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	416	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 86.4 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

September 05, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/05/19 7:40.

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.

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



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:	09/05/2019	Sampling Date:	09/04/2019
Reported:	09/05/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: V 2 SURFACE (H903065-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 2 @ 4' (H903065-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 2 @ 8' (H903065-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 1 @ SURFACE (H903065-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/05/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/05/2019	Sampling Date:	09/04/2019
Reported:	09/05/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: V 1 @ 2' (H903065-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1650	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 1 @ 4' (H903065-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	09/05/2019	ND	416	104	400	0.00	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

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

Cardinal Laboratories

*=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

Company Name:		P.O. #:	BILL TO		ANALYSIS REQUEST	
Project Manager:		Company:				
Address:		Attn:				
City:		State:	Zip:			
Phone #:		Fax #:	Address:			
Project #:		Project Owner:	City:	State:	Zip:	
Project Location:		Phone #:				
Sample Name:		Fax #:				
Lab I.D.		Sample I.D.				
		(G)RAB OR (C)OMP.	MATRIX		PRESERV.	SAMPLING
		# CONTAINERS				
		GROUNDWATER				
		WASTEWATER				
		SOIL				
		OIL				
		SLUDGE				
		OTHER				
		ACID/BASE				
		ICE / COOL				
		OTHER				
		DATE	TIME			

PLEASE NOTE: Liability and Damages. Contractor'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 the client for the 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 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 or its subsidiaries, affiliates or successors arising out of claim related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time:	Received By:	Fax Result:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
REMARKS:					

Delivered By: (Circle One) C.S.E. #497 Sample Condition Cool Intact ☒ Yes ☐ No CHECKED BY: (Initials) J.P.
 Sampler - UPS - Bus - Other: Constructed 0.9%
 E-mail Results
 Rush



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

September 11, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/06/19 17:00.

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.

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 "Coley D. Keene". The signature is fluid and cursive.

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:	09/06/2019	Sampling Date:	09/06/2019
Reported:	09/11/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 1 @ 12' 32.6124168-103.2729871 (H903092-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07	
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 89.0 % 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	176	16.0	09/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	207	103	200	2.73	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	215	107	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 76.2 % 41-142

Surrogate: 1-Chlorooctadecane 79.2 % 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:	09/06/2019	Sampling Date:	09/06/2019
Reported:	09/11/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 4 @ 12' 32.6122356-103.2729844 (H903092-02)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07		
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83		
Total BTX	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.5 % 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	64.0	16.0	09/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	207	103	200	2.73		
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	215	107	200	2.83		
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND						

Surrogate: 1-Chlorooctane 75.0 % 41-142

Surrogate: 1-Chlorooctadecane 78.7 % 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

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: 4095th		BILL TO		ANALYSIS REQUEST																		
Project Manager: Settler Brown		P.O. #:																				
Address:		Company:																				
City: Hobbs		Attn:																				
State: NM Zip: 88240		Address:																				
Phone #:		City:																				
Project #:		State:																				
Project Location: NM-5544 #2119		Phone #:																				
Sampler Name: Tom Brown		Fax #:																				
FOR LAB USE ONLY																						
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING												
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE			OTHER	ACID/BASE	ICE / COOL	OTHER								
H00000	1 B1012-103.472.3501		1								916	1209	1	1	1							
	2 B1012-103.472.3501		1								916	352pm	1	1	1							
<p>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 the client for the 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 30 days after completion of the applicable services. 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 services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																						
Relinquished By: Good		Date: 9-6-19		Received By: Thomas		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:		<p>REMARKS:</p> <p>EMail Results</p>												
Relinquished By: Good		Time: 17:00		Date: 9-6-19		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:														
Delivered By: (Circle One) 3.9c		Sample Condition		CHECKED BY: TC																		
Sampler - UPS - Bus - Other: 3.3c		Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No																				



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

September 12, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/10/19 12:25.

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.

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



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: 09/10/2019
 Reported: 09/12/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 11 @ 12' 32.6123450-103.2729049 (H903114-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722	
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208	
Total BTX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 90.8 % 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	976	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/10/2019	Sampling Date:	09/10/2019
Reported:	09/12/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 12 @ 12' 32.6123964-103.2729328 (H903114-02)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722	
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 90.9 % 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	96.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 86.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/10/2019	Sampling Date:	09/10/2019
Reported:	09/12/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 13 @ 12' 32.6123561-103.2729757 (H903114-03)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722	
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 90.3 % 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	128	16.0	09/11/2019	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.7 % 41-142

Surrogate: 1-Chlorooctadecane 86.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/10/2019	Sampling Date:	09/10/2019
Reported:	09/12/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 14 @ 12' 32.6122143-103.2729556 (H903114-04)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722	
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.7 % 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	160	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 86.6 % 37.6-147

Cardinal Laboratories

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Agache</u> Project Manager: <u>Jeffrey Bacon</u> Address: City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u> Phone #: Fax #: Project #: Project Owner: Project Name: Project Location: <u>MUSALL 2119</u> Sampler Name: <u>Joe Musall</u>		BILL TO P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:	
FOR LAB USE ONLY		ANALYSIS REQUEST	
Lab I.D. Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	
	MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER	PRESERV. ACID/BASE ICE/ COOL OTHER	SAMPLING DATE TIME
1 11012 32 GIBS+SC 2 11012 32 GIBS+SC 3 11012 32 GIBS+SC 4 11012 32 GIBS+SC	1 1 2 1 3 1 4 1	1 1 2 1 3 1 4 1	1 9/10 7:57 2 9/10 7:59 3 9/10 8:01 4 9/10 11:47
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Relinquished By: <u>Joe Musall</u> Date: <u>9/10</u> Time: <u>12:25</u>	Received By: <u>Joe Musall</u> Date: <u>9/10</u> Time: <u>12:25</u>	REMARKS: (Regular)	
Delivered By: (Circle One) <u>5.62</u> Sampler - UPS - Bus - Other: <u>Consistent 6.02</u>	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Pres <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	CHECKED BY: <u>Joe</u>	



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

September 13, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/09/19 16:54.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B3 @ 12' 32.6123770-103.2730927 (H903102-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	GC-NC
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.3 % 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	48.0	16.0	09/10/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 74.9 % 41-142

Surrogate: 1-Chlorooctadecane 77.6 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B5 @ 12' 32.612403-103.2728533 (H903102-02)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 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	608	16.0	09/10/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 75.4 % 41-142

Surrogate: 1-Chlorooctadecane 78.7 % 37.6-147

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Celestine D. Keene

Celestine D. Keene, Lab Director/Quality Manager

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Received by OCD: 8/14/2024 8:53:22 AM
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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B6 @ 12' 32.6124535-103.2729123 (H903102-03)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 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	288	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B7 @ 12' 32.6123532-103.27230508 (H903102-04)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 88.7 % 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	48.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 80.2 % 41-142

Surrogate: 1-Chlorooctadecane 84.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B8 @ 12' 32.6123688-103.2730307 (H903102-05)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTEX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 90.0 % 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	80.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 80.5 % 41-142

Surrogate: 1-Chlorooctadecane 85.0 % 37.6-147

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Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B9 @ 12' 32.612363-103.2728852 (H903102-06)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 90.8 % 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	112	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 78.8 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/09/2019	Sampling Date:	09/09/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B10 @ 12' 32.6123023-103.2728238 (H903102-07)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTEX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 92.3 % 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	688	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B2 @ 12' 32.6124219-103.2730907 (H903102-08)

BTX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 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	64.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.1 % 41-142

Surrogate: 1-Chlorooctadecane 82.8 % 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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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-8 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

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Celey D. Keene, Lab Director/Quality Manager



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

Received by *OCD*: 8/14/2024 8:53:22 AM



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

September 05, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/05/19 7:40.

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.

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: 09/05/2019
 Reported: 09/05/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/04/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: V 2 SURFACE (H903065-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 2 @ 4' (H903065-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 2 @ 8' (H903065-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	09/05/2019	ND	416	104	400	0.00	

Sample ID: V 1 @ SURFACE (H903065-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/05/2019	ND	416	104	400	0.00	

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

Received: 09/05/2019
 Reported: 09/05/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/04/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: V 1 @ 2' (H903065-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1650	16.0	09/05/2019	ND	416	104	400	0.00		

Sample ID: V 1 @ 4' (H903065-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	09/05/2019	ND	416	104	400	0.00	

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

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

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.

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

Company Name: <u>Aspire</u>		BILL TO		ANALYSIS REQUEST																					
Project Manager: <u>Jeff Brown</u>		P.O. #:																							
Address:		Company:																							
City: <u>Hobbs</u> State: <u>NM</u> Zip:		Attn:																							
Phone #: _____ Fax #: _____		Address:																							
Project #: _____ Project Owner:		City:																							
Project Name:		State:																							
Project Location: <u>NMGS44 42119</u>		Phone #:																							
Sampler Name: <u>Sose Leonard</u>		Fax #:																							
FOR LAB USE ONLY																									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING														
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME									
<u>HP03065</u>	<u>100 Surface</u>	<u>5</u>	<u>1</u>								<u>9/4</u>	<u>4:54pm</u>													
	<u>202041</u>	<u>5</u>	<u>1</u>									<u>4:58pm</u>													
	<u>302081</u>	<u>4</u>	<u>1</u>									<u>5:00pm</u>													
	<u>4010 Surface</u>	<u>5</u>	<u>1</u>									<u>5:02</u>													
	<u>50102</u>	<u>5</u>	<u>1</u>									<u>5:04</u>													
	<u>60104</u>	<u>5</u>	<u>1</u>									<u>5:06</u>													
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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																									
Relinquished By: <u>Jeff Brown</u>		Date: <u>9/5/19</u> Time: <u>07:40</u>		Received By: <u>Mike Funk</u>		Date: _____ Time: _____		Sample Condition		CHECKED BY: (Initials)															
Relinquished By:		Date:		Received By:		Date:		Cool <input type="checkbox"/> Intact <input type="checkbox"/>																	
Delivered By: (Circle One) <u>CSE</u>		<u>#497</u>						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No															
Sampler - UPS - Bus - Other: <u>Collected 0.9g</u>										<u>FD.</u>															
REMARKS: <u>Email Results</u>																									
Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____																									
Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: _____																									



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

September 11, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/06/19 17:00.

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.

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 style with a large, stylized 'C' and 'K'.

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: 09/06/2019
 Reported: 09/11/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 1 @ 12' 32.6124168-103.2729871 (H903092-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07	
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 89.0 % 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	176	16.0	09/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	207	103	200	2.73	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	215	107	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 76.2 % 41-142

Surrogate: 1-Chlorooctadecane 79.2 % 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: 09/06/2019
 Reported: 09/11/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 4 @ 12' 32.6122356-103.2729844 (H903092-02)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07		
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83		
Total BTX	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.5 % 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	64.0	16.0	09/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	207	103	200	2.73	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	215	107	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 75.0 % 41-142

Surrogate: 1-Chlorooctadecane 78.7 % 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

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

Cardinal Laboratories

*=Accredited Analyte

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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]

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 the client for the 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 30 days after completion of the applicable analyses. 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	<i>[Signature]</i>	Date:	<i>9-6-19</i>	Received By:	<i>[Signature]</i>
Relinquished By:	<i>[Signature]</i>	Time:	<i>17:00</i>	Received By:	<i>[Signature]</i>

Phone Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #
Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:
REMARKS:			

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other:

2.9c	#97
Collected	3.3c

Sample Condition	
Cool	Intact
<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No

Final Results



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

September 13, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/09/19 16:54.

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.

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B3 @ 12' 32.6123770-103.2730927 (H903102-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	GC-NC
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.3 % 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	48.0	16.0	09/10/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 74.9 % 41-142

Surrogate: 1-Chlorooctadecane 77.6 % 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: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B5 @ 12' 32.612403-103.2728533 (H903102-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82		
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49		
Total BTEx	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 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	608	16.0	09/10/2019	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 75.4 % 41-142

Surrogate: 1-Chlorooctadecane 78.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B6 @ 12' 32.6124535-103.2729123 (H903102-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82		
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49		
Total BTEx	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 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	288	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 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: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B7 @ 12' 32.6123532-103.27230508 (H903102-04)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.7 % 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	48.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 80.2 % 41-142

Surrogate: 1-Chlorooctadecane 84.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B8 @ 12' 32.6123688-103.2730307 (H903102-05)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.0 % 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	80.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 80.5 % 41-142

Surrogate: 1-Chlorooctadecane 85.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B9 @ 12' 32.612363-103.2728852 (H903102-06)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49	
Total BTX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.8 % 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	112	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 78.8 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B10 @ 12' 32.6123023-103.2728238 (H903102-07)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82		
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49		
Total BTEx	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.3 % 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	688	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Analytical Results For:

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

Received: 09/09/2019
 Reported: 09/13/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/09/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B2 @ 12' 32.6124219-103.2730907 (H903102-08)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/10/2019	ND	2.06	103	2.00	3.82		
Toluene*	<0.050	0.050	09/10/2019	ND	2.07	103	2.00	4.16		
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.08	104	2.00	3.74		
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.21	103	6.00	3.49		
Total BTEx	<0.300	0.300	09/10/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 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	64.0	16.0	09/10/2019	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane 79.1 % 41-142

Surrogate: 1-Chlorooctadecane 82.8 % 37.6-147

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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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

11 of 11 page



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Acme</u>		P.O. #:		BILL TO		ANALYSIS REQUEST									
Project Manager: <u>Bruce Baker / Jeffery Brown</u>		Company:													
Address:		Attn:													
City: <u>Hobbs</u>		State: <u>NM</u>		Zip: <u>88240</u>											
Phone #:		Address:													
Project #:		City:		State:		Zip:									
Project Name:		Phone #:													
Project Location: <u>ALBESQUE #2119</u>		Fax #:													
Sampler Name: <u>Joe Quevedo</u>		PRESERV.		SAMPLING											
FOR LAB USE ONLY															
Lab I.D.		Sample I.D.													
H903102		31.0-43.70													
1		35.0-12' -10.5-23.0912													
2		35.0-12' 32.0-41.8123													
3		35.0-12' 50.0-40.5535													
4		35.0-12' 102.0-10.5123													
5		35.0-12' 32.0-55.32													
6		35.0-12' 32.0-41.8123													
7		35.0-12' 32.0-41.8123													
8		35.0-12' 32.0-41.8123													
9		35.0-12' 32.0-41.8123													
10		35.0-12' 32.0-41.8123													
11		35.0-12' 32.0-41.8123													
12		35.0-12' 32.0-41.8123													
13		35.0-12' 32.0-41.8123													
14		35.0-12' 32.0-41.8123													
15		35.0-12' 32.0-41.8123													
16		35.0-12' 32.0-41.8123													
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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 12, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/10/19 12:25.

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.

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: 09/10/2019
 Reported: 09/12/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 11 @ 12' 32.6123450-103.2729049 (H903114-01)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722		
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85		
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247		
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208		
Total BTEX	<0.300	0.300	09/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.8 % 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	976	16.0	09/11/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 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: 09/10/2019
 Reported: 09/12/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 12 @ 12' 32.6123964-103.2729328 (H903114-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722		
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85		
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247		
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208		
Total BTEX	<0.300	0.300	09/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 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	96.0	16.0	09/11/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 86.8 % 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: 09/10/2019
 Reported: 09/12/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 13 @ 12' 32.6123561-103.2729757 (H903114-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722		
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85		
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247		
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208		
Total BTEx	<0.300	0.300	09/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.3 % 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	128	16.0	09/11/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 80.7 % 41-142

Surrogate: 1-Chlorooctadecane 86.9 % 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: 09/10/2019
 Reported: 09/12/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 14 @ 12' 32.6122143-103.2729556 (H903114-04)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.98	98.9	2.00	0.722	
Toluene*	<0.050	0.050	09/11/2019	ND	1.96	97.9	2.00	2.85	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.02	101	2.00	0.247	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.09	102	6.00	0.208	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.7 % 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	160	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 86.6 % 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

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

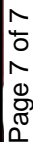
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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

Released to Imaging: 5/9/2025 9:33:42 AM



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

September 17, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/11/19 15:35.

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.

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

Received: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 3 32.6124552-103.2730152 (H903141-01)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 79.2 % 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	80.0	16.0	09/16/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 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: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 4 32.6123818-103.27330568 (H903141-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEx	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 79.2 % 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	48.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 85.0 % 41-142

Surrogate: 1-Chlorooctadecane 95.6 % 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: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 5 32.6123114-103.2730431 (H903141-03)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 77.2 % 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	48.0	16.0	09/16/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 84.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 6 32.6123253-103.2730421 (H903141-04)

BTX 8021B		mg/kg	Analyzed By: BF					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 151 % 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	32.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 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: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 7 32.6122662-103.2729995 (H903141-05)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 75.4 % 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	128	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	190	95.0	200	7.57	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	185	92.5	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 83.4 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 15 32.6122705-103.2728741 (H903141-06)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEx	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 78.5 % 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	144	16.0	09/16/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 89.0 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/17/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 10 32.6121547-103.2729090 (H903141-07)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 78.3 % 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	128	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40		
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79		
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND						

Surrogate: 1-Chlorooctane 93.3 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

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

Released to Imaging: 5/9/2025 9:33:42 AM



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

September 18, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/13/19 7:30.

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.

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

Received: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 17 @ 12' 32.6122239-103.2730310 (H903162-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 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	160	16.0	09/16/2019	ND	432	108	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 84.7 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 20 @ 12' 32.6121242-103.2729113 (H903162-02)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36		
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48		
Total BTEx	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 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	112	16.0	09/16/2019	ND	432	108	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 88.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.9 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 15 @ 12' 32.6123148-103.2728449 (H903162-03)

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36		
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	160	16.0	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 16 @ 12' 32.6123332-103.2728691 (H903162-04)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 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	112	16.0	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 86.0 % 41-142

Surrogate: 1-Chlorooctadecane 92.6 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 9 32.6122163-103.2729334 (H903162-05)

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36		
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 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	48.0	16.0	09/16/2019	ND	400	100	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	09/14/2019	ND	198	98.8	200	5.98	
DRO >C10-C28*	<10.0	10.0	09/14/2019	ND	201	100	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	09/14/2019	ND					

Surrogate: 1-Chlorooctane 94.6 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 8 32.6122163-103.2729334 (H903162-06)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 76.3 % 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	160	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 19 32.6122829-103.2728600 (H903162-07)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 78.8 % 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	928	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 78.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.9 % 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: 09/13/2019
 Reported: 09/18/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/12/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 18 32.6122566-103.2728781 (H903162-08)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79		
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62		
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64		
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18		
Total BTEX	<0.300	0.300	09/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 76.6 % 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	272	16.0	09/16/2019	ND	400	100	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	09/16/2019	ND	202	101	200	3.54	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	193	96.6	200	4.33	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.4 % 37.6-147

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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", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

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

Released to Imaging: 5/9/2025 9:33:42 AM



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

September 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/16/19 11:40.

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.

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 style with a large, stylized 'C' and 'K'.

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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 24 @ 12' 32.6124803-103.2728909 (H903176-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	QR-03
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	32.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

Cardinal Laboratories

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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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 1 32.6124824-103.2729247 (H903176-02)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 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	80.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 92.0 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 2 32.6124668-103.2729945 (H903176-03)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	48.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 94.3 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 11 32.6125023-103.2728862 (H903176-04)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	64.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 81.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.3 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 25 @ 12' 32.6125097-103.2729076 (H903176-05)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 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	96.0	16.0	09/17/2019	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	09/17/2019	ND	217	108	200	3.39	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	218	109	200	0.650	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 96.0 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 26 @ 12' 32.6123182-103.2727883 (H903176-06)

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEX	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 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	160	16.0	09/17/2019	ND	432	108	400	0.00	QR-03	

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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 27 @ 12' 32.6124058-103.2728697 (H903176-07)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	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	48.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 88.9 % 41-142

Surrogate: 1-Chlorooctadecane 99.5 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 12 32.6125323-103.2728815 (H903176-08)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 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	48.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 87.2 % 41-142

Surrogate: 1-Chlorooctadecane 96.4 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 28 @ 12' 32.6123391-103.2728375 (H903176-09)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 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	80.0	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 84.8 % 41-142

Surrogate: 1-Chlorooctadecane 96.4 % 37.6-147

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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/13/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 29 @ 12' 32.6122533-103.2727678 (H903176-10)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 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	240	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	12.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 83.9 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- 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.
- 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

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

Released to Imaging: 5/9/2025 9:33:42 AM

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

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Phone Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:
REMARKS:			

Email Results



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

September 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/16/19 11:40.

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.

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 style with a large, stylized 'C' and 'K'.

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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 21 @ 12' 32.6121112-103.2729187 (H903177-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/19/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 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	528	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 85.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 22 @ 12' 32.6121214-103.2728724 (H903177-02)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 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	816	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 98.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 23 @ 12' 32.6121264-103.2728416 (H903177-03)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 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	720	16.0	09/17/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 99.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 30 @ 12' 32.6124509-103.2727966 (H903177-04)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	64.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 83.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 31 @ 12' 32.6124594-103.2727497 (H903177-05)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	64.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 85.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 32 @ 12' 32.6124605-103.2727383 (H903177-06)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71		
Total BTEX	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.0 % 41-142

Surrogate: 1-Chlorooctadecane 91.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 33 @ 12' 32.6123673-103.2727364 (H903177-07)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 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	48.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 91.3 % 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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 34 @ 12' 32.6124354-103.2727041 (H903177-08)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 92.0 % 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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 35 @ 12' 32.6124687-103.2727859 (H903177-09)

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41	
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 85.4 % 41-142

Surrogate: 1-Chlorooctadecane 91.8 % 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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 36 @ 12' 32.6123770-103.2727806 (H903177-10)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	2.08	104	2.00	2.41		
Toluene*	<0.050	0.050	09/20/2019	ND	1.84	91.9	2.00	1.76		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.86	93.1	2.00	2.77		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.70	95.1	6.00	2.71		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 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	48.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.8 % 41-142

Surrogate: 1-Chlorooctadecane 93.8 % 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: 09/16/2019
 Reported: 09/20/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/14/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 37 @ 12' 32.6124351-103.2727172 (H903177-11)

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/19/2019	ND	2.05	103	2.00	4.77	
Toluene*	<0.050	0.050	09/19/2019	ND	1.97	98.3	2.00	0.984	
Ethylbenzene*	<0.050	0.050	09/19/2019	ND	1.88	94.2	2.00	8.89	QR-03
Total Xylenes*	<0.150	0.150	09/19/2019	ND	5.71	95.1	6.00	7.38	QR-03
Total BTEx	<0.300	0.300	09/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	32.0	16.0	09/17/2019	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	09/19/2019	ND	220	110	200	4.74	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	226	113	200	3.61	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

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.
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.
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", is written over a horizontal line.

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

Company Name: <u>Apex</u>		P.O. #:		BILL TO												ANALYSIS REQUEST											
Project Manager: <u>Jeffrey Brown</u>		Company:																									
Address:		Attn:																									
City: <u>Hobbs</u>		Address:																									
State: <u>NM</u> Zip: <u>88240</u>																											
Phone #:																											
Fax #:																											
Project #:																											
Project Owner:																											
Project Name:																											
Project Location: <u>WML GSHA #2119</u>		State:		Zip:																							
Sample Name: <u>WML GSHA #2119</u>		Phone #:																									
FOR LAB USE ONLY		Fax #:																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP		# CONTAINERS		MATRIX				PRESERV		SAMPLING													
								GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :				ACID/BASE: ICE/COOL OTHER :		DATE TIME													
H903177		B32012 32.612 46805		1		1		1				1		9/14 12:38		C EXT TPH BTEX											
7		B33012 32.612 3673		1		1		1				1		9/14 4:17pm													
8		B34012 32.612 4354		1		1		1				1		9/14 4:24pm													
9		B35012 32.612 4687		1		1		1				1		9/14 7:34													
10		B36012 32.612 3770		1		1		1				1		9/14 7:36													

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Relinquished By: <u>Jeff Brown</u>	Date: <u>9/16</u>	Received By: <u>Jeff Brown</u>	Date: <u>9/16</u>
Relinquished By: <u>Jeff Brown</u>	Date: <u>9/16</u>	Received By: <u>Jeff Brown</u>	Date: <u>9/16</u>
Delivered By: (Circle One) <u>3.72</u>	Time: <u>11:40</u>	Sample Condition	CHECKED BY: <u>Jeff Brown</u>
Sampler - UPS - Bus - Other: <u>Converted 4.12</u>		Cool <input type="checkbox"/> Intact <input type="checkbox"/>	(Initials)
		Yes <input type="checkbox"/> No <input type="checkbox"/>	

Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
REMARKS:	



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

September 23, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 9:15.

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.

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

Received:	09/18/2019	Sampling Date:	09/16/2019
Reported:	09/23/2019	Sampling Type:	Soil
Project Name:	NMGS AU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: B 38 @ 12' 32.6123281-103.2727551 (H903211-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTEX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 86.5 % 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	144	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 39 @ 12' 32.6122818-103.2727108 (H903211-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.3 % 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	48.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 92.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.0 % 37.6-147

Cardinal Laboratories

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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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 40 @ 12' 32.6122623-103.2727718 (H903211-03)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 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	96.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.7 % 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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 41 @ 12' 32.6122730-103.2727326 (H903211-04)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 86.8 % 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	32.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 94.7 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 42 @ 12' 32.6122386-103.2727745 (H903211-05)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.4 % 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	64.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

Cardinal Laboratories

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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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 43 @ 12' 32.6122086-103.2727759 (H903211-06)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.0 % 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	48.0	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.0 % 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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 44 @ 12' 32.6121575-103.2727095 (H903211-07)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/20/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/20/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/20/2019	ND	5.40	89.9	6.00	0.509		
Total BTEx	<0.300	0.300	09/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.8 % 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	128	16.0	09/19/2019	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.7 % 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: 09/18/2019
 Reported: 09/23/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 45 @ 12' 32.6121858-103.2727806 (H903211-08)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509		
Total BTX	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 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	1170	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

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

Cardinal Laboratories

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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

Company Name:			
Project Manager:			P.O. #:
Address:			Company:
City:	State:	Zip:	Attn:
Phone #:	Fax #:	Project Owner:	Address:
Project #:		City:	State:
Project Location:			Zip:
Sample Name:			Phone #:
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	Fax #:

	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING DATE	TIME									
			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
H903211	B38CB12' 32.6123A81	C 1								9/14	9:30am	CI	BTEX	XRF TPH						
2	-103.272.2551	C 1								9/14	9:30am									
3	B39B12 32.6122818	C 1								9/14	9:30am									
4	-103.272.7105	C 1								9/14	12:45pm									
5	B40B12' 32.6122823	C 1								9/14	12:42									
	-103.272.7326	C 1								9/14	3:01pm									
	B42B12' 32.6122386	C 1								9/14	3:01pm									
	-103.272.7245	C 1								9/14	3:01pm									

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Relinquished By:	Date:	Received By:	Date:
<i>[Signature]</i>	<i>9/15/15</i>	<i>[Signature]</i>	<i>9/15/15</i>

Delivered By: (Circle One)	Time:	Sample Condition	CHECKED BY: (Initials)
<i>UPS</i>	<i>9:15</i>	<input checked="" type="checkbox"/> Cool - Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> Yes	<i>[Signature]</i>

REMARKS:
E-mail Results



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:		P.O. #:	
Project Manager:		Company:	
Address:	State:	Attn:	ANALYSIS REQUEST
City:	State:	Address:	
Phone #:	Fax #:	City:	
Project #:	Project Owner:	State:	
Project Name:	Project Location:	Zip:	
Sample Name:	FOR LAB USE ONLY	Fax #:	
Lab I.D.	Sample I.D.	MATRIX	PRESERV.
		SAMPLING	
	(G)RAB OR (C)OMP.		
	# CONTAINERS		
	GROUNDWATER		
	WASTEWATER		
	SOIL		
	OIL		
	SLUDGE		
	OTHER :		
	ACID/BASE:		
	ICE / COOL		
	OTHER :		
	DATE		
	TIME		

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Relinquished By:	Date:	Received By:	Date:	Time:	Time:	REMARKS:
[Signature]	9/18/19	[Signature]	9/18/19	9:15	9:15	
Relinquished By:		Received By:				
Delivered By: (Circle One)		Sample Condition		CHECKED BY:		
Sampler - UPS - Bus - Other:		Cool <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		(Initials)		
		Contact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				



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

September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 9:15.

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.

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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 46 @ 12' 32.6120666-103.2729757 (H903212-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 89.5 % 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	144	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 97.8 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 47 @ 12' 32.6120251-103.2729522 (H903212-02)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.2 % 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	336	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 97.2 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 48 @ 12' 32.6129886-103.2729559 (H903212-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.82	91.1	2.00	0.321		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.4	2.00	0.798		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.76	88.0	2.00	1.50		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.40	89.9	6.00	0.509		
Total BTEX	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.1 % 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	128	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	222	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	34.5	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 94.5 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 49 32.6119759-103.2728892 (H903212-04)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTEX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.1 % 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	32.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.7 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 50 32.6119697-103.2728909 (H903212-05)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690		
Total BTEx	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.0 % 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	32.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 51 @ 12' 32.6119770-103.2729381 (H903212-06)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690		
Total BTEx	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 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	48.0	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	92.4	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 52 @ 12' 32.6119550-103.2728067 (H903212-07)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690		
Total BTEx	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.3 % 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	128	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 91.8 % 37.6-147

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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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 53 @ 12' 32.6120324-103.2728724 (H903212-08)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03		
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04		
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63		
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690		
Total BTEX	<0.300	0.300	09/21/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.2 % 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	256	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	19.7	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.5 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 54 @ 12' 32.6120753-103.2728127 (H903212-09)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/21/2019	ND	1.86	93.1	2.00	3.03	
Toluene*	<0.050	0.050	09/21/2019	ND	1.81	90.6	2.00	2.04	
Ethylbenzene*	<0.050	0.050	09/21/2019	ND	1.82	91.2	2.00	1.63	
Total Xylenes*	<0.150	0.150	09/21/2019	ND	5.42	90.3	6.00	0.00690	
Total BTX	<0.300	0.300	09/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.9 % 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	416	16.0	09/19/2019	ND	400	100	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	09/19/2019	ND	202	101	200	2.43	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	194	96.8	200	2.47	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 94.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

CARDINAL
Laboratories

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

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(575) 393-2326 FAX (575) 393-2476

Released to Imaging: 5/9/2025 9:33:42 AM



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

September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/18/19 17:07.

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.

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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 55 @ 12' 32.6120731-103.2728734 (H903232-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	720	16.0	09/20/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/19/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	119	10.0	09/19/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 81.0 % 41-142

Surrogate: 1-Chlorooctadecane 86.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 56 @ 12' 32.6120793-103.2728684 (H903232-02)

BTX 8021B		mg/kg	Analyzed By: CK					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109	
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71	GC-NC
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09	
Total Xylenes*	0.221	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02	
Total BTX	0.221	0.100	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 137 % 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	864	16.0	09/20/2019	ND	416	104	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	21.5	10.0	09/20/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	395	10.0	09/20/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	45.3	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 87.6 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 57 @ 12' 32.6121233-103.2729716 (H903232-03)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 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	1120	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/20/2019	ND	190	95.0	200	0.113	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	197	98.4	200	3.16	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 83.3 % 41-142

Surrogate: 1-Chlorooctadecane 88.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 58 @ 12' 32.6121260-103.2727816 (H903232-04)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 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	832	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	11.9	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 59 @ 12' 32.6121327-103.2727604 (H903232-05)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 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	1120	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	37.8	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 93.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 60 @ 12' 32.6121496-103.2727276 (H903232-06)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 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	240	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	<10.0	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 61 @ 12' 32.6119948-103.2728627 (H903232-07)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEx	<0.300	0.300	09/23/2019	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	144	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/19/2019	ND	207	104	200	2.29	
DRO >C10-C28*	74.9	10.0	09/19/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/19/2019	ND					

Surrogate: 1-Chlorooctane 91.6 % 41-142

Surrogate: 1-Chlorooctadecane 97.5 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 62 @ 12' 32.6120276-103.2728493 (H903232-08)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 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	928	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	29.9	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.9 % 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: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 63 @ 12' 32.6119728-103.2729059 (H903232-09)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.97	98.4	2.00	0.109		
Toluene*	<0.050	0.050	09/23/2019	ND	1.74	87.2	2.00	1.71		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.75	87.5	2.00	1.09		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.36	89.4	6.00	1.02		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 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	816	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	136	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	16.6	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 89.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 64 @ 12' 32.6120652-103.2727886 (H903232-10)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/23/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	4.66	77.7	6.00	5.89		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 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	1060	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	85.5	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	12.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 94.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/18/2019
 Reported: 09/24/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: B 65 @ 12' 32.6120756-103.2727755 (H903232-11)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/23/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	4.66	77.7	6.00	5.89		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.6 % 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	976	16.0	09/20/2019	ND	432	108	400	3.64		

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	09/20/2019	ND	207	104	200	2.29	
DRO >C10-C28*	13.6	10.0	09/20/2019	ND	200	100	200	1.97	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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

ANALYSIS REQUEST

Released to Imaging: 5/9/2025 9:33:42 AM



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:				BILL TO				ANALYSIS REQUEST						
Project Manager:				P.O. #:										
Address:				Company:										
City:				Attn:										
Phone #:				Address:										
State:				Zip:										
Fax #:				City:										
Project #: Project Owner:				State:										
Project Location:				Phone #:										
Sample Name:				Fax #:										
FOR LAB USE ONLY														
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING								
				GROUNDEWATER WASTEWATER SOIL OIL SLUDGE OTHER :	ACID/BASE: <input checked="" type="checkbox"/> COOL OTHER :	DATE TIME								
H9D3232	BL60 @10' C1A1Uqle -103.8727276	C 1		/		9/18 13:10	-	-	-					
	BL61 @12.32.6119C448 -103.87288627	C 1		/		9/18 13:31	-	-	-					
	BL62 @12.32.6120B76 -103.87288627	C 1		/		9/18 14:06	-	-	-					
	BL63 @12.32.61197285 -103.87290559	C 1		/		9/18 14:51	-	-	-					
	BL64 @12.32.6120652 -103.87277886	C 1		/		9/18 16:00	-	-	-					

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Relinquished By: [Signature] **Date:** 9/18/19 **Received By:** [Signature]

Refundished By: [Signature] **Date:** 9/18/19 **Time:** 17:07 **Received By:** [Signature]

Delivered By: (Circle One)
☒ Sample - UPS ☐ Bus ☐ Other: _____
FORM-006 R 3.0 **Observed Temp. °C:** 22.0 **Corrected Temp. °C:** 2.4 **Sample Condition:** Cool Intact Yes No **CHECKED BY:** [Initials]
Turnaround Time: Standard Rush **Bacteria (only)** Bacterium ID #97 Corrected Temp. °C

REMARKS: Email Recd 9/18



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #929

Enclosed are the results of analyses for samples received by the laboratory on 09/19/19 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.

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 style with a large, stylized 'C' and 'K'.

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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #929
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 5' (H903247-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18	
Toluene*	0.058	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16	
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01	
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89	
Total BTX	<0.300	0.300	09/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 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	30400	16.0	09/20/2019	ND	432	108	400	3.77	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*	12.3	10.0	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	515	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	88.8	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 121 % 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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #929
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 10' (H903247-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEx	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.4 % 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	24800	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #929
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 15' (H903247-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEx	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.1 % 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	17200	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

Cardinal Laboratories

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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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #929
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 19' (H903247-04)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.6 % 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	24400	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.1 % 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

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

September 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #928

Enclosed are the results of analyses for samples received by the laboratory on 09/19/19 15:44.

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.

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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #928
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 5' (H903248-01)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18	
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16	
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01	
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89	
Total BTX	<0.300	0.300	09/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.2 % 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	64.0	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 95.6 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #928
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 10' (H903248-02)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.2 % 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	4560	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 96.0 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #928
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 15' (H903248-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEx	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.9 % 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	9330	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 98.6 % 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: 09/19/2019
 Reported: 09/24/2019
 Project Name: NEDU #928
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/18/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 20' (H903248-04)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.58	79.1	2.00	7.18		
Toluene*	<0.050	0.050	09/24/2019	ND	1.55	77.6	2.00	7.16		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.56	77.9	2.00	6.01		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.66	77.7	6.00	5.89		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.5 % 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	8800	16.0	09/20/2019	ND	432	108	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	09/20/2019	ND	205	103	200	0.584	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	205	103	200	2.08	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 97.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

September 25, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/19/19 17:05.

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.

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:	09/19/2019	Sampling Date:	09/19/2019
Reported:	09/25/2019	Sampling Type:	Soil
Project Name:	NMGS AU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: B 66 @ 12' 32.6120883-103.2727075 (H903252-01)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.2 % 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	1300	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 94.2 % 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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 67 @ 12' 32.6120324-103.2727400 (H903252-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.9 % 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	640	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 96.2 % 41-142

Surrogate: 1-Chlorooctadecane 96.8 % 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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 68 @ 12' 32.6120239-103.2727504 (H903252-03)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.3 % 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	496	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 90.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 69 32.6120188-103.2727537 (H903252-04)

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.8 % 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	192	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 97.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.4 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 70 32.6120217-103.2727578 (H903252-05)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 86.8 % 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	112	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.9 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 71 @ 12' 32.6120217-103.2727578 (H903252-06)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.1 % 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	464	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.2 % 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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 72 @ 12' 32.6119186-103.2727507 (H903252-07)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.2 % 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	496	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 93.6 % 41-142

Surrogate: 1-Chlorooctadecane 93.0 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 73 @ 12' 32.6119110-103.2727598 (H903252-08)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEX	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 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	48.0	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	<10.0	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 96.2 % 41-142

Surrogate: 1-Chlorooctadecane 98.4 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 74 @ 12' 32.6119056-103.2727762 (H903252-09)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84	
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35	
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74	
Total BTEX	<0.300	0.300	09/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.1 % 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	48.0	16.0	09/23/2019	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	09/20/2019	ND	199	99.7	200	0.456	
DRO >C10-C28*	14.1	10.0	09/20/2019	ND	177	88.5	200	0.973	
EXT DRO >C28-C36	<10.0	10.0	09/20/2019	ND					

Surrogate: 1-Chlorooctane 95.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 75 @ 12' 32.6119189-103.2727712 (H903252-10)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/23/2019	ND	1.81	90.7	2.00	3.84		
Toluene*	<0.050	0.050	09/23/2019	ND	1.77	88.4	2.00	3.35		
Ethylbenzene*	<0.050	0.050	09/23/2019	ND	1.76	88.2	2.00	4.48		
Total Xylenes*	<0.150	0.150	09/23/2019	ND	5.25	87.5	6.00	2.74		
Total BTEx	<0.300	0.300	09/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.0 % 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	96.0	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	<10.0	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 95.2 % 37.6-147

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Analytical Results For:

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

Received: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 76 @ 12' 32.6119612-103.2727239 (H903252-11)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673		
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227		
Total BTEx	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 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	784	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	74.9	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 89.1 % 37.6-147

Cardinal Laboratories

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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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 77 @ 12' 32.6119985-103.2727396 (H903252-12)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673		
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227		
Total BTX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 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	1140	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	190	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	87.3	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 90.2 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 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: 09/19/2019
 Reported: 09/25/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 78 @ 12' 32.6120200-103.2727286 (H903252-13)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/24/2019	ND	1.78	88.8	2.00	0.673		
Toluene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.403		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.54	77.1	2.00	0.245		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	4.77	79.5	6.00	0.227		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 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	1090	16.0	09/23/2019	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	09/23/2019	ND	201	100	200	7.30	
DRO >C10-C28*	<10.0	10.0	09/23/2019	ND	191	95.7	200	17.4	
EXT DRO >C28-C36	<10.0	10.0	09/23/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 93.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache Corp.		P.O. #:		BILL TO				ANALYSIS REQUEST					
Project Manager: Jeffery Brown		Company:											
Address:		City: Hobbs		State: NM		Zip: 88240							
Phone #:		Fax #:		Attn:		Address:							
Project #:		Project Owner:		City:		State:		Zip:					
Project Name:		Project Location: NECSAN 2119		Phone #:		Fax #:							
Sampler Name: Lee Curren		FOR LAB USE ONLY											
Lab I.D.		Sample I.D.		(G)RAB OR (Q)OMP		# CONTAINERS		MATRIX		PRESERV.		SAMPLING	
1 H903252		B. 06012. 32. 61208203		C 1		1		GROUNDWATER		WASTEWATER		SOIL	
2 B67		-103. 2727025		C 1		1		OIL		SLUDGE		OTHER :	
3 B68		-103. 2727400		C 1		1		ACID/BASE:		CE COOL		OTHER :	
4 B69		-103. 2727504		C 1		1		DATE		TIME			
5 B70		-103. 2727537		C 1		1		9/19		8:13		C/	
		-103. 2727572		C 1		1		9/19		11:30		EXT TPK	
								9/19		11:36		BTEX	
								9/19		11:42			
								9/19		11:57			

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Relinquished By: Lee Curren	Date: 9/19/19	Received By: Jennifer Delatorre	Date: 9/19/19
Time: 11:05	Time: 11:05	Time: 11:05	Time: 11:05

Delivered By: (Circle One) Observed Temp. °C 0.6 Corrected Temp. °C 1.0

Sampler - UPS - Bus - Other: FORM-006 R.3.0

Sample Condition Cool Intact Yes Yes No No

CHECKED BY: (Initials) T.O.

Turnaround Time: Standard Rush Bacteria (only) Sample Condition Cool Intact Yes Yes No No Corrected Temp. °C

REMARKS: Email Results to Jeff Brown

Verbal Result: Yes No Add'l Phone #: All Results are emailed. Please provide Email address:

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

September 27, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/24/19 7:30.

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.

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

Received:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	NMGSAU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 79 @ 12' 32.6119567-103.2727105 (H903272-01)

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 83.7 % 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	688	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	12.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 82.9 % 41-142

Surrogate: 1-Chlorooctadecane 87.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/27/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/20/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 80 @ 12' 32.6120273-103.2726743 (H903272-02)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.0 % 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	384	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.8 % 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: 09/24/2019
 Reported: 09/27/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/20/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 81 32.6121375-103.2726961 (H903272-03)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 84.3 % 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	224	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 89.8 % 41-142

Surrogate: 1-Chlorooctadecane 94.3 % 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: 09/24/2019
 Reported: 09/27/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/20/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 82 @ 12' 32.6120784-103.2726877 (H903272-04)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 84.9 % 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	416	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 86.4 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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

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".

Celey D. Keene, Lab Director/Quality Manager

ANALYSIS REQUEST

5.3
5.7



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

September 30, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/24/19 7:30.

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.

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:	09/24/2019	Sampling Date:	09/23/2019
Reported:	09/30/2019	Sampling Type:	Soil
Project Name:	NMGS AU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: W 13 32.61248 - 103.2727665 (H903273-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 82.4 % 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	48.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/30/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/30/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/30/2019	ND					

Surrogate: 1-Chlorooctane 85.7 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 14 32.6124795 - 103.2727571 (H903273-02)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.5 % 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	48.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/30/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/30/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/30/2019	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 91.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 15 32.6124631 - 103.2727360 (H903273-03)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.7 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 87.2 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 16 32.6124199 - 103.2727075 (H903273-04)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.4 % 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	96.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 17 32.6123939 - 103.2726937 (H903273-05)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.9 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/30/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/30/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/30/2019	ND					

Surrogate: 1-Chlorooctane 86.8 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 18 32.6123357 - 103.2726951 (H903273-06)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 80.2 % 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	48.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 89.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 19 32.6123092 - 103.2726910 (H903273-07)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 78.6 % 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	48.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 81.8 % 41-142

Surrogate: 1-Chlorooctadecane 85.7 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 20 32.6122682 - 103.2726873 (H903273-08)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 78.4 % 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	64.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 83.6 % 41-142

Surrogate: 1-Chlorooctadecane 90.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 21 32.6122346 - 103.2726930 (H903273-09)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83	
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 81.8 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 84.5 % 41-142

Surrogate: 1-Chlorooctadecane 89.8 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 22 32.6122019 - 103.2726934 (H903273-10)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 80.0 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 85.9 % 41-142

Surrogate: 1-Chlorooctadecane 90.2 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 23 32.6120985 - 103.2726837 (H903273-11)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.8 % 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	112	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 87.9 % 41-142

Surrogate: 1-Chlorooctadecane 91.6 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 26 32.6120011 - 103.2726267 (H903273-14)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.0 % 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	80.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND					

Surrogate: 1-Chlorooctane 83.2 % 41-142

Surrogate: 1-Chlorooctadecane 85.2 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 27 32.6119516 - 103.2726119 (H903273-15)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 79.4 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 83.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.1 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 28 32.6119220 - 103.272662 (H903273-16)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTEx	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.7 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	196	97.8	200	1.80	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	193	96.6	200	1.78	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 81.0 % 41-142

Surrogate: 1-Chlorooctadecane 85.3 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 29 32.6118895 - 103.2727079 (H903273-17)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/25/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.7 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 87.9 % 41-142

Surrogate: 1-Chlorooctadecane 99.6 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 30 32.6118697 - 103.2727410 (H903273-18)

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/26/2019	ND	1.89	94.7	2.00	1.83		
Toluene*	<0.050	0.050	09/26/2019	ND	1.88	94.2	2.00	1.39		
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.86	93.0	2.00	1.18		
Total Xylenes*	<0.150	0.150	09/26/2019	ND	5.52	92.1	6.00	0.956		
Total BTX	<0.300	0.300	09/26/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 80.9 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 91.3 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 31 32.6118570 - 103.2727785 (H903273-19)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 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	96.0	16.0	09/25/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 80.1 % 41-142

Surrogate: 1-Chlorooctadecane 86.0 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 32 32.6118898 - 103.2728308 (H903273-20)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.5 % 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	16.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 89.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.9 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 33 32.6118974 - 103.2728855 (H903273-21)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTX	<0.300	0.300	09/25/2019	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	16.0	16.0	09/25/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 85.4 % 41-142

Surrogate: 1-Chlorooctadecane 91.0 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 34 32.6119175 - 103.2729113 (H903273-22)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 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	64.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 92.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.4 % 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
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 35 32.6119641 - 103.2729160 (H903273-23)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTEx	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 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	32.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 94.7 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 36 32.6120036 - 103.2729210 (H903273-24)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 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	48.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: W 37 32.6120561 - 103.2729204 (H903273-25)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.9 % 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	48.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.5 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 83 @ 12' 32.6120968-103.2726927 (H903273-27)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTEx	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	112	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 94.2 % 41-142

Surrogate: 1-Chlorooctadecane 97.2 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 84 @ 12' 32.6120595-103.2726910 (H903273-28)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 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	64.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 96.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.2 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 85 @ 12' 32.6120426-103.2726833 (H903273-29)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTEX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 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	80.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 91.0 % 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:	09/24/2019	Sampling Date:	09/23/2019
Reported:	09/30/2019	Sampling Type:	Soil
Project Name:	NMGS AU #2119	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Mike Snyder
Project Location:	NOT GIVEN		

Sample ID: B 86 @ 12' 32.6119847 - 103.2726350 (H903273-30)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTEX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.4 % 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	80.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 94.9 % 41-142

Surrogate: 1-Chlorooctadecane 96.6 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Mike Snyder

Sample ID: B 87 @ 12' 32.6119386 - 103.2726686 (H903273-31)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302		
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27		
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902		
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683		
Total BTX	<0.300	0.300	09/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.5 % 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	64.0	16.0	09/25/2019	ND	400	100	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	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	41.5	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 98.1 % 41-142

Surrogate: 1-Chlorooctadecane 98.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

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".

Celey D. Keene, Lab Director/Quality Manager

Page 31 of 37



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: **Apex Corp.**

Project Manager: **Jeffrey Brown**

Address:

City: **Hobbs**

Phone #: _____

Project Name: _____

State: **NM**

Fax #: _____

Project Owner: _____

City: _____

State: _____

Zip: **88240**

Attn: _____

Address: _____

City: _____

State: _____

Phone #: _____

Zip: _____

Project Location: **NM Gas Rn 2119**

Sample Name: **Joe Quiscuda Jr.**

FOR LAB USE ONLY

Lab I.D. _____

Sample I.D. _____

	(G)RAB OR (C)IMP.	# CONTAINERS	MATRIX						PRESERV.	DATE	TIME	SAMPLING
			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :				
1	W13 32.61248	-103.2727465	C1							9/23 11:30	EXT TPH	DTX
2	W14 32.6124795	-103.272571	C1							9/23 13:32		
3	W15 32.6124631	-103.2727360	C1							9/23 13:40		
4	W16 32.6124144	-103.2727075	C1							9/23 11:42		
5	W17 32.6123939	-103.2726937	C1							9/23 11:54		

Relinquished By: _____

Relinquished By: _____

Date: **9/24**

Time: **7:30**

Date: _____

Time: _____

Received By: _____

Received By: _____

Delivered By: (Circle One) _____

Observed Temp. °C **5.3**

Corrected Temp. °C **5.7**

Sample Condition

Checked By: _____

Turnaround Time: _____

Standard **Rush**

Bacteria (only)

Cool Intact

Thermometer ID #97

Correction Factor +0.4 °C

Sample Condition

Observed Temp. °C **5.3**

Corrected Temp. °C **6.2**

REMARKS: **Emergency Results to Jeff Brown**

Verbal Result: ☐ Yes ☐ No ☐ Add'l Phone #: _____

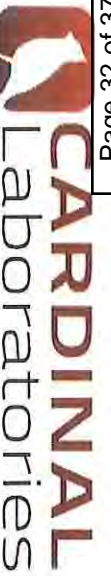
All Results are emailed. Please provide Email address: _____

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BILL TO

ANALYSIS REQUEST

26 JO 23 ebgd



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Apache</u>		P.O. #:		BILL TO								ANALYSIS REQUEST																													
Project Manager: <u>Jedney Brown</u>		Company:																																							
Address:		Attn:																																							
City: <u>Lubbock</u>		State: <u>NM</u> Zip: <u>89240</u>																																							
Phone #:		Address:																																							
Project #:		City:																																							
Project Name:		State:																																							
Project Location: <u>Nueces 2119</u>		Zip:																																							
Sampler Name: <u>Joe Quisada Jr.</u>		Phone #:																																							
Fax #:		Fax #:																																							
FOR LAB USE ONLY		Matrix		PRESERV		SAMPLING																																			
		(G)RAB OR (C)OM?		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		CRY COOL		OTHER:		DATE		TIME															
Lab I.D.		Sample I.D.																																							
<u>A4903273</u>		<u>W18 32.612 3357</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>9/23</u>		<u>11:44</u>		<u>C</u>		<u>EX+TPH</u>		<u>BTEX</u>									
<u>6</u>		<u>-103.272 4951</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>11:48</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>									
<u>7</u>		<u>W14 32.612 3092</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>11:50</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>									
<u>8</u>		<u>W20 32.612 2682</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>11:50</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>									
<u>9</u>		<u>W21 32.612 2346</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>11:52</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>									
<u>10</u>		<u>W22 32.612 2019</u>		<u>C 1</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>11:54</u>		<u>/</u>		<u>/</u>		<u>/</u>		<u>/</u>									
<u>103.272 4934</u>		<u>9/28</u>																																							

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Relinquished By: <u>Joe Quisada</u>	Date: <u>9/24</u>	Received By: <u>Mike Dusk</u>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Add'l Phone #:
Relinquished By: <u>Joe Quisada</u>	Time: <u>7:31</u>	Received By: <u>Mike Dusk</u>	All Results are emailed. Please provide Email address:
Date: <u>9/24</u>	Time: <u>7:31</u>	Received By: <u>Mike Dusk</u>	REMARKS:
Delivered By: (Circle One)	Observed Temp. °C <u>5.3</u>	Corrected Temp. °C <u>5.7</u>	Turnaround Time: <u>Standard</u> <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other: <u>FORM-006 R 3.0</u>	Sample Condition <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: (Initials)	Bacteria (only) Sample Condition <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No
			Observed Temp. °C <u>5.8</u>
			Corrected Temp. °C <u>5.7</u>

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apacch		BILL TO		ANALYSIS REQUEST																															
Project Manager: Jeffrey Brown		P.O. #:																																	
Address:		Company:																																	
City: Hobbs		Attn:																																	
State: NM		Address:																																	
Zip: 88001		City:																																	
Phone #:		State:																																	
Fax #:		Zip:																																	
Project #:																																			
Project Name:																																			
Project Location: Wichita 819		Phone #:																																	
Sampler Name: Joe Quisada Jr.		Fax #:																																	
FOR LAB USE ONLY																																			
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP		# CONTAINERS		MATRIX		PRESERV.		SAMPLING																							
				GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		(C) / COOL		OTHER :		DATE		TIME											
H903213																						9/23		11:56											
11		W03 32.6180985		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
12		W04 32.6180621		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
13		W05 32.6180527		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
14		W06 32.6180011		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
15		W07 32.6180816		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
16		W08 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
17		W09 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
18		W10 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
19		W11 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
20		W12 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
21		W13 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
22		W14 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
23		W15 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
24		W16 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
25		W17 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
26		W18 32.6180819		C1		1		✓		✓		✓		✓		✓		✓		✓		✓		✓											
27		W19 32.6180819		C1		1		✓		✓																									

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

4

Company Name: Apache		P.O. #:		BILL TO				ANALYSIS REQUEST							
Project Manager: Jeffrey Brown		Company:													
Address:															
City: Albuquerque		State: NM		Zip: 88240		Attn:									
Phone #:		Fax #:		Address:		City:									
Project #:		Project Owner:		State:		Zip:									
Project Name:		Phone #:													
Project Location: ULSAR 2119		Fax #:													
Sampler Name: Joe Quiscales															
FOR LAB USE ONLY															
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMF		# CONTAINERS		MATRIX		PRESERV		SAMPLING			
								GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :		ACID/BASE: (C)ICE / COOL OTHER :		DATE		TIME	
4903373		W 28 32.6119220		0		1		✓		9/23		15:30		Q	
14		-103.272662		0		1		✓		15:32		✓		EXT TPH	
17		W 29 32.6118895		0		1		✓		15:34		✓		13TEX	
18		-103.2727079		0		1		✓		15:36		✓			
19		W 30 32.6118647		0		1		✓		15:38		✓			
20		-103.2727410		0		1		✓		15:38		✓			
21		W 31 32.6118670		0		1		✓		15:38		✓			
22		-103.2727785		0		1		✓		15:38		✓			
23		W 32.6118898		0		1		✓		15:38		✓			
24		-103.2728308		0		1		✓		15:38		✓			

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Relinquished By: Joe Quiscales	Date: 9/24	Received By: Michael Smith	Date: 9/24	Time: 7:32	Time: 7:32	Remarks: Email to Jeff Brown		
Delivered By: (Circle One)	Observed Temp. °C	Corrected Temp. °C	Sample Condition	Checked By: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	5.3	5.7	Cool Intact		Thermometer ID #97	Rush	Cool Intact	Observed Temp. °C
FORM-006 R 3.0			Yes No		Correction Factor + 0.4 °C		Yes No	Corrected Temp. °C
								5.8
								5.7

Page 35 of 37



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Aquatic				BILL TO				ANALYSIS REQUEST																
Project Manager: Jeffery Brown				P.O. #:																				
Address:				Company:																				
City: Hobbs				Attn:																				
State: NM				Address:																				
Phone #:				City:																				
Project #:				State:																				
Project Owner:				Zip:																				
Project Location: Westview 211A				Phone #:																				
Sample Name: Joe Cline's hole				Fax #:																				
FOR LAB USE ONLY																								
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						PRESERV	SAMPLING													
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE: ICE / COOL	OTHER :	DATE	TIME	C	EXT TPH	BTEX								
H903273	W33. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:40	/	-	-								
21	W34. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:42	/	-	-								
22	W35. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:44	/	-	-								
23	W36. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:46	/	-	-								
24	W37. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:48	/	-	-								
25	W38. 82.6118474 -103. 2729204	C	1	/						1		9/23	15:50	/	-	-								

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Relinquished By: [Signature]	Date: 9/24	Received By: [Signature]	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:
Refrained By: [Signature]	Date: 9/23	Received By: [Signature]	All Results are emailed. Please provide Email address:
REMARKS: Council Jeffery Brown			

Delivered By: (Circle One) Sampler - UPS - Bus - Other: FORM-006 R 3.0	Observed Temp. °C: 5.3 Corrected Temp. °C: 5.7	Sample Condition: Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials)	Turnaround Time: Standard Rush <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	Bacteria (only) Sample Condition: Cool Intact Observed Temp. °C: 5.8 Corrected Temp. °C: 5.7
---	---	--	----------------------------------	--	---

CARDINAL
Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Released to Imaging: 5/9/2025 9:33:42 AM



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

September 30, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NMGSAU #2119

Enclosed are the results of analyses for samples received by the laboratory on 09/24/19 16:15.

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.

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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGSAU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/24/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 24 32.6120392 - 103.2726575 (H903288-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.96	98.0	2.00	4.45	
Toluene*	<0.050	0.050	09/26/2019	ND	1.73	86.7	2.00	3.99	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.73	86.5	2.00	3.91	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	5.31	88.4	6.00	3.67	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 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	352	16.0	09/26/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	192	95.8	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	188	94.0	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 99.3 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/24/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 38 32.6121266 - 103.2729116 (H903288-02)

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.96	98.0	2.00	4.45	
Toluene*	<0.050	0.050	09/26/2019	ND	1.73	86.7	2.00	3.99	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.73	86.5	2.00	3.91	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	5.31	88.4	6.00	3.67	
Total BTX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	160	16.0	09/26/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	192	95.8	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	188	94.0	200	2.83	
EXT DRO >C28-C36	10.1	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 96.3 % 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: 09/24/2019
 Reported: 09/30/2019
 Project Name: NMGS AU #2119
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/24/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W 25 32.6120527 - 103.2726072 (H903288-03)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/26/2019	ND	1.96	98.0	2.00	4.45		
Toluene*	<0.050	0.050	09/26/2019	ND	1.73	86.7	2.00	3.99		
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.73	86.5	2.00	3.91		
Total Xylenes*	<0.150	0.150	09/26/2019	ND	5.31	88.4	6.00	3.67		
Total BTEx	<0.300	0.300	09/26/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	64.0	16.0	09/26/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	192	95.8	200	1.40	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	188	94.0	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane 90.7 % 41-142

Surrogate: 1-Chlorooctadecane 98.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

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

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager

Appendix F

Boring Logs

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 10:29 Finish: 11:45 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: TOC Elevation:		NUMBER	RECOVERY	DEPTH	REMARKS
										BACKGROUND PID READING
	0	Sand, 7.5YR, 6/5 to 6/4, Well Sorted, Very Fine Grained Quartz Sand, Light Brown	ML							SOIL : _____ PPM SOIL : _____ PPM
	5	Caliche, 7.5YR, 8/3, Pink, 2-10mm Subangular Clast Inclusions, Fine Grained	Caliche							
	10	Silty Sand, 7.5YR, 8/4, Pink, Moderately Sorted with Subangular 1-6mm Clast Inclusions								
	15	7.5YR, 8/6, Reddish Yellow, Moderately Sorted with Subangular 2-6mm Clast Inclusions	ML							
	20									
	25									
	30	TD: 30'								

☐ ONE CONTINUOUS AUGER SAMPLER

☐ STANDARD PENETRATION TEST

☐ UNDISTURBED SAMPLE

☐ WATER TABLE (24 HRS)

☐ WATER TABLE (TIME OF BORING)

☐ LABORATORY TEST LOCATION

☐ PENETROMETER (TONS/ SQ. FT)

☐ NR NO RECOVERY

JOB NUMBER : 19-0112-51 / Apache Corp.

HOLE DIAMETER : 2"

LOCATION : NMGSAU 2102

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson & Associates, Inc.
Environmental Consultants

DRILL DATE :
03-11-2020

BORING NUMBER :
TMW-1

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 12:36 Finish: 1:09 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: TOC Elevation:		NUMBER	RECOVERY	DEPTH	REMARKS
	0	Sand, 7.5YR, 6/5 to 6/4, Well Sorted, Very Fine Quartz Grained Sand, Light Brown	ML							BACKGROUND PID READING SOIL: _____ PPM SOIL: _____ PPM
	5	Caliche, 7.5YR, 8/3, Pink, 2-10mm Subangular Clast Inclusions, Fine Grained	Caliche							
	10	Silty Sand, 7.5YR, 8/4, Pink, Moderately Sorted with Subangular 1-6mm Clast Inclusions			8.05					
	15	7.5YR, 8/6, Reddish Yellow, Moderately Sorted with Subangular 2-6mm Clast Inclusions	ML		10.05					
	20									
	25									
	30	TD: 30'			29.30 29.73 30.00					

☐ ONE CONTINUOUS AUGER SAMPLER
☐ STANDARD PENETRATION TEST
☐ UNDISTURBED SAMPLE
☐ WATER TABLE (24 HRS)

☐ WATER TABLE (TIME OF BORING)
☐ LABORATORY TEST LOCATION
☐ PENETROMETER (TONS/ SQ. FT)
☐ NO RECOVERY

JOB NUMBER : 19-0112-51 / Apache Corp.

HOLE DIAMETER : 2"

LOCATION : NMGSAU 2102

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson & Associates, Inc.
 Environmental Consultants

DRILL DATE :
 03-11-2020

BORING NUMBER :
 TMW-2

Appendix G
Groundwater Sample Laboratory Reports



Certificate of Analysis Summary 655568

Larson and Associates, Inc., Midland, TX

Project Name: Apache-NM GSAU 2102

Project Id: 19-0112-51

Contact: Mark Larson

Project Location:

Date Received in Lab: Fri 03.13.2020 08:45

Report Date: 03.19.2020 14:19

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	655568-001	655568-002	655568-003	655568-004		
	<i>Field Id:</i>	MW-2	DUP-1	TMW-2	TMW-1		
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER	WATER	WATER	WATER		
	<i>Sampled:</i>	03.12.2020 11:25	03.12.2020 11:30	03.12.2020 12:15	03.12.2020 13:00		
BTEX by EPA 8021B SUB: T104704219-19-21	<i>Extracted:</i>	03.17.2020 15:30	03.17.2020 15:30	03.17.2020 15:30	03.17.2020 15:30		
	<i>Analyzed:</i>	03.17.2020 21:04	03.17.2020 22:41	03.17.2020 23:06	03.17.2020 23:30		
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Toluene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Ethylbenzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
o-Xylene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Total Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Total BTEX		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100		
Chloride by EPA 300	<i>Extracted:</i>	03.13.2020 18:30	03.13.2020 18:30	03.13.2020 18:30	03.13.2020 18:30		
	<i>Analyzed:</i>	03.13.2020 23:22	03.13.2020 22:14	03.13.2020 22:21	03.13.2020 22:28		
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		230 2.50	223 2.50	423 5.00	360 5.00		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Holly Taylor
Project Manager



Analytical Report 655568

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Apache-NM GSAU 2102

19-0112-51

03.19.2020

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



03.19.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: XENCO Report No(s): **655568**
Apache-NM GSAU 2102
Project Address:

Mark Larson :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 655568. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 655568 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads 'Holly Taylor'. The signature is fluid and cursive, with the first name 'Holly' and last name 'Taylor' clearly distinguishable.

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 655568

Larson and Associates, Inc., Midland, TX

Apache-NM GSAU 2102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	03.12.2020 11:25		655568-001
DUP-1	W	03.12.2020 11:30		655568-002
TMW-2	W	03.12.2020 12:15		655568-003
TMW-1	W	03.12.2020 13:00		655568-004

**CASE NARRATIVE***Client Name: Larson and Associates, Inc.**Project Name: Apache-NM GSAU 2102*

Project ID: 19-0112-51
Work Order Number(s): 655568

Report Date: 03.19.2020
Date Received: 03.13.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120085 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7699174-1-BKS,7699174-1-BLK,655568-001 S,655568-001 SD,655568-001,655568-003,655568-002.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7699174-1-BKS,7699174-1-BLK,7699174-1-BSD,655568-001 S,655568-001 SD,655568-003,655568-004,655568-002,655568-001.

Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 655568-001, -002, -003, -004

Lab Sample ID 655568-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 655568-001, -002, -003, -004.

The Laboratory Control Sample for m,p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results 655568

Larson and Associates, Inc., Midland, TX

Apache-NM GSAU 2102

Sample Id: **MW-2**
Lab Sample Id: 655568-001

Matrix: Water
Date Collected: 03.12.2020 11:25

Date Received: 03.13.2020 08:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.13.2020 18:30

Seq Number: 3119665

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	230	2.50	mg/L	03.13.2020 23:22		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.17.2020 15:30

Seq Number: 3120085

SUB: T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/L	03.17.2020 21:04	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/L	03.17.2020 21:04	UF	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	03.17.2020 21:04	UF	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/L	03.17.2020 21:04	UXF	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	03.17.2020 21:04	UXF	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	03.17.2020 21:04	U	1
Total BTEX		<0.00100	0.00100	mg/L	03.17.2020 21:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
a,a,a-Trifluorotoluene	98-08-8	124	%	66-120	03.17.2020 21:04	**
4-Bromofluorobenzene	460-00-4	124	%	67-120	03.17.2020 21:04	**



Certificate of Analytical Results 655568

Larson and Associates, Inc., Midland, TX

Apache-NM GSAU 2102

Sample Id: **DUP-1**
Lab Sample Id: 655568-002

Matrix: Water
Date Collected: 03.12.2020 11:30

Date Received: 03.13.2020 08:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.13.2020 18:30

Seq Number: 3119665

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	223	2.50	mg/L	03.13.2020 22:14		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.17.2020 15:30

Seq Number: 3120085

SUB: T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/L	03.17.2020 22:41	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1
Total BTEX		<0.00100	0.00100	mg/L	03.17.2020 22:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
a,a,a-Trifluorotoluene	98-08-8	123	%	66-120	03.17.2020 22:41	**
4-Bromofluorobenzene	460-00-4	125	%	67-120	03.17.2020 22:41	**



Certificate of Analytical Results 655568

Larson and Associates, Inc., Midland, TX

Apache-NM GSAU 2102

Sample Id: **TMW-2**
Lab Sample Id: 655568-003

Matrix: Water
Date Collected: 03.12.2020 12:15

Date Received: 03.13.2020 08:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.13.2020 18:30

Seq Number: 3119665

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	423	5.00	mg/L	03.13.2020 22:21		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.17.2020 15:30

Seq Number: 3120085

SUB: T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/L	03.17.2020 23:06	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1
Total BTEX		<0.00100	0.00100	mg/L	03.17.2020 23:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
a,a,a-Trifluorotoluene	98-08-8	129	%	66-120	03.17.2020 23:06	**
4-Bromofluorobenzene	460-00-4	129	%	67-120	03.17.2020 23:06	**



Certificate of Analytical Results 655568

Larson and Associates, Inc., Midland, TX

Apache-NM GSAU 2102

Sample Id: **TMW-1**
Lab Sample Id: 655568-004

Matrix: Water
Date Collected: 03.12.2020 13:00

Date Received: 03.13.2020 08:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 03.13.2020 18:30

Seq Number: 3119665

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	360	5.00	mg/L	03.13.2020 22:28		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.17.2020 15:30

Seq Number: 3120085

SUB: T104704219-19-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/L	03.17.2020 23:30	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1
Total BTEX		<0.00100	0.00100	mg/L	03.17.2020 23:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
a,a,a-Trifluorotoluene	98-08-8	126	%	66-120	03.17.2020 23:30	**
4-Bromofluorobenzene	460-00-4	96	%	67-120	03.17.2020 23:30	



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Larson and Associates, Inc.
Apache-NM GSAU 2102

Analytical Method: Chloride by EPA 300

Seq Number: 3119665

MB Sample Id: 7698877-1-BLK

Matrix: Water

LCS Sample Id: 7698877-1-BKS

Prep Method: E300P

Date Prep: 03.13.2020

LCSD Sample Id: 7698877-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	0.0549	25.0	25.1	100	25.2	101	90-110	0	20	mg/L	03.13.2020 21:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3119665

Parent Sample Id: 655568-001

Matrix: Water

MS Sample Id: 655568-001 S

Prep Method: E300P

Date Prep: 03.13.2020

MSD Sample Id: 655568-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	230	125	352	98	351	97	90-110	0	20	mg/L	03.13.2020 23:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3119665

Parent Sample Id: 655579-001

Matrix: Drinking Water

MS Sample Id: 655579-001 S

Prep Method: E300P

Date Prep: 03.13.2020

MSD Sample Id: 655579-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.33	25.0	32.6	101	32.5	101	90-110	0	20	mg/L	03.13.2020 21:59	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120085

MB Sample Id: 7699174-1-BLK

Matrix: Water

LCS Sample Id: 7699174-1-BKS

Prep Method: SW5030B

Date Prep: 03.17.2020

LCSD Sample Id: 7699174-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0994	99	0.0982	98	74-120	1	20	mg/L	03.17.2020 19:01	
Toluene	<0.00100	0.100	0.106	106	0.103	103	74-120	3	20	mg/L	03.17.2020 19:01	
Ethylbenzene	<0.00100	0.100	0.109	109	0.106	106	74-120	3	20	mg/L	03.17.2020 19:01	
m,p-Xylenes	<0.00200	0.200	0.219	110	0.212	106	73-120	3	25	mg/L	03.17.2020 19:01	
o-Xylene	<0.00100	0.100	0.108	108	0.106	106	73-120	2	25	mg/L	03.17.2020 19:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	124	**	124	**	121	**	66-120	%	03.17.2020 19:01
4-Bromofluorobenzene	123	**	123	**	118		67-120	%	03.17.2020 19:01

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * | (C - E) / (C + E) |$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.
Apache-NM GSAU 2102

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120085

Parent Sample Id: 655568-001

Matrix: Water

MS Sample Id: 655568-001 S

Prep Method: SW5030B

Date Prep: 03.17.2020

MSD Sample Id: 655568-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0186	19	0.0234	23	15-147	23	25	mg/L	03.17.2020 21:28	
Toluene	<0.00100	0.100	0.0187	19	0.0242	24	11-147	26	25	mg/L	03.17.2020 21:28	F
Ethylbenzene	<0.00100	0.100	0.0186	19	0.0254	25	10-149	31	25	mg/L	03.17.2020 21:28	F
m,p-Xylenes	<0.00200	0.200	0.0295	15	0.0421	21	62-124	35	25	mg/L	03.17.2020 21:28	XF
o-Xylene	<0.00100	0.100	0.0180	18	0.0249	25	62-124	32	25	mg/L	03.17.2020 21:28	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	123	**	122	**	66-120	%	03.17.2020 21:28
4-Bromofluorobenzene	123	**	124	**	67-120	%	03.17.2020 21:28

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 3/13/2020 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Apache - NMSA 2102
LAI PROJECT #: 19-012-S1 COLLECTOR: 20105

055508
CHAIN-OF-CUSTODY
NO 0892

TRRP report?
☐ Yes ☒ No

S=SOIL
W=WATER
A=AIR
P=PAINT
SL=SLUDGE
OT=OTHER

TIME ZONE:
Time zone/State:

MST

Field
Sample I.D.

Lab #

Date

Time

Matrix

of Containers

PRESERVATION
HCl
HNO₃
H₂SO₄ ☐ NaOH ☐
ICE
UNPRESERVED

ANALYSES
BTEX ☒ MTBE ☐
TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐
GASOLINE MOD 8015 ☐
DIESEL - MOD 8015 ☐
OIL - MOD 8015 ☐
VOC 8260 ☐
SVOC 8270 ☐
8081 PESTICIDES ☐ PAH 8270 ☐ HOLDPAH ☐
8082 PESTICIDES ☐ 8151 HERBICIDES ☐
TBLP - PCBs ☐
TCLP - METALS (RCRA) ☐ TCLP VOC ☐
TOTAL METALS (RCRA) ☐ Semi-VOC ☐
LEAD - TOTAL ☐ HERB ☐ OTHER LIST ☐
RCI ☐ TOX ☐ FLASHPOINT ☐
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
pH ☐ HEXAVALENT CHROMIUM ☐ TCLP ☐
EXPLOSIVES ☐ PEROXIDE ☐
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

MW-2
Dup-1
TMW-2
TMW-1

3/13/20

11:25

W

8

X

X

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TOTAL

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 53.50 THERM#: 19

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY: Xenco

Inter-Office Shipment

IOS Number : **60346**

Date/Time: 03.16.2020

Created by: Allison Johnson

Please send report to: Holly Taylor

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave

Lab# To: **Lubbock**

Air Bill No.: 770044520695

E-Mail: holly.taylor@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
655568-001	W	MW-2	03.12.2020 11:25	SW8021B	BTEX by EPA 8021B	03.19.2020	03.26.2020	HTA	BR4FBZ BZ BZME EBZ	
655568-002	W	DUP-1	03.12.2020 11:30	SW8021B	BTEX by EPA 8021B	03.19.2020	03.26.2020	HTA	BR4FBZ BZ BZME EBZ	
655568-003	W	TMW-2	03.12.2020 12:15	SW8021B	BTEX by EPA 8021B	03.19.2020	03.26.2020	HTA	BR4FBZ BZ BZME EBZ	
655568-004	W	TMW-1	03.12.2020 13:00	SW8021B	BTEX by EPA 8021B	03.19.2020	03.26.2020	HTA	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By:



Allison Johnson

Date Relinquished: 03.16.2020

Received By:



Ashley Derstine

Date Received: 03.17.2020

Cooler Temperature: 2.9



Inter Office Report- Sample Receipt Checklist

Sent To: Lubbock

IOS #: 60346

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Allison Johnson

Date Sent: 03.16.2020 03.33 PM

Received By: Ashley Derstine

Date Received: 03.17.2020 10.45 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashley Derstine

Date: 03.17.2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 03.13.2020 08.45.00 AM

Work Order #: 655568

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst: AJA

PH Device/Lot#: 10BDH1991

Checklist completed by:



Brianna Teel

Date: 03.13.2020

Checklist reviewed by:



Holly Taylor

Date: 03.19.2020

Certificate of Analysis Summary 667700



Larson and Associates, Inc., Midland, TX

Project Name: NMGSAU #2102

Project Id: 19-0112-51

Date Received in Lab: Tue 07.21.2020 08:35

Contact: Mark Larson

Report Date: 07.28.2020 16:46

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	667700-001	667700-002	667700-003	667700-004		
	Field Id:	MW-2	DUP-1	TMW-1	TMW-2		
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	07.20.2020 11:20	07.20.2020 11:40	07.20.2020 12:40	07.20.2020 12:50		
BTEX by EPA 8021B	Extracted:	07.25.2020 14:45	07.25.2020 14:45	07.25.2020 14:45	07.25.2020 14:45		
	Analyzed:	07.26.2020 05:32	07.26.2020 05:53	07.26.2020 06:13	07.26.2020 06:33		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	07.22.2020 16:50	07.22.2020 16:50	07.22.2020 16:50	07.22.2020 16:50		
	Analyzed:	07.24.2020 09:55	07.24.2020 10:00	07.24.2020 10:05	07.24.2020 10:10		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		231 2.50	242 2.50	432 5.00	664 5.00		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 667700

for

Larson and Associates, Inc.

Project Manager: Mark Larson

NMGSAU #2102

19-0112-51

07.28.2020

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.28.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **667700**
NMGSAU #2102
Project Address:

Mark Larson :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 667700. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 667700 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 667700

Larson and Associates, Inc., Midland, TX

NMGSAU #2102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	07.20.2020 11:20		667700-001
DUP-1	W	07.20.2020 11:40		667700-002
TMW-1	W	07.20.2020 12:40		667700-003
TMW-2	W	07.20.2020 12:50		667700-004



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: NMGSAU #2102

Project ID: 19-0112-51
Work Order Number(s): 667700

Report Date: 07.28.2020
Date Received: 07.21.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 667700

Larson and Associates, Inc., Midland, TX NMGSAU #2102

Sample Id: **MW-2** Matrix: Water Date Received: 07.21.2020 08:35
 Lab Sample Id: 667700-001 Date Collected: 07.20.2020 11:20
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 07.22.2020 16:50
 Seq Number: 3132512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	231	2.50	mg/L	07.24.2020 09:55		5

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: KTL Date Prep: 07.25.2020 14:45
 Seq Number: 3132608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	07.26.2020 05:32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1
Total BTEX		<0.00200	0.00200	mg/L	07.26.2020 05:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.26.2020 05:32	
4-Bromofluorobenzene	460-00-4	95	%	70-130	07.26.2020 05:32	



Certificate of Analytical Results 667700

Larson and Associates, Inc., Midland, TX

NMGSAU #2102

Sample Id: **DUP-1**
Lab Sample Id: 667700-002

Matrix: Water
Date Collected: 07.20.2020 11:40

Date Received: 07.21.2020 08:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.22.2020 16:50

Seq Number: 3132512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	242	2.50	mg/L	07.24.2020 10:00		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.25.2020 14:45

Seq Number: 3132608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	07.26.2020 05:53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1
Total BTEX		<0.00200	0.00200	mg/L	07.26.2020 05:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	07.26.2020 05:53	
4-Bromofluorobenzene	460-00-4	92	%	70-130	07.26.2020 05:53	



Certificate of Analytical Results 667700

Larson and Associates, Inc., Midland, TX

NMGSAU #2102

Sample Id: **TMW-1**
Lab Sample Id: 667700-003

Matrix: Water
Date Collected: 07.20.2020 12:40

Date Received: 07.21.2020 08:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.22.2020 16:50

Seq Number: 3132512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	432	5.00	mg/L	07.24.2020 10:05		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.25.2020 14:45

Seq Number: 3132608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	07.26.2020 06:13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1
Total BTEX		<0.00200	0.00200	mg/L	07.26.2020 06:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.26.2020 06:13	
4-Bromofluorobenzene	460-00-4	93	%	70-130	07.26.2020 06:13	



Certificate of Analytical Results 667700

Larson and Associates, Inc., Midland, TX

NMGSAU #2102

Sample Id: **TMW-2**
Lab Sample Id: 667700-004

Matrix: Water
Date Collected: 07.20.2020 12:50

Date Received: 07.21.2020 08:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.22.2020 16:50

Seq Number: 3132512

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	664	5.00	mg/L	07.24.2020 10:10		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.25.2020 14:45

Seq Number: 3132608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	07.26.2020 06:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1
Total BTEX		<0.00200	0.00200	mg/L	07.26.2020 06:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.26.2020 06:33	
4-Bromofluorobenzene	460-00-4	99	%	70-130	07.26.2020 06:33	

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Larson and Associates, Inc.
 NMGSAU #2102
Analytical Method: Chloride by EPA 300

Seq Number: 3132512

MB Sample Id: 7707864-1-BLK

Matrix: Water

LCS Sample Id: 7707864-1-BKS

Prep Method: E300P

Date Prep: 07.22.2020

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Chloride	<0.500	25.0	26.0	104	90-110	mg/L	07.24.2020 08:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3132512

Parent Sample Id: 667828-001

Matrix: Drinking Water

MS Sample Id: 667828-001 S

Prep Method: E300P

Date Prep: 07.22.2020

MSD Sample Id: 667828-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.8	25.0	40.2	110	41.3	114	90-110	3	20	mg/L	07.24.2020 09:02	X

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132608

MB Sample Id: 7708080-1-BLK

Matrix: Water

LCS Sample Id: 7708080-1-BKS

Prep Method: SW5030B

Date Prep: 07.25.2020

LCSD Sample Id: 7708080-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.0921	92	70-130	2	25	mg/L	07.26.2020 03:11	
Toluene	<0.00200	0.100	0.0903	90	0.0900	90	70-130	0	25	mg/L	07.26.2020 03:11	
Ethylbenzene	<0.00200	0.100	0.0919	92	0.0906	91	70-130	1	25	mg/L	07.26.2020 03:11	
m,p-Xylenes	<0.00400	0.200	0.180	90	0.178	89	70-130	1	25	mg/L	07.26.2020 03:11	
o-Xylene	<0.00200	0.100	0.0924	92	0.0898	90	70-130	3	25	mg/L	07.26.2020 03:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		101		103		70-130	%	07.26.2020 03:11
4-Bromofluorobenzene	84		98		98		70-130	%	07.26.2020 03:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132608

Parent Sample Id: 667805-005

Matrix: Water

MS Sample Id: 667805-005 S

Prep Method: SW5030B

Date Prep: 07.25.2020

MSD Sample Id: 667805-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0952	95	0.0921	92	70-130	3	25	mg/L	07.26.2020 03:51	
Toluene	<0.00200	0.100	0.0929	93	0.0929	93	70-130	0	25	mg/L	07.26.2020 03:51	
Ethylbenzene	<0.00200	0.100	0.0931	93	0.0917	92	70-130	2	25	mg/L	07.26.2020 03:51	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.181	91	70-130	1	25	mg/L	07.26.2020 03:51	
o-Xylene	<0.00200	0.100	0.0937	94	0.0914	91	70-130	2	25	mg/L	07.26.2020 03:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		70-130	%	07.26.2020 03:51
4-Bromofluorobenzene	98		94		70-130	%	07.26.2020 03:51

MS/MSD Percent Recovery
 Relative Percent Difference
 LCS/LCSD Recovery
 Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

507 N. Mariefeld, Ste. 200
Midland, TX 79701
432-687-0901

CHAIN-OF-CUSTODY

204N

DATE: 7/20/20 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: NMGS4V #2102
LAI PROJECT #: 19-0112-S1 COLLECTOR: TJ+BS

S=SOIL
W=WATER
A=AIR
P=PAINT
SL=SLUDGE
OT=OTHER

PRESERVATION

Lab #	Date	Time	Matrix
-------	------	------	--------

of Containers

HCl ☒ ☒ ☒ ☒

HNO₃ ☐

H₂SO₄ ☐ NaOH ☐

ICE ☒ ☒ ☒

UNPRESSERVED

ANALYSES
TEXT MTBF
PPH 4

ANALYSES

BTEX ☐ MTBE ☐ TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐
GASOLINE MOD 8015 ☐
DIESEL - MOD 8015 ☐
OIL - MOD 8015 ☐
VOC 8260 ☐
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
8081 PESTICIDES ☐ 8151 HERBICIDES ☐
8082 PCBs ☐
TBLP - METALS (RCRA) ☐ TCLP VOC ☐
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐
TOTAL METALS (RCRA) ☐ OTHER LIST ☐
LEAD - TOTAL ☐ D.W 200.8 ☐ TCLP ☐
RCI ☐ TOX ☐ FLASHPOINT ☐
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
pH ☐ HEXAVALENT CHROMIUM ☐
EXPLOSIVES ☐ PECHLORATE ☐
CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NO.

FIELD NOTES

[illegible]

RECEIVED BY: (signature)

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

LABORATORY: XenCO

TURN AROUND TIME

LABORATORY USE ONLY

RECEIVING TEMP. 67.6 THERM#

CUSTODY SEALS - ☒ BROKEN ☒ INTACT ☐ NOT USED

CARRIER BILL #

☐ HAND DELIVERED

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 07.21.2020 08.35.00 AM**Work Order #:** 667700**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: AJA

PH Device/Lot#: 10BDH1991

Checklist completed by: Brianna Teel Date: 07.21.2020
Brianna Teel

Checklist reviewed by: Holly Taylor Date: 07.22.2020
Holly Taylor

Certificate of Analysis Summary 674149



Larson and Associates, Inc., Midland, TX

Project Name: NMG SAU 2102

Project Id: 19-0112-51

Date Received in Lab: Fri 10.02.2020 09:20

Contact: Mark Larson

Report Date: 10.07.2020 16:39

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	674149-001	674149-002	674149-003	674149-004		
	Field Id:	MW-2	DUP-1	TMW-1	TMW-2		
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	10.01.2020 10:20	10.01.2020 13:00	10.01.2020 11:00	10.01.2020 12:00		
BTEX by EPA 8021B	Extracted:	10.04.2020 10:30	10.04.2020 10:30	10.04.2020 10:30	10.04.2020 10:30		
	Analyzed:	10.04.2020 16:04	10.04.2020 17:29	10.04.2020 17:50	10.04.2020 18:10		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	10.06.2020 11:15	10.06.2020 11:15	10.06.2020 11:15	10.06.2020 11:15		
	Analyzed:	10.06.2020 14:30	10.06.2020 14:35	10.06.2020 14:41	10.06.2020 14:46		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		241 2.50	245 2.50	452 5.00	591 5.00		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 674149

for

Larson and Associates, Inc.

Project Manager: Mark Larson

NMG SAU 2102

19-0112-51

10.07.2020

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.07.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **674149**
NMG SAU 2102
Project Address:

Mark Larson :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 674149. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 674149 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 674149

Larson and Associates, Inc., Midland, TX

NMG SAU 2102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	10.01.2020 10:20		674149-001
DUP-1	W	10.01.2020 13:00		674149-002
TMW-1	W	10.01.2020 11:00		674149-003
TMW-2	W	10.01.2020 12:00		674149-004



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: NMG SAU 2102

Project ID: 19-0112-51

Work Order Number(s): 674149

Report Date: 10.07.2020

Date Received: 10.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 674149

Larson and Associates, Inc., Midland, TX

NMG SAU 2102

Sample Id: **MW-2**
Lab Sample Id: 674149-001

Matrix: Water
Date Collected: 10.01.2020 10:20

Date Received: 10.02.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 10.06.2020 11:15

% Moisture:

Seq Number: 3139032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	241	2.50	mg/L	10.06.2020 14:30		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 10.04.2020 10:30

% Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 16:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.04.2020 16:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.04.2020 16:04	
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.04.2020 16:04	



Certificate of Analytical Results 674149

Larson and Associates, Inc., Midland, TX

NMG SAU 2102

Sample Id: **DUP-1**
Lab Sample Id: 674149-002

Matrix: Water
Date Collected: 10.01.2020 13:00

Date Received: 10.02.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 10.06.2020 11:15

% Moisture:

Seq Number: 3139032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	245	2.50	mg/L	10.06.2020 14:35		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 10.04.2020 10:30

% Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 17:29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.04.2020 17:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.04.2020 17:29	
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.04.2020 17:29	



Certificate of Analytical Results 674149

Larson and Associates, Inc., Midland, TX

NMG SAU 2102

Sample Id: **TMW-1**
Lab Sample Id: 674149-003

Matrix: Water
Date Collected: 10.01.2020 11:00

Date Received: 10.02.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 10.06.2020 11:15

% Moisture:

Seq Number: 3139032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	452	5.00	mg/L	10.06.2020 14:41		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 10.04.2020 10:30

% Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 17:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.04.2020 17:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.04.2020 17:50	
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.04.2020 17:50	



Certificate of Analytical Results 674149

Larson and Associates, Inc., Midland, TX

NMG SAU 2102

Sample Id: **TMW-2**
Lab Sample Id: 674149-004

Matrix: Water
Date Collected: 10.01.2020 12:00

Date Received: 10.02.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 10.06.2020 11:15

% Moisture:

Seq Number: 3139032

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	591	5.00	mg/L	10.06.2020 14:46		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 10.04.2020 10:30

% Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 18:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.04.2020 18:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.04.2020 18:10	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.04.2020 18:10	

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Larson and Associates, Inc.
NMG SAU 2102
Analytical Method: Chloride by EPA 300

Seq Number: 3139032

MB Sample Id: 7712703-1-BLK

Matrix: Water

LCS Sample Id: 7712703-1-BKS

Prep Method: E300P

Date Prep: 10.06.2020

LCSD Sample Id: 7712703-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	26.2	105	26.2	105	90-110	0	20	mg/L	10.06.2020 13:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3139032

Parent Sample Id: 674336-001

Matrix: Drinking Water

MS Sample Id: 674336-001 S

Prep Method: E300P

Date Prep: 10.06.2020

MSD Sample Id: 674336-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.54	25.0	35.5	108	35.3	107	90-110	1	20	mg/L	10.06.2020 14:15	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138793

MB Sample Id: 7712592-1-BLK

Matrix: Water

LCS Sample Id: 7712592-1-BKS

Prep Method: SW5030B

Date Prep: 10.04.2020

LCSD Sample Id: 7712592-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0934	93	0.0908	91	70-130	3	25	mg/L	10.04.2020 10:56	
Toluene	<0.00200	0.100	0.0899	90	0.0871	87	70-130	3	25	mg/L	10.04.2020 10:56	
Ethylbenzene	<0.00200	0.100	0.0983	98	0.0939	94	70-130	5	25	mg/L	10.04.2020 10:56	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.192	96	70-130	5	25	mg/L	10.04.2020 10:56	
o-Xylene	<0.00200	0.100	0.0980	98	0.0946	95	70-130	4	25	mg/L	10.04.2020 10:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		98		70-130	%	10.04.2020 10:56
4-Bromofluorobenzene	100		96		97		70-130	%	10.04.2020 10:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138793

Parent Sample Id: 674046-014

Matrix: Ground Water

MS Sample Id: 674046-014 S

Prep Method: SW5030B

Date Prep: 10.04.2020

MSD Sample Id: 674046-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0958	96	0.104	104	70-130	8	25	mg/L	10.04.2020 11:37	
Toluene	<0.00200	0.100	0.0921	92	0.0992	99	70-130	7	25	mg/L	10.04.2020 11:37	
Ethylbenzene	<0.00200	0.100	0.100	100	0.110	110	70-130	10	25	mg/L	10.04.2020 11:37	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.224	112	70-130	8	25	mg/L	10.04.2020 11:37	
o-Xylene	<0.00200	0.100	0.100	100	0.110	110	70-130	10	25	mg/L	10.04.2020 11:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		70-130	%	10.04.2020 11:37
4-Bromofluorobenzene	93		97		70-130	%	10.04.2020 11:37

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Environmental Consultants

507 N. Martenfeld, Ste. 200

Midland, TX 79701

432-687-0901

DATE: 10/21/20 PAGE 1 OF 1

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: AMG SAU 2102

LA PROJECT #: 19-0112-51 COLLECTOR: DS/JT

Data Reported to:

TRRP report?
☐ Yes ☒ NoS=SOIL
W=WATER
A=AIR
P=PAINT
SL=SLUDGE
OT=OTHERTIME ZONE:
Time zone/State:

MNT

Field
Sample I.D.

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESERVED

ANALYSES

BTEX-MTBE ☐
 TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐
 GASOLINE MOD 8015 ☐
 DIESEL - MOD 8015 ☐
 OIL - MOD 8015 ☐
 VOC 8280 ☐
 SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
 8081 PESTICIDES ☐ 8151 HERBICIDES ☐
 8082 PCBs ☐
 TBLP - METALS (RCRA) ☐ TCLP VOC ☐
 TCLP - PEST ☐ HERB ☐ Semi-VOC ☐
 TOTAL METALS (RCRA) ☐ OTHER LIST ☐
 LEAD - TOTAL ☐ DW 200.8 ☐ TCLP ☐
 RCI ☐ TOX ☐ FLASHPOINT ☐
 TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
 PH ☐ HEXAVALENT CHROMIUM ☐
 EXPLOSIVES ☐ PECTHLORATE ☐
 CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Bill Direct to

APACHE

TOTAL

4

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY:

Y ENCO

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 3.20c THERM#:

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

☐ HAND DELIVERED

674149
 10/21/20
 1359
 CHAIN-OF-CUSTODY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 10.02.2020 09.20.00 AM**Work Order #:** 674149**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: AJA

PH Device/Lot#: 10BDH1991

Checklist completed by: Brianna Teel Date: 10.02.2020
Brianna Teel

Checklist reviewed by: Holly Taylor Date: 10.07.2020
Holly Taylor

Certificate of Analysis Summary 680333



Larson and Associates, Inc., Midland, TX

Project Name: NMGSAU 2102

Project Id: 19-0112-51

Date Received in Lab: Wed 12.09.2020 08:51

Contact: Mark Larson

Report Date: 12.15.2020 11:42

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	680333-001	680333-002	680333-003	680333-004		
	Field Id:	TMW-02	TMW-1	MW-2	DUP-1		
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	12.08.2020 10:09	12.08.2020 10:34	12.08.2020 10:58	12.08.2020 00:00		
BTEX by EPA 8021B	Extracted:	12.10.2020 15:00	12.10.2020 15:00	12.10.2020 15:00	12.10.2020 15:00		
	Analyzed:	12.11.2020 07:43	12.11.2020 08:09	12.11.2020 08:35	12.11.2020 09:00		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000		
Total BTEX		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000		
Chloride by EPA 300	Extracted:	12.10.2020 15:15	12.10.2020 15:15	12.10.2020 15:15	12.10.2020 15:15		
	Analyzed:	12.10.2020 17:19	12.10.2020 17:27	12.10.2020 17:52	12.10.2020 17:57		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		473 5.00	449 5.00	227 2.50	226 2.50		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 680333

for

Larson and Associates, Inc.

Project Manager: Mark Larson

NMGSAU 2102

19-0112-51

12.15.2020

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.15.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **680333**
NMGSAU 2102
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 680333. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 680333 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 680333

Larson and Associates, Inc., Midland, TX

NMGSAU 2102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TMW-02	W	12.08.2020 10:09		680333-001
TMW-1	W	12.08.2020 10:34		680333-002
MW-2	W	12.08.2020 10:58		680333-003
DUP-1	W	12.08.2020 00:00		680333-004

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: NMGSAU 2102**Project ID: 19-0112-51
Work Order Number(s): 680333Report Date: 12.15.2020
Date Received: 12.09.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3144538 BTEX by EPA 8021B

Surrogate 1,4-Difluorobenzene recovered above QC limits . Samples affected are: 7716864-1-BKS,7716864-1-BSD,680330-001 S,680330-001 SD,680333-002,680333-001,680333-003,680333-004.

Surrogate 4-Bromofluorobenzene recovered above QC limits . Samples affected are: 7716864-1-BSD,680333-001,680333-002,680333-003,680333-004.

Toluene RPD was outside laboratory control limits.

Samples in the analytical batch are: 680333-001, -002, -003, -004



Certificate of Analytical Results 680333

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **TMW-02** Matrix: Water Date Received: 12.09.2020 08:51
Lab Sample Id: 680333-001 Date Collected: 12.08.2020 10:09
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:
Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	473	5.00	mg/L	12.10.2020 17:19		10

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: MNR
Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:
Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 07:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 07:43	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 07:43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 07:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 07:43	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 07:43	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 07:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	195	%	70-130	12.11.2020 07:43	**
4-Bromofluorobenzene	460-00-4	138	%	70-130	12.11.2020 07:43	**



Certificate of Analytical Results 680333

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **TMW-1** Matrix: **Water** Date Received: 12.09.2020 08:51
Lab Sample Id: 680333-002 Date Collected: 12.08.2020 10:34

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: **CHE**
Analyst: **CHE** Date Prep: 12.10.2020 15:15 % Moisture:
Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	449	5.00	mg/L	12.10.2020 17:27		10

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: **MNR**
Analyst: **MNR** Date Prep: 12.10.2020 15:00 % Moisture:
Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 08:09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 08:09	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 08:09	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 08:09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 08:09	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 08:09	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 08:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	187	%	70-130	12.11.2020 08:09	**
4-Bromofluorobenzene	460-00-4	135	%	70-130	12.11.2020 08:09	**



Certificate of Analytical Results 680333

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **MW-2** Matrix: Water Date Received: 12.09.2020 08:51
Lab Sample Id: 680333-003 Date Collected: 12.08.2020 10:58
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:
Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	227	2.50	mg/L	12.10.2020 17:52		5

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: MNR
Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:
Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 08:35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 08:35	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 08:35	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 08:35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 08:35	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 08:35	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 08:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	176	%	70-130	12.11.2020 08:35	**
4-Bromofluorobenzene	460-00-4	136	%	70-130	12.11.2020 08:35	**



Certificate of Analytical Results 680333

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **DUP-1** Matrix: Water Date Received: 12.09.2020 08:51
Lab Sample Id: 680333-004 Date Collected: 12.08.2020 00:00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:
Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	226	2.50	mg/L	12.10.2020 17:57		5

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: MNR
Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:
Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 09:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 09:00	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 09:00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 09:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 09:00	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 09:00	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 09:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	164	%	70-130	12.11.2020 09:00	**
4-Bromofluorobenzene	460-00-4	135	%	70-130	12.11.2020 09:00	**

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Larson and Associates, Inc.
NMGSAU 2102

Analytical Method: Chloride by EPA 300

Seq Number: 3144579

MB Sample Id: 7716819-1-BLK

Matrix: Water

LCS Sample Id: 7716819-1-BKS

Prep Method: E300P

Date Prep: 12.10.2020

LCSD Sample Id: 7716819-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	26.4	106	26.4	106	90-110	0	20	mg/L	12.10.2020 16:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3144579

Parent Sample Id: 680611-001

Matrix: Drinking Water

MS Sample Id: 680611-001 S

Prep Method: E300P

Date Prep: 12.10.2020

MSD Sample Id: 680611-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.9	25.0	44.5	114	43.4	110	90-110	3	20	mg/L	12.10.2020 16:47	X

Analytical Method: Chloride by EPA 300

Seq Number: 3144579

Parent Sample Id: 680614-001

Matrix: Drinking Water

MS Sample Id: 680614-001 S

Prep Method: E300P

Date Prep: 12.10.2020

MSD Sample Id: 680614-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.8	25.0	40.8	112	40.2	110	90-110	1	20	mg/L	12.10.2020 18:26	X

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144538

MB Sample Id: 7716864-1-BLK

Matrix: Water

LCS Sample Id: 7716864-1-BKS

Prep Method: SW5030B

Date Prep: 12.10.2020

LCSD Sample Id: 7716864-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.0935	94	70-130	13	25	mg/L	12.11.2020 02:07	
Toluene	<0.00200	0.100	0.112	112	0.0813	81	70-130	32	25	mg/L	12.11.2020 02:07	F
Ethylbenzene	<0.00200	0.100	0.110	110	0.0900	90	70-130	20	25	mg/L	12.11.2020 02:07	
m,p-Xylenes	<0.00400	0.200	0.223	112	0.185	93	70-130	19	25	mg/L	12.11.2020 02:07	
o-Xylene	<0.00200	0.100	0.111	111	0.0983	98	70-130	12	25	mg/L	12.11.2020 02:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		147	**	163	**	70-130	%	12.11.2020 02:07
4-Bromofluorobenzene	105		118		133	**	70-130	%	12.11.2020 02:07

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Larson and Associates, Inc.

NMGSAU 2102

Analytical Method: BTEX by EPA 8021B

Seq Number: 3144538

Parent Sample Id: 680330-001

Matrix: Water

MS Sample Id: 680330-001 S

Prep Method: SW5030B

Date Prep: 12.10.2020

MSD Sample Id: 680330-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.112	112	0.110	110	70-130	2	25	mg/L	12.11.2020 02:59	
Toluene	<0.00200	0.100	0.0939	94	0.112	112	70-130	18	25	mg/L	12.11.2020 02:59	
Ethylbenzene	<0.00200	0.100	0.108	108	0.111	111	70-130	3	25	mg/L	12.11.2020 02:59	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.228	114	70-130	3	25	mg/L	12.11.2020 02:59	
o-Xylene	<0.00200	0.100	0.112	112	0.115	115	70-130	3	25	mg/L	12.11.2020 02:59	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	160	**	151	**	70-130	%	12.11.2020 02:59
4-Bromofluorobenzene	120		130		70-130	%	12.11.2020 02:59

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 12.09.2020 08.51.00 AM**Work Order #:** 680333**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: JKR

PH Device/Lot#: 10BDH1991

Checklist completed by: Brianna Teel Date: 12.09.2020
Brianna Teel

Checklist reviewed by: Holly Taylor Date: 12.09.2020
Holly Taylor

Certificate of Analysis Summary 691511



Larson and Associates, Inc., Midland, TX

Project Name: NMGSAU 2102

Project Id: 19-0112-51

Date Received in Lab: Thu 03.11.2021 15:46

Contact: Mark Larson

Report Date: 03.19.2021 17:08

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	691511-001	691511-002	691511-003	691511-004		
	Field Id:	MW-2	TMW-1	TMW-2	DUP-1		
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER		
	Sampled:	03.10.2021 10:17	03.10.2021 10:40	03.10.2021 11:45	03.10.2021 00:00		
BTEX by EPA 8021B	Extracted:	03.16.2021 12:00	03.16.2021 12:00	03.16.2021 12:00	03.16.2021 12:00		
	Analyzed:	03.19.2021 01:00	03.19.2021 01:52	03.19.2021 02:18	03.19.2021 02:44		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	03.11.2021 17:45	03.11.2021 17:45	03.11.2021 17:45	03.11.2021 17:45		
	Analyzed:	03.11.2021 18:27	03.11.2021 18:36	03.11.2021 19:01	03.11.2021 19:10		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		235 2.50	418 5.00	428 5.00	237 5.00		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 691511

for

Larson and Associates, Inc.

Project Manager: Mark Larson

NMGSAU 2102

19-0112-51

03.19.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03.19.2021

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **691511**
NMGSAU 2102
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 691511. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 691511 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 691511

Larson and Associates, Inc., Midland, TX

NMGSAU 2102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-2	W	03.10.2021 10:17		691511-001
TMW-1	W	03.10.2021 10:40		691511-002
TMW-2	W	03.10.2021 11:45		691511-003
DUP-1	W	03.10.2021 00:00		691511-004



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: NMGSAU 2102

Project ID: 19-0112-51
Work Order Number(s): 691511

Report Date: 03.19.2021
Date Received: 03.11.2021

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 691511

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **MW-2**
Lab Sample Id: 691511-001

Matrix: Water
Date Collected: 03.10.2021 10:17

Date Received: 03.11.2021 15:46

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.11.2021 17:45

% Moisture:

Seq Number: 3153434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	235	2.50	mg/L	03.11.2021 18:27		5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 12:00

% Moisture:

Seq Number: 3154191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	03.19.2021 01:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1
Total BTEX		<0.00200	0.00200	mg/L	03.19.2021 01:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	03.19.2021 01:00	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.19.2021 01:00	



Certificate of Analytical Results 691511

Larson and Associates, Inc., Midland, TX

NMGSAU 2102

Sample Id: **TMW-1**
Lab Sample Id: 691511-002

Matrix: Water
Date Collected: 03.10.2021 10:40

Date Received: 03.11.2021 15:46

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.11.2021 17:45

% Moisture:

Seq Number: 3153434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	418	5.00	mg/L	03.11.2021 18:36		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 12:00

% Moisture:

Seq Number: 3154191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	03.19.2021 01:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1
Total BTEX		<0.00200	0.00200	mg/L	03.19.2021 01:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.19.2021 01:52	
4-Bromofluorobenzene	460-00-4	103	%	70-130	03.19.2021 01:52	



Certificate of Analytical Results 691511

Larson and Associates, Inc., Midland, TX

NMGSAU 2102

Sample Id: **TMW-2**
Lab Sample Id: 691511-003

Matrix: Water
Date Collected: 03.10.2021 11:45

Date Received: 03.11.2021 15:46

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.11.2021 17:45

% Moisture:

Seq Number: 3153434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	428	5.00	mg/L	03.11.2021 19:01		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 12:00

% Moisture:

Seq Number: 3154191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	03.19.2021 02:18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1
Total BTEX		<0.00200	0.00200	mg/L	03.19.2021 02:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	03.19.2021 02:18	
4-Bromofluorobenzene	460-00-4	78	%	70-130	03.19.2021 02:18	



Certificate of Analytical Results 691511

Larson and Associates, Inc., Midland, TX
NMGSAU 2102

Sample Id: **DUP-1** Matrix: Water Date Received: 03.11.2021 15:46
Lab Sample Id: 691511-004 Date Collected: 03.10.2021 00:00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 03.11.2021 17:45 % Moisture:
Seq Number: 3153434

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	237	5.00	mg/L	03.11.2021 19:10		10

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL
Analyst: KTL Date Prep: 03.16.2021 12:00 % Moisture:
Seq Number: 3154191

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	03.19.2021 02:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1
Total BTEX		<0.00200	0.00200	mg/L	03.19.2021 02:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.19.2021 02:44	
4-Bromofluorobenzene	460-00-4	105	%	70-130	03.19.2021 02:44	

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Larson and Associates, Inc.
NMGSAU 2102

Analytical Method: Chloride by EPA 300

Seq Number: 3153434

MB Sample Id: 7723127-1-BLK

Matrix: Water

LCS Sample Id: 7723127-1-BKS

Prep Method: E300P

Date Prep: 03.11.2021

LCSD Sample Id: 7723127-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	24.4	98	24.4	98	90-110	0	20	mg/L	03.11.2021 17:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3153434

Parent Sample Id: 691256-001

Matrix: Drinking Water

MS Sample Id: 691256-001 S

Prep Method: E300P

Date Prep: 03.11.2021

MSD Sample Id: 691256-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	22.8	25.0	47.2	98	47.1	97	90-110	0	20	mg/L	03.11.2021 17:53	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3154191

MB Sample Id: 7723688-1-BLK

Matrix: Water

LCS Sample Id: 7723688-1-BKS

Prep Method: SW5030B

Date Prep: 03.16.2021

LCSD Sample Id: 7723688-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.102	102	70-130	6	25	mg/L	03.18.2021 23:17	
Toluene	<0.00200	0.100	0.103	103	0.0981	98	70-130	5	25	mg/L	03.18.2021 23:17	
Ethylbenzene	<0.00200	0.100	0.103	103	0.0993	99	70-130	4	25	mg/L	03.18.2021 23:17	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.203	102	70-130	5	25	mg/L	03.18.2021 23:17	
o-Xylene	<0.00200	0.100	0.103	103	0.101	101	70-130	2	25	mg/L	03.18.2021 23:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		115		117		70-130	%	03.18.2021 23:17
4-Bromofluorobenzene	75		88		95		70-130	%	03.18.2021 23:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3154191

Parent Sample Id: 691511-001

Matrix: Water

MS Sample Id: 691511-001 S

Prep Method: SW5030B

Date Prep: 03.16.2021

MSD Sample Id: 691511-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0781	78	0.0865	87	70-130	10	25	mg/L	03.19.2021 07:41	
Toluene	<0.00200	0.100	0.0828	83	0.0871	87	70-130	5	25	mg/L	03.19.2021 07:41	
Ethylbenzene	<0.00200	0.100	0.0863	86	0.0903	90	70-130	5	25	mg/L	03.19.2021 07:41	
m,p-Xylenes	<0.00400	0.200	0.174	87	0.185	93	70-130	6	25	mg/L	03.19.2021 07:41	
o-Xylene	<0.00200	0.100	0.0874	87	0.0935	94	70-130	7	25	mg/L	03.19.2021 07:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		116		70-130	%	03.19.2021 07:41
4-Bromofluorobenzene	113		94		70-130	%	03.19.2021 07:41

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

DATE: 3/10/21 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: 6915111 6915
PROJECT LOCATION OR NAME: NMGSAU 2102 3.11.2105
LAI PROJECT #: 19-0112-51 COLLECTOR: TT & MB

Final 1.000

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 03.11.2021 03.46.00 PM**Work Order #:** 691511**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: JKR

PH Device/Lot#: 10BDH1991

Checklist completed by:

Brianna Teel

Date: 03.11.2021

Checklist reviewed by:

Holly Taylor

Date: 03.15.2021



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-3000-1

Laboratory Sample Delivery Group: 19-0112-51

Client Project/Site: Apache - NMGSAU 2102

For:

Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

A handwritten signature in cursive script that reads "Holly Taylor".

Authorized for release by:
6/16/2021 4:43:49 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Laboratory Job ID: 880-3000-1
SDG: 19-0112-51

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Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Job ID: 880-3000-1

Laboratory: Eurofins Xenco, Midland

Narrative	
	Job Narrative 880-3000-1

Receipt

The samples were received on 6/14/2021 8:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.0°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Client Sample ID: MW-2

Lab Sample ID: 880-3000-1

Date Collected: 06/11/21 09:10

Matrix: Water

Date Received: 06/14/21 08:37

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 13:50	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 13:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 13:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 13:50	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 13:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 13:50	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130		06/14/21 13:50	1
1,4-Difluorobenzene (Surr)	99		70 - 130		06/14/21 13:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	212		2.50	mg/L			06/15/21 16:38	5

Client Sample ID: Dup1

Lab Sample ID: 880-3000-2

Date Collected: 06/11/21 00:00

Matrix: Water

Date Received: 06/14/21 08:37

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 14:15	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 14:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 14:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 14:15	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 14:15	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 14:15	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130		06/14/21 14:15	1
1,4-Difluorobenzene (Surr)	100		70 - 130		06/14/21 14:15	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	213		2.50	mg/L			06/15/21 16:45	5

Client Sample ID: TMW-1

Lab Sample ID: 880-3000-3

Date Collected: 06/11/21 09:30

Matrix: Water

Date Received: 06/14/21 08:37

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 14:40	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 14:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 14:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 14:40	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 14:40	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 14:40	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 14:40	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Client Sample ID: TMW-1

Lab Sample ID: 880-3000-3

Date Collected: 06/11/21 09:30

Matrix: Water

Date Received: 06/14/21 08:37

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130		06/14/21 14:40	1
1,4-Difluorobenzene (Surr)	106		70 - 130		06/14/21 14:40	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	361		5.00	mg/L			06/15/21 17:15	10

Client Sample ID: TMW-2

Lab Sample ID: 880-3000-4

Date Collected: 06/11/21 10:00

Matrix: Water

Date Received: 06/14/21 08:37

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 15:06	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 15:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 15:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 15:06	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 15:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 15:06	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 15:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130		06/14/21 15:06	1
1,4-Difluorobenzene (Surr)	101		70 - 130		06/14/21 15:06	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	402		5.00	mg/L			06/15/21 17:22	10

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-2930-A-1 MS	Matrix Spike	99	104
880-2930-A-1 MSD	Matrix Spike Duplicate	100	101
880-3000-1	MW-2	103	99
880-3000-2	Dup1	102	100
880-3000-3	TMW-1	109	106
880-3000-4	TMW-2	105	101
LCS 880-4074/3	Lab Control Sample	104	104
LCSD 880-4074/4	Lab Control Sample Dup	99	107
MB 880-4074/8	Method Blank	71	84
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-4074/8

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130		06/14/21 12:59	1
1,4-Difluorobenzene (Surr)	84		70 - 130		06/14/21 12:59	1

Lab Sample ID: LCS 880-4074/3

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09419		mg/L		94	70 - 130
Toluene	0.100	0.1038		mg/L		104	70 - 130
Ethylbenzene	0.100	0.1078		mg/L		108	70 - 130
m-Xylene & p-Xylene	0.200	0.1914		mg/L		96	70 - 130
o-Xylene	0.100	0.09672		mg/L		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-4074/4

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.09313		mg/L		93	70 - 130	1	20
Toluene	0.100	0.1006		mg/L		101	70 - 130	3	20
Ethylbenzene	0.100	0.1055		mg/L		106	70 - 130	2	20
m-Xylene & p-Xylene	0.200	0.1875		mg/L		94	70 - 130	2	20
o-Xylene	0.100	0.09438		mg/L		94	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-2930-A-1 MS

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.00880		0.100	0.1055		mg/L		97	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-2930-A-1 MS

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.0123		0.100	0.1165		mg/L		104	70 - 130
Ethylbenzene	<0.00200	U	0.100	0.1064		mg/L		106	70 - 130
m-Xylene & p-Xylene	0.00594		0.200	0.1952		mg/L		95	70 - 130
o-Xylene	<0.00200	U	0.100	0.09681		mg/L		96	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		70 - 130						
1,4-Difluorobenzene (Surr)	104		70 - 130						

Lab Sample ID: 880-2930-A-1 MSD

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.00880		0.100	0.09846		mg/L		90	70 - 130	7	25
Toluene	0.0123		0.100	0.1114		mg/L		99	70 - 130	4	25
Ethylbenzene	<0.00200	U	0.100	0.1028		mg/L		103	70 - 130	3	25
m-Xylene & p-Xylene	0.00594		0.200	0.1878		mg/L		91	70 - 130	4	25
o-Xylene	<0.00200	U	0.100	0.09330		mg/L		92	70 - 130	4	25
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		70 - 130								
1,4-Difluorobenzene (Surr)	101		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4120/3

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			06/15/21 14:49	1

Lab Sample ID: LCS 880-4120/4

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	23.77		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-4120/5

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	23.31		mg/L		93	90 - 110	2	20

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-3040-A-1 MS

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	17.9		25.0	42.53		mg/L		98	90 - 110

Lab Sample ID: 880-3040-A-1 MSD

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	17.9		25.0	42.28		mg/L		97	90 - 110	1	20

Lab Sample ID: 880-3041-A-1 MS

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.4		25.0	40.52		mg/L		96	90 - 110

Lab Sample ID: 880-3041-A-1 MSD

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	16.4		25.0	41.69		mg/L		101	90 - 110	3	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

GC VOA

Analysis Batch: 4074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3000-1	MW-2	Total/NA	Water	8021B	
880-3000-2	Dup1	Total/NA	Water	8021B	
880-3000-3	TMW-1	Total/NA	Water	8021B	
880-3000-4	TMW-2	Total/NA	Water	8021B	
MB 880-4074/8	Method Blank	Total/NA	Water	8021B	
LCS 880-4074/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-4074/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-2930-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
880-2930-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

HPLC/IC

Analysis Batch: 4120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3000-1	MW-2	Total/NA	Water	300.0	
880-3000-2	Dup1	Total/NA	Water	300.0	
880-3000-3	TMW-1	Total/NA	Water	300.0	
880-3000-4	TMW-2	Total/NA	Water	300.0	
MB 880-4120/3	Method Blank	Total/NA	Water	300.0	
LCS 880-4120/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-4120/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-3040-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-3040-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
880-3041-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-3041-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGS AU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Client Sample ID: MW-2

Date Collected: 06/11/21 09:10

Date Received: 06/14/21 08:37

Lab Sample ID: 880-3000-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 13:50	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:38	CH	XEN MID

Client Sample ID: Dup1

Date Collected: 06/11/21 00:00

Date Received: 06/14/21 08:37

Lab Sample ID: 880-3000-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 14:15	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:45	CH	XEN MID

Client Sample ID: TMW-1

Date Collected: 06/11/21 09:30

Date Received: 06/14/21 08:37

Lab Sample ID: 880-3000-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 14:40	MR	XEN MID
Total/NA	Analysis	300.0		10			4120	06/15/21 17:15	CH	XEN MID

Client Sample ID: TMW-2

Date Collected: 06/11/21 10:00

Date Received: 06/14/21 08:37

Lab Sample ID: 880-3000-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 15:06	MR	XEN MID
Total/NA	Analysis	300.0		10			4120	06/15/21 17:22	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8021B		Water	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5030B	Purge and Trap	SW846	XEN MID

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: Apache - NMGSAU 2102

Job ID: 880-3000-1
SDG: 19-0112-51

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-3000-1	MW-2	Water	06/11/21 09:10	06/14/21 08:37	
880-3000-2	Dup1	Water	06/11/21 00:00	06/14/21 08:37	
880-3000-3	TMW-1	Water	06/11/21 09:30	06/14/21 08:37	
880-3000-4	TMW-2	Water	06/11/21 10:00	06/14/21 08:37	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

6/16/2021

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-3000-1

SDG Number: 19-0112-51

Login Number: 3000

List Number: 1

Creator: Phillips, Kerianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-7155-1

Laboratory Sample Delivery Group: 19-0112-51

Client Project/Site: NMGSAU 2102

For:

Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

A handwritten signature in cursive script that reads "Holly Taylor".

Authorized for release by:
10/21/2021 5:32:04 PM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Laboratory Job ID: 880-7155-1
SDG: 19-0112-51

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Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Qualifiers

GC VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Job ID: 880-7155-1

Laboratory: Eurofins Xenco, Midland

Narrative	Job Narrative 880-7155-1
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Receipt

The samples were received on 10/13/2021 9:08 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-9936/8). Evidence of matrix interferences is not obvious.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-9936 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Client Sample ID: MW-2

Lab Sample ID: 880-7155-1

Date Collected: 10/12/21 10:00

Matrix: Water

Date Received: 10/13/21 09:08

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F2	0.00200	mg/L			10/20/21 14:27	1
Toluene	<0.00200	U F2	0.00200	mg/L			10/20/21 14:27	1
Ethylbenzene	<0.00200	U F2	0.00200	mg/L			10/20/21 14:27	1
m,p-Xylenes	<0.00400	U F2	0.00400	mg/L			10/20/21 14:27	1
o-Xylene	<0.00200	U F2	0.00200	mg/L			10/20/21 14:27	1
Xylenes, Total	<0.00400	U F2	0.00400	mg/L			10/20/21 14:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130		10/20/21 14:27	1
1,4-Difluorobenzene (Surr)	93		70 - 130		10/20/21 14:27	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			10/19/21 14:04	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	207		2.50	mg/L			10/15/21 18:57	5

Client Sample ID: TMW-1

Lab Sample ID: 880-7155-2

Date Collected: 10/12/21 10:20

Matrix: Water

Date Received: 10/13/21 09:08

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			10/20/21 14:54	1
Toluene	<0.00200	U	0.00200	mg/L			10/20/21 14:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			10/20/21 14:54	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			10/20/21 14:54	1
o-Xylene	<0.00200	U	0.00200	mg/L			10/20/21 14:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			10/20/21 14:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130		10/20/21 14:54	1
1,4-Difluorobenzene (Surr)	108		70 - 130		10/20/21 14:54	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			10/19/21 14:04	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	291		5.00	mg/L			10/15/21 19:10	10

Client Sample ID: TMW-2

Lab Sample ID: 880-7155-3

Date Collected: 10/12/21 10:37

Matrix: Water

Date Received: 10/13/21 09:08

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			10/20/21 15:20	1
Toluene	<0.00200	U	0.00200	mg/L			10/20/21 15:20	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Client Sample ID: TMW-2

Lab Sample ID: 880-7155-3

Date Collected: 10/12/21 10:37

Matrix: Water

Date Received: 10/13/21 09:08

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200	mg/L			10/20/21 15:20	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			10/20/21 15:20	1
o-Xylene	<0.00200	U	0.00200	mg/L			10/20/21 15:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			10/20/21 15:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130				10/20/21 15:20	1
1,4-Difluorobenzene (Surr)	106		70 - 130				10/20/21 15:20	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			10/19/21 14:04	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	325		5.00	mg/L			10/15/21 19:51	10

Client Sample ID: DUP-1

Lab Sample ID: 880-7155-4

Date Collected: 10/12/21 00:00

Matrix: Water

Date Received: 10/13/21 09:08

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			10/20/21 15:46	1
Toluene	<0.00200	U	0.00200	mg/L			10/20/21 15:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			10/20/21 15:46	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			10/20/21 15:46	1
o-Xylene	<0.00200	U	0.00200	mg/L			10/20/21 15:46	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			10/20/21 15:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130				10/20/21 15:46	1
1,4-Difluorobenzene (Surr)	105		70 - 130				10/20/21 15:46	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			10/19/21 14:04	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	305		5.00	mg/L			10/15/21 20:23	10

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-7155-1	MW-2	112	93
880-7155-1 MS	MW-2	76	107
880-7155-1 MSD	MW-2	98	112
880-7155-2	TMW-1	98	108
880-7155-3	TMW-2	101	106
880-7155-4	DUP-1	96	105
LCS 880-9936/3	Lab Control Sample	89	109
LCSD 880-9936/4	Lab Control Sample Dup	93	105
MB 880-9936/8	Method Blank	60 S1-	92
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-9936/8

Matrix: Water

Analysis Batch: 9936

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			10/20/21 14:01	1
Toluene	<0.00200	U	0.00200	mg/L			10/20/21 14:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			10/20/21 14:01	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			10/20/21 14:01	1
o-Xylene	<0.00200	U	0.00200	mg/L			10/20/21 14:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			10/20/21 14:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	60	S1-	70 - 130		10/20/21 14:01	1
1,4-Difluorobenzene (Surr)	92		70 - 130		10/20/21 14:01	1

Lab Sample ID: LCS 880-9936/3

Matrix: Water

Analysis Batch: 9936

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09418		mg/L		94	70 - 130
Toluene	0.100	0.1004		mg/L		100	70 - 130
Ethylbenzene	0.100	0.09588		mg/L		96	70 - 130
m,p-Xylenes	0.200	0.1885		mg/L		94	70 - 130
o-Xylene	0.100	0.09721		mg/L		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 880-9936/4

Matrix: Water

Analysis Batch: 9936

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.08533		mg/L		85	70 - 130	10	20
Toluene	0.100	0.09115		mg/L		91	70 - 130	10	20
Ethylbenzene	0.100	0.08712		mg/L		87	70 - 130	10	20
m,p-Xylenes	0.200	0.1706		mg/L		85	70 - 130	10	20
o-Xylene	0.100	0.08803		mg/L		88	70 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 880-7155-1 MS

Matrix: Water

Analysis Batch: 9936

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U F2	0.100	0.07712		mg/L		77	70 - 130
Toluene	<0.00200	U F2	0.100	0.07940		mg/L		79	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-7155-1 MS

Matrix: Water

Analysis Batch: 9936

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00200	U F2	0.100	0.07699		mg/L		77	70 - 130
m,p-Xylenes	<0.00400	U F2	0.200	0.1519		mg/L		76	70 - 130
o-Xylene	<0.00200	U F2	0.100	0.07664		mg/L		77	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	76		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-7155-1 MSD

Matrix: Water

Analysis Batch: 9936

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U F2	0.100	0.1005	F2	mg/L		100	70 - 130	26	25
Toluene	<0.00200	U F2	0.100	0.1069	F2	mg/L		107	70 - 130	30	25
Ethylbenzene	<0.00200	U F2	0.100	0.1055	F2	mg/L		105	70 - 130	31	25
m,p-Xylenes	<0.00400	U F2	0.200	0.2078	F2	mg/L		104	70 - 130	31	25
o-Xylene	<0.00200	U F2	0.100	0.1050	F2	mg/L		105	70 - 130	31	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-9543/3

Matrix: Water

Analysis Batch: 9543

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			10/15/21 16:28	1

Lab Sample ID: LCS 880-9543/4

Matrix: Water

Analysis Batch: 9543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.59		mg/L		98	90 - 110

Lab Sample ID: LCSD 880-9543/5

Matrix: Water

Analysis Batch: 9543

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	24.85		mg/L		99	90 - 110	1	20

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-7234-A-1 MS											Client Sample ID: Matrix Spike		
Matrix: Water											Prep Type: Total/NA		
Analysis Batch: 9543													
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits				
Chloride	41.8	F1	25.0	65.73		mg/L		96	90 - 110				

Lab Sample ID: 880-7234-A-1 MSD											Client Sample ID: Matrix Spike Duplicate		
Matrix: Water											Prep Type: Total/NA		
Analysis Batch: 9543													
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	RPD Limit	
Chloride	41.8	F1	25.0	62.53	F1	mg/L		83	90 - 110		5	20	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

GC VOA

Analysis Batch: 9900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-7155-1	MW-2	Total/NA	Water	Total BTEX	
880-7155-2	TMW-1	Total/NA	Water	Total BTEX	
880-7155-3	TMW-2	Total/NA	Water	Total BTEX	
880-7155-4	DUP-1	Total/NA	Water	Total BTEX	

Analysis Batch: 9936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-7155-1	MW-2	Total/NA	Water	8021B	
880-7155-2	TMW-1	Total/NA	Water	8021B	
880-7155-3	TMW-2	Total/NA	Water	8021B	
880-7155-4	DUP-1	Total/NA	Water	8021B	
MB 880-9936/8	Method Blank	Total/NA	Water	8021B	
LCS 880-9936/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-9936/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-7155-1 MS	MW-2	Total/NA	Water	8021B	
880-7155-1 MSD	MW-2	Total/NA	Water	8021B	

HPLC/IC

Analysis Batch: 9543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-7155-1	MW-2	Total/NA	Water	300.0	
880-7155-2	TMW-1	Total/NA	Water	300.0	
880-7155-3	TMW-2	Total/NA	Water	300.0	
880-7155-4	DUP-1	Total/NA	Water	300.0	
MB 880-9543/3	Method Blank	Total/NA	Water	300.0	
LCS 880-9543/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-9543/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-7234-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-7234-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Client Sample ID: MW-2
Date Collected: 10/12/21 10:00
Date Received: 10/13/21 09:08

Lab Sample ID: 880-7155-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	9936	10/20/21 14:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			9900	10/19/21 14:04	AJ	XEN MID
Total/NA	Analysis	300.0		5			9543	10/15/21 18:57	CH	XEN MID

Client Sample ID: TMW-1
Date Collected: 10/12/21 10:20
Date Received: 10/13/21 09:08

Lab Sample ID: 880-7155-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	9936	10/20/21 14:54	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			9900	10/19/21 14:04	AJ	XEN MID
Total/NA	Analysis	300.0		10			9543	10/15/21 19:10	CH	XEN MID

Client Sample ID: TMW-2
Date Collected: 10/12/21 10:37
Date Received: 10/13/21 09:08

Lab Sample ID: 880-7155-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	9936	10/20/21 15:20	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			9900	10/19/21 14:04	AJ	XEN MID
Total/NA	Analysis	300.0		10			9543	10/15/21 19:51	CH	XEN MID

Client Sample ID: DUP-1
Date Collected: 10/12/21 00:00
Date Received: 10/13/21 09:08

Lab Sample ID: 880-7155-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	9936	10/20/21 15:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			9900	10/19/21 14:04	AJ	XEN MID
Total/NA	Analysis	300.0		10			9543	10/15/21 20:23	CH	XEN MID

Laboratory References:
XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5030B	Purge and Trap	SW846	XEN MID

Protocol References:

- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-7155-1
SDG: 19-0112-51

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-7155-1	MW-2	Water	10/12/21 10:00	10/13/21 09:08
880-7155-2	TMW-1	Water	10/12/21 10:20	10/13/21 09:08
880-7155-3	TMW-2	Water	10/12/21 10:37	10/13/21 09:08
880-7155-4	DUP-1	Water	10/12/21 00:00	10/13/21 09:08

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Marson & Associates, Inc.

Environmental Consultants

880-7155 Chain of Custody

Midland TX 79701

432-687 0901

10-13-21

7155 CHAIN-OF-CUSTODY

No. 2218

PAGE 1 OF 1

Data Reported to

PROJECT LOCATION OR NAME

LAB WORK ORDER#

COLLECTOR

LAI PROJECT #

MR & TP

TRRP report?

S=SOIL
W=WATER
A=AIRP=PAINT
SL=SLUDGE
OT=OTHER

TIME ZONE

Field Sample ID

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ NaOH

ICE

UNPRESERVED

ANALYSES

BTEX

TPH 418 1

TPH 1005

TPH 1006

GASOLINE MOD 8015

DIESEL - MOD 8015

OIL - MOD 8015

VOC 8260

SVOC 8270

8081 PESTICIDES

8082 PCBs

TCLP - METALS (RCRA)

TCLP - PEST

TCLP - HERB

TCLP - SEMI-VOC

TCLP - OTHER LIST

TCLP - DW 200.8

TCLP - FLASHPOINT

TCLP - % MOISTURE

TCLP - CYANIDE

TCLP - HEXAVALENT CHROMIUM

TCLP - PENTACHLORATE

TCLP - ALKALINITY

FIELD NOTES

B, I, I direct to Apache

MW-2

10/12/21

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Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-7155-1

SDG Number: 19-0112-51

Login Number: 7155

List Number: 1

Creator: Kramer, Jessica

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-9656-1

Laboratory Sample Delivery Group: 19-0112-51

Client Project/Site: NMGSAU 2102

Revision: 1

For:

Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

A handwritten signature in cursive script that reads "Holly Taylor".

Authorized for release by:

1/6/2022 8:47:33 AM

Holly Taylor, Project Manager
(806)794-1296

holly.taylor@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Laboratory Job ID: 880-9656-1
SDG: 19-0112-51

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Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Job ID: 880-9656-1

Laboratory: Eurofins Xenco, Midland

Narrative	Job Narrative 880-9656-1
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Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/3/2022. The report (revision 1) is being revised to change the project name per Robert Nelson (email)..

Receipt
The samples were received on 12/22/2021 3:48 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 7.7° C.

GC VOA
Method 8021B: The surrogate recovery for the blank associated with analytical batch 880-15480 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Client Sample ID: MW-2

Lab Sample ID: 880-9656-1

Date Collected: 12/21/21 10:38

Matrix: Water

Date Received: 12/22/21 15:48

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/27/21 19:33	1
Toluene	<0.00200	U	0.00200	mg/L			12/27/21 19:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/27/21 19:33	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/27/21 19:33	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/27/21 19:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/27/21 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130		12/27/21 19:33	1
1,4-Difluorobenzene (Surr)	85		70 - 130		12/27/21 19:33	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/28/21 10:58	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	222		5.00	mg/L			12/30/21 13:35	10

Client Sample ID: TMW-1

Lab Sample ID: 880-9656-2

Date Collected: 12/21/21 11:08

Matrix: Water

Date Received: 12/22/21 15:48

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/27/21 19:59	1
Toluene	<0.00200	U	0.00200	mg/L			12/27/21 19:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/27/21 19:59	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/27/21 19:59	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/27/21 19:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/27/21 19:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130		12/27/21 19:59	1
1,4-Difluorobenzene (Surr)	82		70 - 130		12/27/21 19:59	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/28/21 10:58	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	406		5.00	mg/L			12/30/21 13:58	10

Client Sample ID: TMW-2

Lab Sample ID: 880-9656-3

Date Collected: 12/21/21 11:38

Matrix: Water

Date Received: 12/22/21 15:48

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/27/21 20:27	1
Toluene	<0.00200	U	0.00200	mg/L			12/27/21 20:27	1

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Client Sample ID: TMW-2

Lab Sample ID: 880-9656-3

Date Collected: 12/21/21 11:38

Matrix: Water

Date Received: 12/22/21 15:48

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/27/21 20:27	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/27/21 20:27	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/27/21 20:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/27/21 20:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130		12/27/21 20:27	1
1,4-Difluorobenzene (Surr)	86		70 - 130		12/27/21 20:27	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/28/21 10:58	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	388		5.00	mg/L			12/30/21 14:06	10

Client Sample ID: DUP-1

Lab Sample ID: 880-9656-4

Date Collected: 12/21/21 00:00

Matrix: Water

Date Received: 12/22/21 15:48

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/27/21 20:54	1
Toluene	<0.00200	U	0.00200	mg/L			12/27/21 20:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/27/21 20:54	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/27/21 20:54	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/27/21 20:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/27/21 20:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130		12/27/21 20:54	1
1,4-Difluorobenzene (Surr)	79		70 - 130		12/27/21 20:54	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/28/21 10:58	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	226		5.00	mg/L			12/30/21 14:14	10

Eurofins Xenco, Midland

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-9656-1	MW-2	101	85
880-9656-2	TMW-1	100	82
880-9656-3	TMW-2	102	86
880-9656-4	DUP-1	98	79
880-9665-A-1 MS	Matrix Spike	87	102
880-9665-A-1 MSD	Matrix Spike Duplicate	93	101
LCS 880-15480/3	Lab Control Sample	83	89
LCSD 880-15480/4	Lab Control Sample Dup	98	111
MB 880-15480/8	Method Blank	61 S1-	84
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-15480/8

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/27/21 12:26	1
Toluene	<0.00200	U	0.00200	mg/L			12/27/21 12:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/27/21 12:26	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/27/21 12:26	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/27/21 12:26	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/27/21 12:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	61	S1-	70 - 130		12/27/21 12:26	1
1,4-Difluorobenzene (Surr)	84		70 - 130		12/27/21 12:26	1

Lab Sample ID: LCS 880-15480/3

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.07091		mg/L		71	70 - 130
Toluene	0.100	0.07094		mg/L		71	70 - 130
Ethylbenzene	0.100	0.07376		mg/L		74	70 - 130
m,p-Xylenes	0.200	0.1484		mg/L		74	70 - 130
o-Xylene	0.100	0.07449		mg/L		74	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	89		70 - 130

Lab Sample ID: LCSD 880-15480/4

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09074		mg/L		91	70 - 130	NaN	20
Toluene	0.100	0.09033		mg/L		90	70 - 130	NaN	20
Ethylbenzene	0.100	0.09409		mg/L		94	70 - 130	NaN	20
m,p-Xylenes	0.200	0.1898		mg/L		95	70 - 130	NaN	20
o-Xylene	0.100	0.09717		mg/L		97	70 - 130	NaN	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 880-9665-A-1 MS

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U	0.100	0.08065		mg/L		81	70 - 130
Toluene	<0.00200	U	0.100	0.07143		mg/L		71	70 - 130

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-9665-A-1 MS

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00200	U	0.100	0.08394		mg/L		84	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1699		mg/L		85	70 - 130
o-Xylene	<0.00200	U	0.100	0.08593		mg/L		86	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-9665-A-1 MSD

Matrix: Water

Analysis Batch: 15480

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.08531		mg/L		85	70 - 130	6	25
Toluene	<0.00200	U	0.100	0.08270		mg/L		83	70 - 130	15	25
Ethylbenzene	<0.00200	U	0.100	0.08893		mg/L		89	70 - 130	6	25
m,p-Xylenes	<0.00400	U	0.200	0.1802		mg/L		90	70 - 130	6	25
o-Xylene	<0.00200	U	0.100	0.09161		mg/L		92	70 - 130	6	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-15806/3

Matrix: Water

Analysis Batch: 15806

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/30/21 12:24	1

Lab Sample ID: LCS 880-15806/4

Matrix: Water

Analysis Batch: 15806

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.54		mg/L		98	90 - 110

Lab Sample ID: LCSD 880-15806/5

Matrix: Water

Analysis Batch: 15806

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	24.59		mg/L		98	90 - 110	0	20

Eurofins Xenco, Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-9657-B-3 MS						Client Sample ID: Matrix Spike					
Matrix: Water						Prep Type: Total/NA					
Analysis Batch: 15806											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	284		250	535.7		mg/L		101	90 - 110		

Lab Sample ID: 880-9657-B-3 MSD						Client Sample ID: Matrix Spike Duplicate					
Matrix: Water						Prep Type: Total/NA					
Analysis Batch: 15806											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	284		250	532.8		mg/L		100	90 - 110	1	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

GC VOA

Analysis Batch: 15480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9656-1	MW-2	Total/NA	Water	8021B	
880-9656-2	TMW-1	Total/NA	Water	8021B	
880-9656-3	TMW-2	Total/NA	Water	8021B	
880-9656-4	DUP-1	Total/NA	Water	8021B	
MB 880-15480/8	Method Blank	Total/NA	Water	8021B	
LCS 880-15480/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-15480/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-9665-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
880-9665-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Analysis Batch: 15634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9656-1	MW-2	Total/NA	Water	Total BTEX	
880-9656-2	TMW-1	Total/NA	Water	Total BTEX	
880-9656-3	TMW-2	Total/NA	Water	Total BTEX	
880-9656-4	DUP-1	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 15806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9656-1	MW-2	Total/NA	Water	300.0	
880-9656-2	TMW-1	Total/NA	Water	300.0	
880-9656-3	TMW-2	Total/NA	Water	300.0	
880-9656-4	DUP-1	Total/NA	Water	300.0	
MB 880-15806/3	Method Blank	Total/NA	Water	300.0	
LCS 880-15806/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-15806/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-9657-B-3 MS	Matrix Spike	Total/NA	Water	300.0	
880-9657-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Eurofins Xenco, Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: NMGS AU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Client Sample ID: MW-2

Date Collected: 12/21/21 10:38

Date Received: 12/22/21 15:48

Lab Sample ID: 880-9656-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	15480	12/27/21 19:33	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15634	12/28/21 10:58	AJ	XEN MID
Total/NA	Analysis	300.0		10			15806	12/30/21 13:35	CH	XEN MID

Client Sample ID: TMW-1

Date Collected: 12/21/21 11:08

Date Received: 12/22/21 15:48

Lab Sample ID: 880-9656-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	15480	12/27/21 19:59	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15634	12/28/21 10:58	AJ	XEN MID
Total/NA	Analysis	300.0		10			15806	12/30/21 13:58	CH	XEN MID

Client Sample ID: TMW-2

Date Collected: 12/21/21 11:38

Date Received: 12/22/21 15:48

Lab Sample ID: 880-9656-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	15480	12/27/21 20:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15634	12/28/21 10:58	AJ	XEN MID
Total/NA	Analysis	300.0		10			15806	12/30/21 14:06	CH	XEN MID

Client Sample ID: DUP-1

Date Collected: 12/21/21 00:00

Date Received: 12/22/21 15:48

Lab Sample ID: 880-9656-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	15480	12/27/21 20:54	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15634	12/28/21 10:58	AJ	XEN MID
Total/NA	Analysis	300.0		10			15806	12/30/21 14:14	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5030B	Purge and Trap	SW846	XEN MID

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: NMGSAU 2102

Job ID: 880-9656-1
SDG: 19-0112-51

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-9656-1	MW-2	Water	12/21/21 10:38	12/22/21 15:48
880-9656-2	TMW-1	Water	12/21/21 11:08	12/22/21 15:48
880-9656-3	TMW-2	Water	12/21/21 11:38	12/22/21 15:48
880-9656-4	DUP-1	Water	12/21/21 00:00	12/22/21 15:48

- 1
- 2
- 3
- 4
- 5
- 6
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- 9
- 10
- 11
- 12
- 13
- 14

1/6/2022 (Rev. 1)

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-9656-1

SDG Number: 19-0112-51

Login Number: 9656

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Appendix H
Photographic Documentation











Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 373661

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 373661
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
bhall	Accepted for record only. Historic report dated June 3, 2022. Please be advised that this acceptance does not approve any conclusions or closure requests. Additional groundwater monitoring and analytical results showing impacts to groundwater have been submitted in subsequent reports.	5/9/2025