



2350 W Marland Blvd Hobbs, NM 88240

Closure Report

September 25, 2019

Re: WBDU 23
API# 30-025-21225
Case # 1RP-5181

To: Dylan Rose-Coss
New Mexico Oil Conservation Division Energy, Minerals and Natural Resources Department
1220 South St. Francis Dr. Santa Fe, NM 87505

On August 23, 2018 a release occurred due to ½ nipple on the injection line failed resulting in the loss of produced water. The release area (GPS Coordinates: 32.49885, -103.17441) is located north of Eunice, New Mexico in unit letter D section 9 township 21S range 37E. An Initial C-141 was submitted to NMOCD and approved on September 7, 2018. A remediation plan was submitted to NMOCD and approved on June 18, 2019.

Prior to final samples being collected NMOCD was notified via phone on July 6, 2019. On July 10 and 11, 2019 final five point bottom composite samples were collected in accordance with the approved remediation plan and submitted to a commercial laboratory for analysis of Chloride, TPH, and BTEX. On July 19, 2019 final five point wall composite samples were collected in accordance with the approved remediation plan and submitted to a commercial laboratory for analysis of Chloride, TPH, and BTEX. All laboratory results were all below table one standards for sites greater than 50 feet to groundwater. All excavated material was hauled to a NMOCD approved facility and clean imported top soil was utilized to backfill the two foot pasture excavation. The pasture area will be seeded with a blend of native seed in accordance with the surface owner.

Apache Corporation has completed the remediation for this release in accordance with the NMOCD approved remediation plan and respectfully request that event 1RP-5181 be closed.

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

Submitted by;

Bruce Baker

Environmental Technician SR.

larry.baker@apachecorp.com

Cell# 432-631-6982

Off# 575-393-7106

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	NOY1825032205 WBDU 23
District RP	1RP-5181
Facility ID	
Application ID	POY1825031294

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)	NOY1825032205 WBDU 23
Contact mailing address	2350 W Marland Street, Hobbs, NM, 88240		

Location of Release Source

Latitude 32.49885 Longitude -103.17441
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	WBDU 23	Site Type	Injection Well
Date Release Discovered	8-23-18	API# (if applicable)	30-025-21225

Unit Letter	Section	Township	Range	County
D	9	21S	37E	Lea

Federal minerals

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Millard Deck Estates)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) <u>180 bbls</u>	Volume Recovered (bbls) <u>2 bbls</u>
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

1/2 nipple on the injection line going to well failed. The failure was near the well head.

State of New Mexico
Oil Conservation Division

Incident ID	NOY1825032205 WBDU 23
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Volume lost is greater than 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate notice was given via email to Olivia Yu and Jim Griswold at 4:50pm on 8/23/18	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ 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 Technician SR</u>
Signature: <u>Bruce Baker</u>	Date: <u>9-5-18</u>
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>
OCD Only	
Received by: <u>RECEIVED</u> <u>By Olivia Yu at 8:39 am, Sep 07, 2018</u>	Date: _____

Remediation Activities:

To date the release area has been mapped utilizing GPS coordinates. Preliminary surface samples have been taken to laboratory for analysis of Cl-, TPH, and BTEX. Currently the release surface is being scraped and the area in the pasture is being excavated to a depth of 2 feet indicated through field chloride screenings.

State of New Mexico
Oil Conservation Division

Incident ID	
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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>58</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ 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 1/2-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

Incident ID	
District RP	
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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: Bruce Baker Date: 11/20/18

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.

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: Bruce Baker Date: 11-20-18
email: larry.baker@apachecorp.com Telephone: 482-631-6982

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate OCD 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: Bruce Baker Date: 9-25-19
 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.

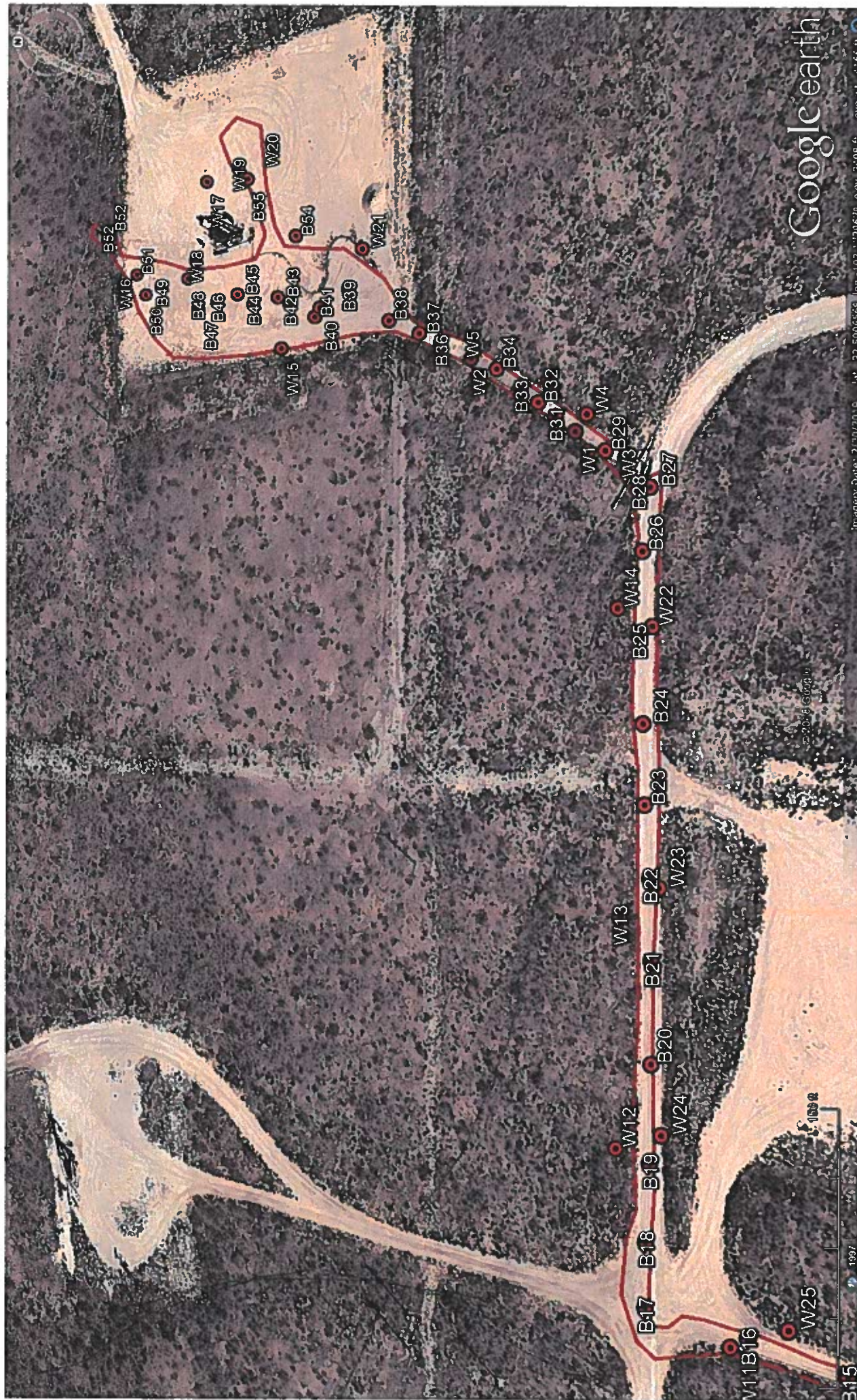
Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



Google earth

Copyright Date: 2/20/2019 Lat: 32.500395 Lon: -103.758739 Alt: 3501 ft. 4174 ft.



Google earth

Imagery Date: 2/7/2019 Lat: 32.5006369 Lon: -103.1720670 Elev: 3498 ft Eye alt: 4266 ft

Map ID	Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
W1	7/17/2019	West Wall @ 2' Corn	2'	352	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500342, -103.172469
W2	7/19/2019	W2	2'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500557, -103.172282
W3	7/19/2019	SW Composite	2'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500270, -103.172485
W4	7/19/2019	EW Composite	2'	208	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500346, -103.172394
W5	7/19/2019	W5	2'	400	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500571, -103.172199
W6	7/18/2019	W6	Scrape	160	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4988002, -103.1745222
W7	7/18/2019	W7	Scrape	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4992687, -103.1743988
W8	7/18/2019	W8	Scrape	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4990581, -103.1743063
W9	7/18/2019	W9	Scrape	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4990914, -103.1741510
W10	7/19/2019	W10	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4995942, -103.17441581
W11	7/19/2019	W11	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.500078, -103.1741363
W12	7/19/2019	W12	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002628, -103.1738453
W13	7/19/2019	W13	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002629, -103.1734007
W14	7/19/2019	W14	Scrape	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002714, -103.1727999
W15	7/19/2019	W15	Scrape	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5009936, -103.1721602
W16	7/19/2019	W16	Scrape	192	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5014175, -103.1719268
W17	7/19/2019	W17	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5012006, -103.1717246
W18	7/19/2019	W18	Scrape	800	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5012006, -103.1719013
W19	7/19/2019	W19	Scrape	1170	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5011282, -103.1717045
W20	7/19/2019	W20	Scrape	320	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5010344, -103.1716784
W21	7/19/2019	W21	Scrape	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	157	19.9	32.5008036, -103.1719758
W22	7/19/2019	W22	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002329, -103.1728197
W23	7/19/2019	W23	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002188, -103.1733135
W24	7/19/2019	W24	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002331, -103.1737879
W25	7/19/2019	W25	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5000178, -103.1740826
W26	7/19/2019	W26	Scrape	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4995926, -103.1741038
W27	7/19/2019	W27	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4990881, -103.1741178
W28	9/10/2019	W28	Scrape	<15.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.498944, -103.174106
W29	9/10/2019	W29	Scrape	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.498736, -103.174181
B1	7/10/2019	B1	Scrape	1620	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.3	13.8	32.498835, -103.1744581
B2	7/10/2019	B2	Scrape	208	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4988290, 103.1743110
B3	7/10/2019	B3	Scrape	704	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.7	16.9	32.4989062, -103.1744582
B4	7/10/2019	B4	Scrape	896	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4989022, -103.1743035
B5	7/10/2019	B5	Scrape	784	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	264	446	32.4989531, -103.1744729
B6	7/10/2019	B6	Scrape	224	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	33.2	27.8	32.4989823, -103.1743160
B7	7/10/2019	B7	Scrape	1650	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4990425, -103.1743747
B8	7/10/2019	B8	Scrape	2000	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	12.2	<10.0	32.4991480, -103.1743442
B9	7/10/2019	B9	Scrape	3640	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4991788, -103.1743250
B10	7/10/2019	B10	Scrape	208	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4992523, -103.1741725
B11	7/10/2019	B11	Scrape	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4993617, -103.1741302
B12	7/10/2019	B12	Scrape	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4995246, -103.1741380
B13	7/10/2019	B13	Scrape	288	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.499680, -103.1741383
B14	7/10/2019	B14	Scrape	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4997958, -103.1741282
B15	7/10/2019	B15	Scrape	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4999199, -103.1741178
B16	7/10/2019	B16	Scrape	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5000698, -103.1741129
B17	7/10/2019	B17	Scrape	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.4	<10.0	32.5002403, -103.1741121
B18	7/10/2019	B18	Scrape	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002338, -103.1739874
B19	7/10/2019	B19	Scrape	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.5002329, -103.1738349

B20	7/10/2019	B20	Scrape	48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002414, -103.1736495
B21	7/10/2019	B21	Scrape	64	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002358, -103.1734560
B22	7/10/2019	B22	Scrape	48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002355, -103.1732978
B23	7/10/2019	B23	Scrape	64	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002474, -103.1731583
B24	7/10/2019	B24	Scrape	128	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002491, -103.1730034
B25	7/10/2019	B25	Scrape	128	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002607, -103.1728317
B26	7/10/2019	B26	Scrape	96	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002491, -103.1726721
B27	7/10/2019	B27	Scrape	32	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5002587, -103.1720414
B28	7/10/2019	B28	Scrape	32	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50028, -103.17250
B29	7/10/2019	B29	Scrape	96	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50032, -103.17248
B30	7/10/2019	B30	Scrape	48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50037, -103.17245
B31	7/10/2019	B31	Scrape	48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50040, -103.17240
B32	7/10/2019	B32	Scrape	64	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50044, -103.17237
B33	7/10/2019	B33	Scrape	64	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50048, -103.17231
B34	7/10/2019	B34	Scrape	48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50053, -103.17232
B35	7/10/2019	B35	Scrape	112	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50058, -103.17228
B36	7/10/2019	B36	Scrape	416	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50065, -103.17222
B37	7/10/2019	B37	Scrape	192	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50072, -103.17219
B38	7/11/2019	B38	Scrape	16	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5007569, -103.1721333
B39	7/11/2019	B39	Scrape	144	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5008429, -103.1720445
B40	7/11/2019	B40	Scrape	672	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5009147, -103.1720750
B41	7/11/2019	B41	Scrape	112	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5009195, -103.1720901
B42	7/11/2019	B42	Scrape	160	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5009888, -103.1720489
B43	7/11/2019	B43	Scrape	2560	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5010213, -103.1720271
B44	7/11/2019	B44	Scrape	1740	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5010844, -103.1720324
B45	7/11/2019	B45	Scrape	3320	<0.050	<0.050	<0.150	<0.300	<10.0	18.6	32.5011239, -103.1720009
B46	7/11/2019	B46	Scrape	544	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5011836, -103.1720053
B47	7/11/2019	B47	Scrape	3280	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5012320, -103.1720116
B48	7/11/2019	B48	Scrape	2200	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5012574, -103.1719375
B49	7/11/2019	B49	Scrape	2480	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5013383, -103.1719412
B50	7/11/2019	B50	Scrape	1420	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5013810, -103.1719456
B51	7/11/2019	B51	Scrape	608	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5014095, -103.1718973
B52 Comp	7/11/2019	B52 Comp		48	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.501497, -103.171757
B52 @ Surface	7/11/2019	B52 @ Surface	Scrape	80	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.501497, -103.171757
B52 @ 1'	7/11/2019	B52 @ 1'	1'	352	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.501497, -103.171757
B54	7/19/2019	BF54	Scrape	1960	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.50097713, -103.1718983
B55	7/19/2019	BF55	Scrape	1800	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.5011025, -103.1717364
B56	9/10/2019	B56	Scrape	752	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	32.4989509, -103.174162



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

July 15, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 07/10/19 15:22.

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/ga/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 1 (H902363-01)
BTEX 80218

mg/kg

Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 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	1620	16.0	07/12/2019	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	07/12/2019	ND	204	102	200	4.89	
DRO >C10-C28*	15.3	10.0	07/12/2019	ND	219	109	200	8.98	
EXT DRO >C28-C36	13.8	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 92.3 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 2 (H902363-02)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 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	208	16.0	07/12/2019	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	07/12/2019	ND	204	102	200	4.89	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	219	109	200	8.98	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 3 (H902363-03)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 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	704	16.0	07/12/2019	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	07/12/2019	ND	204	102	200	4.89	
DRO >C10-C28*	34.7	10.0	07/12/2019	ND	219	109	200	8.98	
EXT DRO >C28-C36	16.9	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 92.9 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 4 (H902363-04)
BTEX 80218

mg/kg

Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	896	16.0	07/12/2019	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	07/12/2019	ND	204	102	200	4.89	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	219	109	200	8.98	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 90.6 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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Caley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 5 (H902363-05)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	07/12/2019	ND	400	100	400	0.00	QM-07

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/12/2019	ND	202	101	200	2.97	
DRO >C10-C28*	264	10.0	07/12/2019	ND	200	100	200	1.40	
EXT DRO >C28-C36	446	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 6 (H902363-06)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	07/12/2019	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	07/12/2019	ND	202	101	200	2.97	
DRO >C10-C28*	33.2	10.0	07/12/2019	ND	200	100	200	1.40	
EXT DRO >C28-C36	27.8	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 7 (H902363-07)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 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	1650	16.0	07/12/2019	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	07/12/2019	ND	202	101	200	2.97	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	200	100	200	1.40	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 8 (H902363-08)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 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	2000	16.0	07/12/2019	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	07/13/2019	ND	196	97.8	200	1.52	
DRO >C10-C28*	12.2	10.0	07/13/2019	ND	192	95.9	200	0.132	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

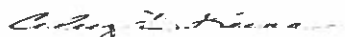
Surrogate: 1-Chlorooctane 85.4 % 41-142

Surrogate: 1-Chlorooctadecane 86.1 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 9 (H902363-09)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	3640	16.0	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 80.5 % 41-142

Surrogate: 1-Chlorooctadecane 84.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 10 (H902363-10)

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	208	16.0	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 79.2 % 41-142

Surrogate: 1-Chlorooctadecane 82.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/10/2019
 Reported: 07/15/2019
 Project Name: WBDU #23
 Project Number: WEST INJECTION
 Project Location: NOT GIVEN

 Sampling Date: 07/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 11 (H902363-11)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

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

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

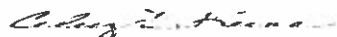
Surrogate: 1-Chlorooctane 69.9 % 41-142

Surrogate: 1-Chlorooctadecane 72.7 % 37.6-147

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/10/2019
 Reported: 07/15/2019
 Project Name: WBDU #23
 Project Number: WEST INJECTION
 Project Location: NOT GIVEN

 Sampling Date: 07/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B 12 (H902363-12)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 79.7 % 41-142

Surrogate: 1-Chlorooctadecane 81.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 13 (H902363-13)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/12/2019	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	07/11/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/11/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/11/2019	ND					

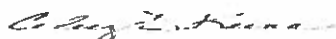
Surrogate: 1-Chlorooctane 84.4 % 41-142

Surrogate: 1-Chlorooctadecane 87.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 14 (H902363-14)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/12/2019	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	07/11/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/11/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/11/2019	ND					

Surrogate: 1-Chlorooctane 81.2 % 41-142

Surrogate: 1-Chlorooctadecane 84.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 15 (H902363-15)

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	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	128	16.0	07/12/2019	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	07/11/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/11/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/11/2019	ND					

Surrogate: 1-Chlorooctane 85.8 % 41-142

Surrogate: 1-Chlorooctadecane 86.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 16 (H902363-16)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	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	96.0	16.0	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 61.9 % 41-142

Surrogate: 1-Chlorooctadecane 67.3 % 37 6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 17 (H902363-17)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 62.3 % 41-142

Surrogate: 1-Chlorooctadecane 69.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 18 (H902363-18)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

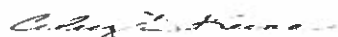
Surrogate: 1-Chlorooctane 65.2 % 41-142

Surrogate: 1-Chlorooctadecane 73.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 19 (H902363-19)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 84.4 % 41-142

Surrogate: 1-Chlorooctadecane 93.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 20 (H902363-20)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/12/2019	ND	2.05	102	2.00	3.36	
Toluene*	<0.050	0.050	07/12/2019	ND	2.08	104	2.00	2.76	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.96	98.2	2.00	1.67	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.95	99.2	6.00	1.90	
Total BTEX	<0.300	0.300	07/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 89.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 21 (H902363-21)

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	07/11/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/11/2019	0.057	1.97	98.4	2.00	6.70	QR-03
Ethylbenzene*	<0.050	0.050	07/11/2019	ND	1.92	95.8	2.00	6.86	QR-03
Total Xylenes*	<0.150	0.150	07/11/2019	ND	5.89	98.2	6.00	7.14	QR-03
Total BTEX	<0.300	0.300	07/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 111 % 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

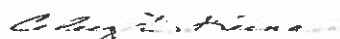
Surrogate: 1-Chlorooctane 90.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 22 (H902363-22)

BTEX 80218		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	07/11/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/11/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/11/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/11/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 138 % 73.3-129

Chloride, SM4500Cl-8		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 82.7 % 41-142

Surrogate: 1-Chlorooctadecane 87.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 23 (H902363-23)

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	07/11/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/11/2019	0.057	1.97	98.4	2.00	6.70	GC-NC
Ethylbenzene*	<0.050	0.050	07/11/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/11/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 142 % 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 80.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 24 (H902363-24)

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	07/12/2019	ND	1.92	95.9	2.00	7.95		
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70		
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86		
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14		
Total BTEX	<0.300	0.300	07/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 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	128	16.0	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 85.8 % 41-142

Surrogate: 1-Chlorooctadecane 87.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 25 (H902363-25)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 111 % 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	07/12/2019	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	07/12/2019	ND	194	97.2	200	3.48	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	197	98.6	200	1.83	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 74.0 % 41-142

Surrogate: 1-Chlorooctadecane 78.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 26 (H902363-26)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 82.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 27 (H902363-27)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 110 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

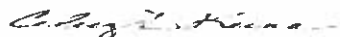
Surrogate: 1-Chlorooctane 90.6 % 41-142

Surrogate: 1-Chlorooctadecane 92.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 28 (H902363-28)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

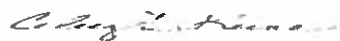
Surrogate: 1-Chlorooctane 97.1 % 41-142

Surrogate: 1-Chlorotadecane 102 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 29 (H902363-29)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 91.9 % 37.6-147

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 30 (H902363-30)
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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 89.5 % 41-142

Surrogate: 1-Chlorooctadecane 95.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 31 (H902363-31)

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	07/12/2019	ND	1.92	95.9	2.00	7.95	
Toluene*	<0.050	0.050	07/12/2019	0.057	1.97	98.4	2.00	6.70	
Ethylbenzene*	<0.050	0.050	07/12/2019	ND	1.92	95.8	2.00	6.86	
Total Xylenes*	<0.150	0.150	07/12/2019	ND	5.89	98.2	6.00	7.14	
Total BTEX	<0.300	0.300	07/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 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	07/12/2019	ND	432	108	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 72.7 % 41-142

Surrogate: 1-Chlorooctadecane 80.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 32 (H902363-32)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.2 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 33 (H902363-33)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 88.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.0 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 34 (H902363-34)

BTEX 80218			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 100 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 35 (H902363-35)

BTEX 80218			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 91.6 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 36 (H902363-36)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/10/2019
Reported: 07/15/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/10/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 37 (H902363-37)

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/13/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 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	07/12/2019	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	07/13/2019	ND	207	103	200	0.619	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	208	104	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 89.8 % 41-142

Surrogate: 1-Chlorooctadecane 94.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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Celey D. Keene, Lab Director/Quality Manager

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

Company Name:		BILL TO		ANALYSIS REQUEST	
Project Manager:		P.O. #:			
Address:		Company:			
City:	State:	Attn:			
Phone #:	Fax #:	Address:			
Project #:	Project Owner:	City:	State:	Zip:	
Project Name:		Phone #:			
Project Location:		Fax #:			
Sampler Name:	MATRIX	PRESERV.	SAMPLING		
FOR LAB USE ONLY					
Lab I.D.	Sample I.D.	(S)LAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER
				SOIL	OIL
				SLUDGE	OTHER
				ACID/BASE	(ICE) COOL
				OTHER	
		DATE	TIME		
H9025105	1	7/10	8:17	CI	
2	1	14:19	14:19	Ext TPH	
3	1	14:20	14:20	BTEX	
4	1	14:23	14:23		
5	1	14:25	14:25		
6	1	14:27	14:27		
7	1	14:29	14:29		
8	1	14:31	14:31		
9	1	14:33	14:33		
10	1	14:35	14:35		

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Relinquished By: _____ **Date:** 7/10 **Received By:** _____ **Time:** 15:00

Relinquished By: _____ **Date:** _____ **Received By:** _____ **Time:** _____

Delivered By: (Circle One) **3.8c** **#47** **Cool Impact** **Checked BY:** _____ **Initials** **VQ**

Remarks: Email Results



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Academy Brown</u>				BILL TO				ANALYSIS REQUEST			
Project Manager: <u>Debbie 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>WBDY 83 W. Hwy.</u>				Phone #:							
Sample Name: <u>Old Pussukle</u>				Fax #:							
FOR LAB USE ONLY				PRESERV.				SAMPLING			
Lab I.D.				MATRIX							
Sample I.D.				(G)RAB OR (C)OMP							
H907563				# CONTAINERS							
11				GROUNDWATER							
12				WASTEWATER							
13				SOIL							
14				OIL							
15				SLUDGE							
16				OTHER							
17				ACID/BASE:							
18				(ICE) COOL							
19				OTHER							
20				DATE							
21				TIME							
22				11:37							
23				14:39							
24				14:41							
25				14:42							
26				14:45							
27				14:47							
28				14:49							
29				14:51							
30				14:55							
31				14:55							

PLEASE NOTE: Liability and Damages. Cardholder's liability and damage exclusion remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. 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 incidents or consequential damages, including without limitation, business interruption, 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 furnished by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [Signature] **Date:** 7/10 **Received By:** [Signature] **Date:** 7/10

Relinquished By: [Signature] **Date:** 7/10 **Received By:** [Signature] **Date:** 7/10

Delivered By: (Circle One) 3.8c #97 **Sample Condition** ☒ Cool ☐ Intact ☐ Pres ☐ Yes ☐ No ☐ No ☐ No **CHECKED BY:** [Signature] **(Initials)** Y.S.

REMARKS: Email Results



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Academy</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>W804 23 W. Ingleton</u>				Phone #:							
Sample Name: <u>Del. Causculer Jr.</u>				Fax #:							
FOR LAB USE ONLY				MATRIX				PRESERV			
				☒ (G)RAB OR ☒ (C)OMR							
				# CONTAINERS							
				GROUNDWATER							
				WASTEWATER							
				SOIL							
				OIL							
				SLUDGE							
				OTHER :							
				ACID/BASE :							
				ICE/ COOL							
				OTHER :							
				DATE							
				TIME							
				CI							
				EXT TPH							
				BTEX							

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMR	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE :	ICE/ COOL	OTHER :	DATE	TIME	CI	EXT TPH	BTEX
H902363																	
21	B 21		1										7/10	14:57	/	/	/
22	B 22		1											14:59	/	/	/
23	B 23		1											15:04	/	/	/
24	B 24		1											15:03	/	/	/
25	B 25		1											15:05	/	/	/
26	B 26		1											15:07	/	/	/
27	B 27		1											15:09	/	/	/

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Relinquished By: Lawrence Decker **Date:** 7/10 **Received By:** Lawrence Decker **Date:** 5:02

Relinquished By: Lawrence Decker **Date:** 7/10 **Received By:** Lawrence Decker **Date:** 5:02

Delivered By: (Circle One) 3.8c #97 **Sample Condition** ☒ Cool ☐ Intact ☐ Yes ☐ No **CHECKED BY:** Y.E. **REMARKS:** Email Results

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(575) 393-2326 FAX (575) 393-2476

Company Name: APACHE CORPORATION				BILL TO		ANALYSIS REQUEST									
Project Manager: BLAIR BAKER				P.O. #:											
Address:				Company:											
City:	State:	Zip:	Attn:												
Phone #:	Fax #:	Project Owner:		Address:											
Project #:				City:											
Project Name: WBDU Q3				State:		Zip:									
Project Location: WBDU Q3				Phone #:											
Sample Name: JEFF BRUM				Fax #:											
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING							
				(G)RAB OR (C)OMP.											
				# CONTAINERS											
Lab I.D. Sample I.D.				GROUNDWATER											
				WASTEWATER											
				SOIL											
				OIL											
				SLUDGE											
				OTHER :											
				ACID/BASE:											
				ICE / COOL											
				OTHER :											
				DATE		TIME									
HPO2363				B28		7-10-15		2:01		CL					
28				B28		7-10-15		2:02		BTX					
29				B29				2:05		EX. TPH					
30				B30				2:05							
31				B31				2:05							
32				B32				2:05							
33				B33				2:06							
34				B34				2:07							
35				B35				2:09							
36				B36				2:10							
37				B37		7-10-15		2:11							

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Relinquished By: JEFF BRUM		Date: 7-10-15		Received By: LAWRENCE DUBOIS	
Time: 2:08					
Date:					
Time:					

Delivered By: (Circle One) **3.8c #97**

Sampler - UPS - Bus - Other:

Sample Condition		CHECKED BY:	
Cool ☐	Intact ☒	(Initials)	
Yes ☐	No ☐		

REMARKS:

July 16, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 07/11/19 14:05.

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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 38 (H902381-01)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	07/12/2019	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	07/12/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 87.8 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 39 (H902381-02)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	07/12/2019	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	07/12/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 80.8 % 41-142

Surrogate: 1-Chlorooctadecane 92.9 % 37.6-147

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 40 (H902381-03)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 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	672	16.0	07/12/2019	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	07/12/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 81.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.5 % 37.6-147

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 41 (H902381-04)

BTEX 80218			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	07/12/2019	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	07/12/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/12/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/12/2019	ND					

Surrogate: 1-Chlorooctane 76.1 % 41-142

Surrogate: 1-Chlorooctadecane 85.8 % 37.6-147

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 42 (H902381-05)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	07/12/2019	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	07/13/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 86.0 % 41-142

Surrogate: 1-Chlorooctadecane 97.0 % 37.6-147

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 43 (H902381-06)
BTEX 8021B

mg/kg

Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	2560	16.0	07/12/2019	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	07/13/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 73.8 % 41-142

Surrogate: 1-Chlorooctadecane 84.7 % 37.6-147

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 44 (H902381-07)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1740	16.0	07/12/2019	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	07/13/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 84.1 % 41-142

Surrogate: 1-Chlorooctadecane 95.9 % 37.6-147

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Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 45 (H902381-08)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3320	16.0	07/12/2019	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	07/13/2019	ND	204	102	200	0.644	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	213	106	200	1.39	
EXT DRO >C28-C36	18.6	10.0	07/13/2019	ND					

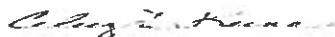
Surrogate: 1-Chlorooctane 79.1 % 41-142

Surrogate: 1-Chlorooctadecane 90.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 46 (H902381-09)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 98.7 % 41-142

Surrogate: 1-Chlorooctadecane 99.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 47 (H902381-10)

BTEX 80218			mg/kg							
			Analyzed By: ms							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66		
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37		
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79		
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14		
Total BTEX	<0.300	0.300	07/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (P/E) 99.5 % 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	3280	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 92.2 % 41-142

Surrogate: 1-Chlorooctadecane 92.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 48 (H902381-11)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2019	ND	2.13	106	2.00	4.66	
Toluene*	<0.050	0.050	07/14/2019	ND	2.06	103	2.00	3.37	
Ethylbenzene*	<0.050	0.050	07/14/2019	ND	1.96	97.9	2.00	3.79	
Total Xylenes*	<0.150	0.150	07/14/2019	ND	5.88	98.0	6.00	4.14	
Total BTEX	<0.300	0.300	07/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	2200	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 96.1 % 41-142

Surrogate: 1-Chlorooctadecane 98.0 % 37.6-147

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Celestine Keene

Celestine D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 49 (H902381-12)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.0 % 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	2480	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 98.0 % 41-142

Surrogate: 1-Chlorooctadecane 98.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 50 (H902381-13)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.3 % 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	1420	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

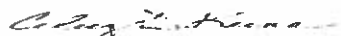
Surrogate: 1-Chlorooctane 99.3 % 41-142

Surrogate: 1-Chlorooctadecane 98.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 51 (H902381-14)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.9 % 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	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 94.0 % 41-142

Surrogate: 1-Chlorooctadecane 93.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SW COMPOSITE (H902381-15)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 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	112	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

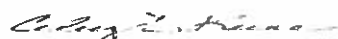
Surrogate: 1-Chlorooctane 92.5 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EW COMPOSITE (H902381-16)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.6 % 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	208	16.0	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 94.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 2 (H902381-17)
BTEX 8021B

mg/kg

Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 100 % 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	07/12/2019	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	07/13/2019	ND	203	102	200	1.09	
DRO >C10-C28*	<10.0	10.0	07/13/2019	ND	198	98.9	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	07/13/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 96.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 5 (H902381-18)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 99.9 % 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	400	16.0	07/12/2019	ND	400	100	400	0.00	

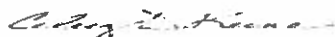
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2019	ND	193	96.7	200	2.74	
DRO >C10-C28*	<10.0	10.0	07/15/2019	ND	201	101	200	3.71	
EXT DRO >C28-C36	<10.0	10.0	07/15/2019	ND					

Surrogate: 1-Chlorooctane 58.4 % 41-142

Surrogate: 1-Chlorooctadecane 65.5 % 37.6-147

Cardinal Laboratories
***=Accredited Analyte**

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 52 COMP (H902381-19)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 100 % 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	07/12/2019	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	07/15/2019	ND	193	96.7	200	2.74	
DRO >C10-C28*	<10.0	10.0	07/15/2019	ND	201	101	200	3.71	
EXT DRO >C28-C36	<10.0	10.0	07/15/2019	ND					

Surrogate: 1-Chlorooctane 74.5 % 41-142

Surrogate: 1-Chlorooctadecane 85.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 52 @ SURFACE (H902381-20)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 100 % 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	07/12/2019	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	07/15/2019	ND	193	96.7	200	2.74	
DRO >C10-C28*	<10.0	10.0	07/15/2019	ND	201	101	200	3.71	
EXT DRO >C28-C36	<10.0	10.0	07/15/2019	ND					

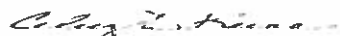
Surrogate: 1-Chlorooctane 81.0 % 41-142

Surrogate: 1-Chlorooctadecane 94.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/11/2019
Reported: 07/16/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 52 @ 1' (H902381-21)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	3.25	
Toluene*	<0.050	0.050	07/13/2019	ND	2.04	102	2.00	2.73	
Ethylbenzene*	<0.050	0.050	07/13/2019	ND	1.91	95.5	2.00	1.97	
Total Xylenes*	<0.150	0.150	07/13/2019	ND	5.72	95.3	6.00	1.91	
Total BTEX	<0.300	0.300	07/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.6 % 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	352	16.0	07/12/2019	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	07/15/2019	ND	193	96.7	200	2.74	
DRO >C10-C28*	<10.0	10.0	07/15/2019	ND	201	101	200	3.71	
EXT DRO >C28-C36	<10.0	10.0	07/15/2019	ND					

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 93.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>Apacur 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>				Address:							
Phone #:				City:							
Fax #:				State:							
Project #:				Zip:							
Project Name:				Phone #:							
Project Location: <u>WBAU B3 W. Tyeet</u>				Fax #:							
Sampler Name: <u>Joe Gueseler</u>											
FOR LAB USE ONLY											

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Ext TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER				
HA02381		C	1							7/11	9:05		
1	38												
2	34												
3	210												
4	41												
5	42												
6	43												
7	44												
8	45												
9	46												
10	47												

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Relinquished By: <u>Joe Gueseler</u> Time: <u>7:10</u> Date: <u>7/10</u>	Received By: <u>Joe Gueseler</u> Time: <u>14:00</u> Date: <u>7/10</u>	Phone Result: ☐ Yes ☐ No Add'l Phone #: _____ Fax Result: ☐ Yes ☐ No Add'l Fax #: _____
---	--	--

Delivered By: (Circle One) 200 **UPS** **Bus** **Other:** 200

Sample Condition: ☐ Cool ☐ Intact ☐ Yes ☐ No **CHECKED BY:** VG

REMARKS: Final Results.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apacorp Corp.				BILL TO				ANALYSIS REQUEST			
Project Manager: Sherry Brown				P.O. #:							
Address:				Company:							
City: Hobbs				State: NM				Zip: 88400			
Phone #: _____				Fax #: _____				Attn: _____			
Project #: _____				Project Owner:				Address: _____			
Project Name:				City: _____				State: _____ Zip: _____			
Project Location: WBDR 83 w. Tyeu.				Phone #:							
Sampler Name: Joe Quindia				Fax #:							

FOR LAB USE ONLY		Sample I.D.		(G)RAB OR (C)OMF		# CONTAINERS		MATRIX					PRESERV.		SAMPLING	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMF	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE	ICEY COOL	OTHER:	DATE	TIME		
H902381		☒	1			☒					☒		7/11	9:25	☒	
	11 B 48	☒	1											9:27	☒	
	12 B 49	☒	1											9:27	☒	
	13 B 50	☒	1											9:31	☒	
	14 B 51	☒	1											11:50	☒	
	15 SW Composite	☒	1											11:58	☒	
	16 SW Composite	☒	1													

PLEASE NOTE: Liability and Damages. Cardholder'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 analysis. All claims including those for negligence and any other causes 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: _____		Date: 7/11		Received By: _____		Date: 7/11	
Relinquished By: _____		Time: 14:05		Received By: _____		Time: _____	

Delivered By: (Circle One)	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Cool ☒ Intact ☒	VB
2001 #97	Yes ☒ No ☐	VB

REMARKS: _____

Emil Rubelts.

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

[illegible]

July 22, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 07/17/19 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/ga/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/17/2019
Reported: 07/22/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/17/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WEST WALL @ 2' COM. (H902458-01)

BTEX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/20/2019	ND	1.95	97.6	2.00	0.626	
Toluene*	<0.050	0.050	07/20/2019	ND	2.00	100	2.00	1.58	
Ethylbenzene*	<0.050	0.050	07/20/2019	ND	1.88	93.8	2.00	2.03	
Total Xylenes*	<0.150	0.150	07/20/2019	ND	5.62	93.7	6.00	2.47	
Total BTEX	<0.300	0.300	07/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/18/2019	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	07/18/2019	ND	195	97.3	200	0.325	
DRO >C10-C28*	<10.0	10.0	07/18/2019	ND	204	102	200	4.21	
EXT DRO >C28-C36	<10.0	10.0	07/18/2019	ND					

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 124 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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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.
CL	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.



Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

July 22, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 07/18/19 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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/18/2019
Reported: 07/22/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 6 (H902469-01)

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	07/19/2019	ND	2.22	111	2.00	2.55	
Toluene*	<0.050	0.050	07/19/2019	ND	2.15	108	2.00	1.19	
Ethylbenzene*	<0.050	0.050	07/19/2019	ND	2.27	113	2.00	1.10	
Total Xylenes*	<0.150	0.150	07/19/2019	ND	6.67	111	6.00	1.15	
Total BTEX	<0.300	0.300	07/19/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/19/2019	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	07/19/2019	ND	214	107	200	1.93	
DRO >C10-C28*	<10.0	10.0	07/19/2019	ND	202	101	200	3.59	
EXT DRO >C28-C36	<10.0	10.0	07/19/2019	ND					

Surrogate: 1-Chlorooctane 72.9 % 41-142

Surrogate: 1-Chlorooctadecane 72.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/18/2019
Reported: 07/22/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 7 (H902469-02)

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	07/19/2019	ND	2.22	111	2.00	2.55	
Toluene*	<0.050	0.050	07/19/2019	ND	2.15	108	2.00	1.19	
Ethylbenzene*	<0.050	0.050	07/19/2019	ND	2.27	113	2.00	1.10	
Total Xylenes*	<0.150	0.150	07/19/2019	ND	6.67	111	6.00	1.15	
Total BTEX	<0.300	0.300	07/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 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	07/19/2019	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	07/19/2019	ND	226	113	200	0.171	
DRO >C10-C28*	<10.0	10.0	07/19/2019	ND	219	109	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	07/19/2019	ND					

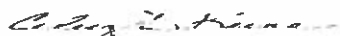
Surrogate: 1-Chlorooctane 118 % 41-142

Surrogate: 1-Chlorooctadecane 127 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/18/2019
Reported: 07/22/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 8 (H902469-03)

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	07/19/2019	ND	2.22	111	2.00	2.55	
Toluene*	<0.050	0.050	07/19/2019	ND	2.15	108	2.00	1.19	
Ethylbenzene*	<0.050	0.050	07/19/2019	ND	2.27	113	2.00	1.10	
Total Xylenes*	<0.150	0.150	07/19/2019	ND	6.67	111	6.00	1.15	
Total BTEX	<0.300	0.300	07/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 113 % 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	07/19/2019	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	07/19/2019	ND	226	113	200	0.171	
DRO >C10-C28*	<10.0	10.0	07/19/2019	ND	219	109	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	07/19/2019	ND					

Surrogate: 1-Chlorooctane 68.7 % 41-142

Surrogate: 1-Chlorooctadecane 70.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/18/2019
Reported: 07/22/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/18/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W 9 (H902469-04)

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	07/19/2019	ND	2.22	111	2.00	2.55	
Toluene*	<0.050	0.050	07/19/2019	ND	2.15	108	2.00	1.19	
Ethylbenzene*	<0.050	0.050	07/19/2019	ND	2.27	113	2.00	1.10	
Total Xylenes*	<0.150	0.150	07/19/2019	ND	6.67	111	6.00	1.15	
Total BTEX	<0.300	0.300	07/19/2019	ND					

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

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/19/2019	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	07/19/2019	ND	226	113	200	0.171	
DRO >C10-C28*	<10.0	10.0	07/19/2019	ND	219	109	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	07/19/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 91.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside 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

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

[illegible]

July 25, 2019

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 07/19/19 13:45.

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

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 10 (H902491-01)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 72.0 % 41-142

Surrogate: 1-Chlorooctadecane 77.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 11 (H902491-02)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 78.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/19/2019
 Reported: 07/25/2019
 Project Name: WBDU #23
 Project Number: WEST INJECTION
 Project Location: NOT GIVEN

 Sampling Date: 07/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W # 25 (H902491-03)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 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	16.0	16.0	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 81.7 % 41-142

Surrogate: 1-Chlorooctadecane 91.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 26 (H902491-04)

BTEX 80218		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 81.3 % 41-142

Surrogate: 1-Chlorooctadecane 87.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/19/2019
 Reported: 07/25/2019
 Project Name: WBDU #23
 Project Number: WEST INJECTION
 Project Location: NOT GIVEN

 Sampling Date: 07/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W # 27 (H902491-05)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 82.6 % 41-142

Surrogate: 1-Chlorooctadecane 85.8 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 12 (H902491-06)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 72.4 % 41-142

Surrogate: 1-Chlorooctadecane 76.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 13 (H902491-07)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.9 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 80.4 % 41-142

Surrogate: 1-Chlorooctadecane 85.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 14 (H902491-08)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/23/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/23/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

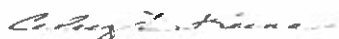
Surrogate: 1-Chlorooctane 84.9 % 41-142

Surrogate: 1-Chlorooctadecane 91.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 22 (H902491-09)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/23/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/23/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

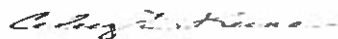
Surrogate: 1-Chlorooctane 73.8 % 41-142

Surrogate: 1-Chlorooctadecane 78.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 23 (H902491-10)

BTX 80218			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/23/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/23/2019	ND	6.14	102	6.00	0.513	
Total BTX	<0.300	0.300	07/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

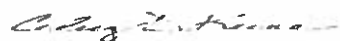
Surrogate: 1-Chlorooctane 77.6 % 41-142

Surrogate: 1-Chlorooctadecane 89.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 24 (H902491-11)

BTEX 8021B			mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	1.42		
Toluene*	<0.050	0.050	07/23/2019	ND	2.14	107	2.00	0.661		
Ethylbenzene*	<0.050	0.050	07/23/2019	ND	2.04	102	2.00	0.118		
Total Xylenes*	<0.150	0.150	07/23/2019	ND	6.14	102	6.00	0.513		
Total BTEX	<0.300	0.300	07/23/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

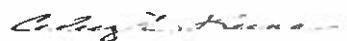
Surrogate: 1-Chlorooctane 83.9 % 41-142

Surrogate: 1-Chlorooctadecane 93.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 15 (H902491-12)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 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	07/22/2019	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	07/22/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	215	10.0	07/22/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/22/2019	ND					

Surrogate: 1-Chlorooctane 56.0 % 41-142

Surrogate: 1-Chlorooctadecane 73.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 16 (H902491-13)

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	07/22/2019	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	07/23/2019	ND	194	96.8	200	1.17	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	184	92.2	200	0.398	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 74.4 % 41-142

Surrogate: 1-Chlorooctadecane 84.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 17 (H902491-14)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 106 % 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	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 77.9 % 41-142

Surrogate: 1-Chlorooctadecane 83.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 18 (H902491-15)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 109 % 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	800	16.0	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 76.3 % 41-142

Surrogate: 1-Chlorooctadecane 80.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 19 (H902491-16)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 81.5 % 41-142

Surrogate: 1-Chlorooctadecane 90.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 20 (H902491-17)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 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	320	16.0	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 79.5 % 41-142

Surrogate: 1-Chlorooctadecane 86.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: W # 21 (H902491-18)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	ND					

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

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	157	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	19.9	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 78.2 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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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: 07/19/2019
 Reported: 07/25/2019
 Project Name: WBDU #23
 Project Number: WEST INJECTION
 Project Location: NOT GIVEN

 Sampling Date: 07/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BF 54 (H902491-19)

BTEX 8021B			mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42		
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661		
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118		
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513		
Total BTEX	<0.300	0.300	07/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	1960	16.0	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.5 % 37.6-147

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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: 07/19/2019
Reported: 07/25/2019
Project Name: WBDU #23
Project Number: WEST INJECTION
Project Location: NOT GIVEN

Sampling Date: 07/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BF 55 (H902491-20)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	1.42	
Toluene*	<0.050	0.050	07/24/2019	ND	2.14	107	2.00	0.661	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	2.04	102	2.00	0.118	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	6.14	102	6.00	0.513	
Total BTEX	<0.300	0.300	07/24/2019	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	1800	16.0	07/22/2019	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	07/23/2019	ND	199	99.6	200	1.14	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	194	96.8	200	1.23	
EXT DRO >C28-C36	10.7	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 82.2 % 41-142

Surrogate: 1-Chlorooctadecane 87.2 % 37.6-147

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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

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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>Acetec</u>		P.O. #:		BILL TO												ANALYSIS REQUEST															
Project Manager: <u>Self Brown</u>		Company:																													
Address:		Attn:																													
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>		Address:																													
Phone #:		City:																													
Project #:		State:																													
Project Name:		Zip:																													
Project Location: <u>OBOL 13 W Fay</u>		Phone #:																													
Sample Name: <u>Joe Brown</u>		Fax #:																													
FOR LAB USE ONLY																															
Lab I.D. <u>1001 Sept 15</u> 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>H902491</u>		<u>7/15</u>		<u>8:00</u>																											
<u>1 W #10</u>																															
<u>2 W #11</u>																															
<u>3 W #25</u>																															
<u>4 W #24</u>																															
<u>5 W #27</u>																															
<u>6 W #12</u>																															
<u>7 W #13</u>																															
<u>8 W #14</u>																															
<u>9 W #22</u>																															
<u>10 W #23</u>																															

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Relinquished By: <u>Joe Brown</u>	Date: <u>2-19</u>	Received By: <u>Maria W. Brown</u>	Phone Result: ☐ Yes ☐ No ☐ Add'l Phone #:
Relinquished By: <u>Joe Brown</u>	Date: <u>12-15</u>	Received By: <u>Maria W. Brown</u>	Fax Result: ☐ Yes ☐ No ☐ Add'l Fax #:
REMARKS: <u>Final Results</u>			

Delivered By: (Circle One) <u>1.3c</u> <u>#97</u>	Sample Condition	CHECKED BY: (Initials) <u>VB</u>
Sampler - UPS - Bus - Other: <u>Inspected 1.7c</u>	Cool ☐ Intact ☐ <u>Yes</u> ☐ <u>No</u>	



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Apache</u>		BILL TO	
Project Manager: <u>Jeffrey Brown</u>		P.O. #:	
Address:		Company:	
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>		Attn:	
Phone #:		Address:	
Fax #:		City:	
Project #:		State:	
Project Location: <u>WBPB 93 in Tugation</u>		Zip:	
Project Name:		Phone #:	
Sample Name: <u>See Quiscales</u>		Fax #:	
FOR LAB 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:	
		ICE/COOL	
		OTHER:	
		DATE	TIME
<u>H902491</u>	<u>11 W # 24</u>	<u>7/19</u>	<u>9:17</u>
<u>12 W # 15</u>	<u>11:06</u>	<u>1</u>	<u>1</u>
<u>13 W # 16</u>	<u>11:08</u>	<u>1</u>	<u>1</u>
<u>14 W # 17</u>	<u>11:10</u>	<u>1</u>	<u>1</u>
<u>15 W # 14</u>	<u>11:12</u>	<u>1</u>	<u>1</u>
<u>16 W # 15</u>	<u>11:14</u>	<u>1</u>	<u>1</u>
<u>17 W # 30</u>	<u>11:16</u>	<u>1</u>	<u>1</u>
<u>18 W # 31</u>	<u>11:18</u>	<u>1</u>	<u>1</u>
<u>19 BS 54</u>	<u>11:28</u>	<u>1</u>	<u>1</u>
<u>20 BS 55</u>	<u>11:30</u>	<u>1</u>	<u>1</u>

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Relinquished By: Joe Quiscales Date: 7-19 Received By: Lawrence Albritton

Relinquished By: Joe Quiscales Date: 7-19 Received By: Lawrence Albritton

Delivered By: (Circle One) 1.34 # 497 Sample Condition: ☒ Cool ☐ Intact ☐ Broken ☐ No

Sampler - UPS - Bus - Other: Consistent 1.72 CHECKED BY: yo (Initials)

REMARKS: Envi 1 Results

September 11, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WBDU #23

Enclosed are the results of analyses for samples received by the laboratory on 09/10/19 13:42.

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

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: 09/11/2019
Project Name: WBDU #23
Project Number: WBDU 23
Project Location: NOT GIVEN

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

Sample ID: B 56 (H903120-01)

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	09/10/2019	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) 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	752	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	09/10/2019	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 64.0 % 41-142

Surrogate: 1-Chlorooctadecane 66.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 09/10/2019
 Reported: 09/11/2019
 Project Name: WBDU #23
 Project Number: WBDU 23
 Project Location: NOT GIVEN

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

Sample ID: W 28 (H903120-02)

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 (PIC) 90.6 % 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	<16.0	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	09/10/2019	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					

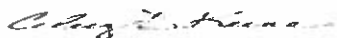
Surrogate: 1-Chlorooctane 85.3 % 41-142

Surrogate: 1-Chlorooctadecane 91.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 09/10/2019
 Reported: 09/11/2019
 Project Name: WBDU #23
 Project Number: WBDU 23
 Project Location: NOT GIVEN

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

Sample ID: W 29 (H903120-03)

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	2.06	103	2.00	3.82	
Toluene*	<0.050	0.050	09/11/2019	ND	2.07	103	2.00	4.16	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.08	104	2.00	3.74	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.21	103	6.00	3.49	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 92.0 % 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	16.0	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	09/10/2019	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 76.2 % 41-142

Surrogate: 1-Chlorooctadecane 80.1 % 37.6-147

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* = Accredited Analyte

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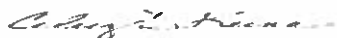
Notes and Definitions

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.
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

[illegible]

WBAI 23 w injection

WW1 @ 2'

$$11.1/30.2 = 2.72 \times .06$$

WW2 @ 2'

$$11.1/30.0 = 2.70 \times .18$$

WW3 @ 2'

$$11.1/30.1 = 2.71 \times .08$$

WW4 @ 2'

$$11.2/30.3 = 2.70 \times .10$$

WW5 @ 2'

$$11.1/30.2 = 2.72 \times .12$$

Composite

$$11.0/30.2 = 2.74 \times 0.10 = \textcircled{2.73} \checkmark$$

Check

July 11 2019

WBDU 23 w. Injection

EW 1

$$11.0/30.2 = 2.74 \times .18 = 493 \checkmark$$

EW 2

$$11.3/30.4 = 2.69 \times .08 = 215 \checkmark$$

EW 3

$$11.0/30.1 = 2.73 \times .12 = 327 \checkmark$$

EW 4

$$11.2/30.0 = 2.67 \times .05 = 133 \checkmark$$

EW 5

$$11.1/30.2 = 2.72 \times 0.04 = 109 \checkmark$$

- WW 1

$$11.2/30.2 = 2.69 \times .14 = 376 \checkmark$$

- WW 2

$$11.3/30.0 = 2.65 \times 0.62 = 1,801 \times$$

- WW 3

$$11.3/30.2 = 2.67 \times 0.16 = 415 \checkmark$$

- WW 4

$$11.2/31.8 = 2.70 \times 0.44 = 1,302 \times$$

WW 5

$$11.3/30.3 = 2.60 \times .07 = 181 \checkmark$$

SW

$$11.2/30.3 = 2.70 \times 0.06 = 161 \checkmark$$

EW 6

$$11.3/30.3 = 2.60 \times 0.09 = 233 \checkmark$$

$$w_{22} \quad 32.5002329, -103.1728197$$

$$11.3/30.1 = 2.66 \times .03 = 79 \checkmark$$

$$w_{23} \quad 32.5002188, -103.1733135$$

$$11.1/30.1 = 2.71 \times .03 = 81 \checkmark$$

$$w_{24} \quad 32.5002231, -103.1737879$$

$$11.1/30.0 = 2.70 \times .05 = 134 \checkmark$$

$$w_{15} \quad 32.5009936, -103.1721602$$

$$11.1/30.1 = 2.71 \times 0.10 = 270 \checkmark$$

$$w_{16} \quad 32.5004175, -103.1719268$$

$$11.0/30.3 = 2.75 \times 0.10 = 274 \checkmark$$

$$w_{17} \quad 32.5015241, -103.1717246$$

$$11.0/30.1 = 2.73 \times .02 = 54 \checkmark$$

$$w_{18} \quad 32.5012006, -103.1719013$$

$$11.2/30.2 = 2.69 \times .30 = 968 \checkmark$$

$$w_{19} \quad 32.5011282, -103.1717045$$

$$11.2/30.0 = 2.67 \times .40 = 1000 \checkmark$$

$$w_{20} \quad 32.5010344, -103.1716784$$

$$11.3/30.1 = 2.66 \times .09 = 186 \checkmark$$

$$w_{21} \quad 32.5008034, -103.1719759$$

$$11.2/30.1 = 2.68 \times .05 = 133 \checkmark$$

$$w_{54} \quad 32.5009713, -103.1718983$$

$$11.8/30.3 = 2.68 \times .44 = 1178$$

$$w_{55} \quad 32.5011025, -103.1717364$$

$$11.1/30.2 = 2.72 \times .67 = 1821 \checkmark$$

WBDU 23 GPS Samples Final Floor Samples.

B1	32.4988358	-103.1744581	(B40)	32.5000147	-103.1720750
B2	32.4988290	-103.1743110	(B41)	32.5009195	-103.1720991
B3	32.49890102	-103.1744682	(B42)	32.5009888	-103.1720489
B4	32.4989022	-103.1743053	(B43)	32.5010213	-103.1720871
B5	32.4989531	-103.1744729	(B44)	32.5010844	-103.1720324
B6	32.4989823	-103.1743160	(B45)	32.5011239	-103.1720009
B7	32.4990425	-103.1743747	(B46)	32.5011836	-103.1720053
B8	32.4991480	-103.1743442	(B47)	32.5012320	-103.1720116
B9	32.4991788	-103.1743250	(B48)	32.5012574	-103.1719375
B10	32.4992523	-103.1741725	(B49)	32.5013383	-103.1719412
B11	32.4993617	-103.1741302	(B50)	32.5013810	-103.1719456
B12	32.4995246	-103.1741380	(B51)	32.5014095	-103.1718973
B13	32.4991680	-103.1741353			
B14	32.4997958	-103.1741282			
B15	32.4999194	-103.1741178			
B16	32.5000698	-103.1741129			
B17	32.5002403	-103.1741121			
B18	32.5002338	-103.1739874			
B19	32.5002329	-103.1738349			
B20	32.5002114	-103.1736495			
B21	32.5002358	-103.1734560			
B22	32.5002355	-103.1732978			
B23	32.5002474	-103.1731583			
B24	32.5002491	-103.1730034			
B25	32.5002107	-103.1728317			
B26	32.5002491	-103.1726721			
B27	32.5002587	-103.1720414	-	103.172653	
B28	32.5007569	-103.1721333			
B29	32.5008429	-103.1720445			

WBDU 32 (GPS: 32.49885 -103.17441) Photos



Photo of Two Foot Excavation Facing North 11/19/18



Photo of Lease Road Scrap Facing West 11/19/18



Photo of Lease Pad Scrap Facing South East 11/19/18



Photo of Lease Pad Scrap Facing North West 11/19/18



Photo of Pasture Area Backfilled 7/24/19