303 Veterans Airpark Lane Midland, TX 79705

Remediation Plan

July 24, 2020

Re: NEDU 206
Case # NRM201084974

Background:

On 4/7/2020 a release occurred due to an isolation valve failed resulting in the loss of produced water. The release is located (GPS: 32.51335, - 103.15306) north of Eunice in unit letter K section 3 township 21S range 37E. A groundwater survey was conducted utilizing NMOSE wells of record indicates water is greater than 50 feet. On 4/8/2020 surface samples were collected and submitted to a commercial laboratory for chloride, TPH, and BTEX. On 7/13/2020 samples were collected in 1 foot intervals utilizing a backhoe. All samples collected were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX.

Remediation Plan:

Apache Corporation proposes that the release area be excavated to a depth of 1 foot around SP 1, 2, 3, and 4. All excavated material (248 yards) will be hauled to an NMOCD approved facility. After the excavation is complete final 5 point bottom composite samples will be collected not to exceed 500 square feet. Final 5 point wall composite samples will be collected not to exceed 200 square feet. The lease road associated with SP 5 final surface bottom composite samples will be collected not to exceed 500 square feet. Horizontal surface composite samples will be collected not to exceed 200 square feet. All final samples will be submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Once analytical data confirms that the excavation meet table 1 standards for releases 51-100 feet to groundwater the excavation will be backfilled with clean imported caliche for the lease pad and clean imported topsoil for the pasture areas and countered to the surrounding area. The pasture area will be reseed with guidance from the surface owner. The remediation will be completed within one year of NMOCD approval of the plan.

Enclosed: Corrected C-141, Groundwater data, Maps, Sample Data, and Laboratory Results

Submitted by;

Bruce Baker

Environmental Technician
larry.baker@apachecorp.com
Cell# 432-631-6982
Off# 575-393-7106

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	51-100 (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 ½-mile of the lateral extents of the release
- ☑ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☑ Topographic/Aerial maps
- ☑ Laboratory data including chain of custody

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Larry Baker Title: Environmental Tech SR.

Signature: Larry Baker Date: 7/27/2020

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: Larry Baker Title: Environmental Tech SR.

Signature: Larry Baker Date: 7/27/2020

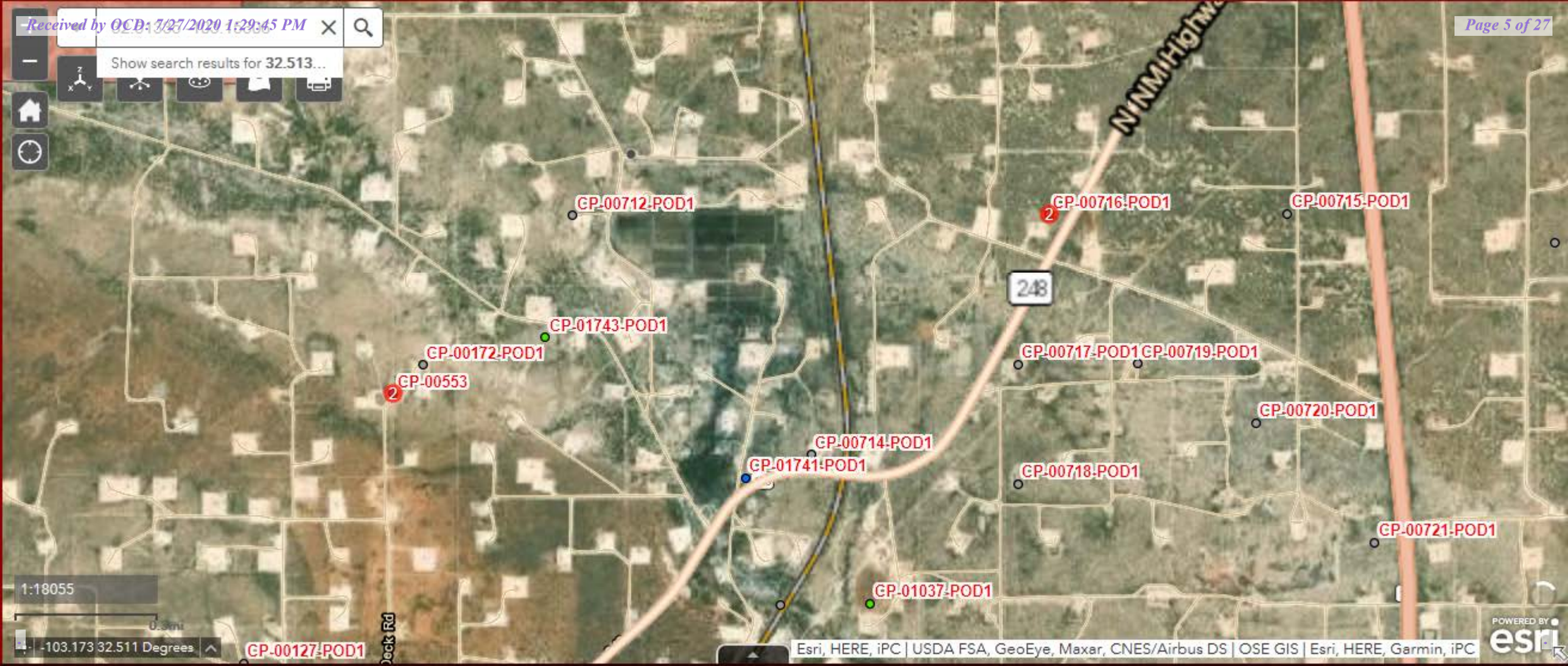
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____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248
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CP-00717-POD1
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CP-01741-POD1
CP-00718-POD1
CP-00721-POD1
CP-01037-POD1
CP-00127-POD1
1:18055
-103.173 32.511 Degrees
Esri, HERE, iPC | USDA FSA, GeoEye, Maxar, CNES/Airbus DS | OSE GIS | Esri, HERE, Garmin, iPC
POWERED BY esri

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	CP 00553	2	4		04	21S	37E	672700	3598022*

Driller License:	208	**Driller Company:**	VAN NOY, W.L.		
Driller Name:	VAN NOY, W.L.				
Drill Start Date:	09/30/1976	**Drill Finish Date:**	09/30/1976	**Plug Date:**	
Log File Date:	01/10/1979	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	6.63	**Depth Well:**	90 feet	**Depth Water:**	75 feet

Water Bearing Stratifications:	Top	Bottom	Description
	75	85	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	75	89

***UTM location was derived from PLSS - see Help**

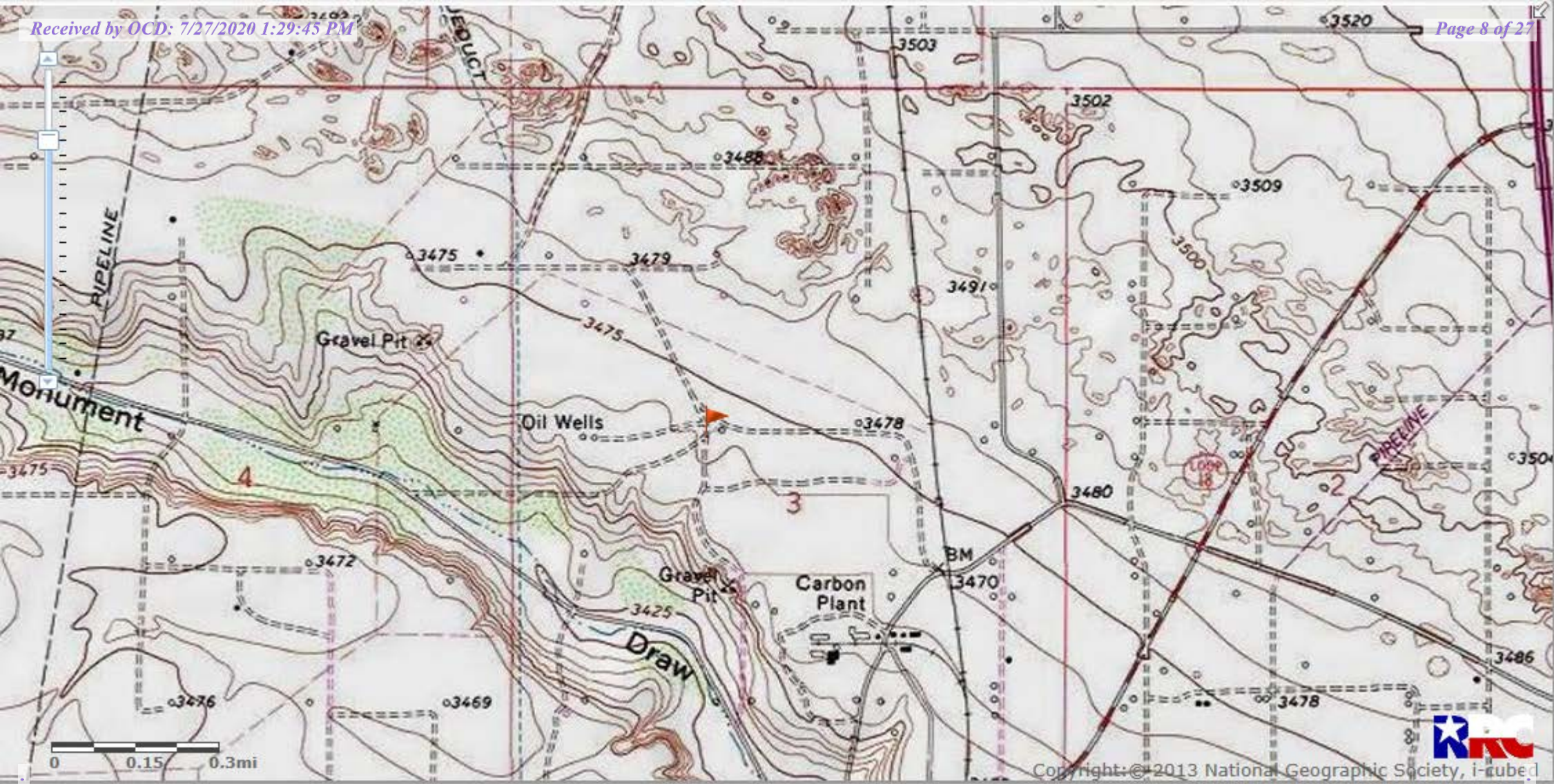
New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	CP 01486 POD1	4	2	1	05	21S	37E	670333	3599085

Driller License:	1044	**Driller Company:**	EADES WELL DRILLING & PUMP SERVICE		
Driller Name:	ALAN G EADES				
Drill Start Date:	02/02/2016	**Drill Finish Date:**	02/02/2016	**Plug Date:**	
Log File Date:	02/05/2016	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	5.14	**Depth Well:**	140 feet	**Depth Water:**	52 feet

Water Bearing Stratifications:	Top	Bottom	Description
	52	105	Sandstone/Gravel/Conglomerate
	105	135	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	100	140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3503
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Gravel Pit
Monument
Oil Wells
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3472
Gravel Pit
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3486
PIPELINE
PIPELINE
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Copyright: © 2013 National Geographic Society, i-cubed
Lat: 32.523772, Long: -103.174968 (WGS 84)


SP3
SP2
NEDU 206
SP1
SP4
SP5
96 ft
© 2020 Google
Google earth

NEDU Injection Line

Complete List

Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
4/8/2020	SP1	S	1560	<0.050	<0.050	0.083	0.370	0.453	20.5	1000	172	32.51338 -103.15316
7/13/2020		1'	368	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
4/8/2020	SP2	S	3680	0.327	0.761	1.02	2.83	4.93	<200	4030	531	32.51352 -103.15325
7/13/2020		1'	128	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
4/8/2020	SP3	S	5120	0.099	0.245	0.250	0.716	1.31	14.3	135	14.5	32.51352 -103.15339
7/13/2020		1'	272	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
4/8/2020	SP4	S	8560	1.32	4.86	5.85	15.2	27.2	809	10700	1550	32.51331 -103.15283
7/13/2020		1'	528	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
7/13/2020		2'	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	14.6	<10.0	
4/8/2020	SP5	S	7680	2.40	8.06	7.17	17	34.6	63.9	188	19.1	32.51325 -103.15269
7/13/2020		1'	80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	

CARDINAL Laboratories

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

April 14, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #206

Enclosed are the results of analyses for samples received by the laboratory on 04/08/20 15:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	04/08/2020	Sampling Date:	04/08/2020
Reported:	04/14/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 1 @ SURFACE (H001046-01)

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	04/09/2020	ND	1.91	95.3	2.00	0.0296	
Toluene*	<0.050	0.050	04/09/2020	ND	1.92	95.8	2.00	0.285	
Ethylbenzene*	**0.083**	0.050	04/09/2020	ND	1.93	96.5	2.00	0.467	
Total Xylenes*	**0.370**	0.150	04/09/2020	ND	5.66	94.3	6.00	0.263	
Total BTEX	**0.453**	0.300	04/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *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	**1560**	16.0	04/09/2020	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*	**20.5**	10.0	04/09/2020	ND	197	98.4	200	0.0569	
DRO >C10-C28*	**1000**	10.0	04/09/2020	ND	206	103	200	2.28	
EXT DRO >C28-C36	**172**	10.0	04/09/2020	ND					

Surrogate: 1-Chlorooctane *112 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *148 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	04/08/2020	Sampling Date:	04/08/2020
Reported:	04/14/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 2 @ SURFACE (H001046-02)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.327**	0.050	04/09/2020	ND	1.91	95.3	2.00	0.0296	
Toluene*	**0.761**	0.050	04/09/2020	ND	1.92	95.8	2.00	0.285	
Ethylbenzene*	**1.02**	0.050	04/09/2020	ND	1.93	96.5	2.00	0.467	
Total Xylenes*	**2.83**	0.150	04/09/2020	ND	5.66	94.3	6.00	0.263	
Total BTEX	**4.93**	0.300	04/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *139 %* *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	**3680**	16.0	04/09/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<200	200	04/09/2020	ND	197	98.4	200	0.0569	
DRO >C10-C28*	**4030**	200	04/09/2020	ND	206	103	200	2.28	
EXT DRO >C28-C36	**531**	200	04/09/2020	ND					

Surrogate: 1-Chlorooctane *143 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *228 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	04/08/2020	Sampling Date:	04/08/2020
Reported:	04/14/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 3 @ SURFACE (H001046-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.099**	0.050	04/09/2020	ND	1.91	95.3	2.00	0.0296	
Toluene*	**0.245**	0.050	04/09/2020	ND	1.92	95.8	2.00	0.285	
Ethylbenzene*	**0.250**	0.050	04/09/2020	ND	1.93	96.5	2.00	0.467	
Total Xylenes*	**0.716**	0.150	04/09/2020	ND	5.66	94.3	6.00	0.263	
Total BTEX	**1.31**	0.300	04/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *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	**5120**	16.0	04/09/2020	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*	**14.3**	10.0	04/09/2020	ND	197	98.4	200	0.0569	
DRO >C10-C28*	**135**	10.0	04/09/2020	ND	206	103	200	2.28	
EXT DRO >C28-C36	**14.5**	10.0	04/09/2020	ND					

Surrogate: 1-Chlorooctane *95.9 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *111 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	04/08/2020	Sampling Date:	04/08/2020
Reported:	04/14/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 4 @ SURFACE (H001046-04)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**1.32**	0.050	04/09/2020	ND	1.91	95.3	2.00	0.0296	
Toluene*	**4.86**	0.050	04/09/2020	ND	1.92	95.8	2.00	0.285	
Ethylbenzene*	**5.85**	0.050	04/09/2020	ND	1.93	96.5	2.00	0.467	
Total Xylenes*	**15.2**	0.150	04/09/2020	ND	5.66	94.3	6.00	0.263	
Total BTEX	**27.2**	0.300	04/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID	*256 %*	*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	**8560**	16.0	04/09/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**809**	200	04/09/2020	ND	197	98.4	200	0.0569	
DRO >C10-C28*	**10700**	200	04/09/2020	ND	206	103	200	2.28	
EXT DRO >C28-C36	**1550**	200	04/09/2020	ND					

Surrogate: 1-Chlorooctane	*186 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*373 %*	*42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	04/08/2020	Sampling Date:	04/08/2020
Reported:	04/14/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 5 @ SURFACE (H001046-05)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**2.40**	0.050	04/09/2020	ND	1.91	95.3	2.00	0.0296	
Toluene*	**8.06**	0.050	04/09/2020	ND	1.92	95.8	2.00	0.285	
Ethylbenzene*	**7.17**	0.050	04/09/2020	ND	1.93	96.5	2.00	0.467	
Total Xylenes*	**17.0**	0.150	04/09/2020	ND	5.66	94.3	6.00	0.263	
Total BTEX	**34.6**	0.300	04/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *223 %* *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	**7680**	16.0	04/09/2020	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*	**63.9**	10.0	04/09/2020	ND	197	98.4	200	0.0569	
DRO >C10-C28*	**188**	10.0	04/09/2020	ND	206	103	200	2.28	
EXT DRO >C28-C36	**19.1**	10.0	04/09/2020	ND					

Surrogate: 1-Chlorooctane *103 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *116 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Apache Corporation	BILL TO	
Project Manager:	Bruce Baker	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	NEDU 206	State: Zip:	
Project Location:	NEDU 206	Phone #:	
Sampler Name:	Jeff Bynum	Fax #:	

ANALYSIS REQUEST

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	CL -	BTEX	EXT. TPH
4001046																	
1	SP1 @ Surface	G											4/8/20	1115	✓	✓	✓
2	SP2 @ Surface	G											4/8/20	1120	✓	✓	✓
3	SP3 @ Surface	G											4/8/20	125	✓	✓	✓
4	SP4 @ Surface	G											4/8/20	1130	✓	✓	✓
5	SP5 @ Surface	G											4/8/20	1135	✓	✓	✓

Relinquished By: Jeff Bynum	Date: 4/8/20 Time: 1510	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 4.1 Corrected Temp. °C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO
Turnaround Time: ☑ Standard ☐ Rush	Thermometer ID #97 Correction Factor +0.4 °C	Bacteria (only) Sample Condition Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.0

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

CARDINAL Laboratories

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

July 15, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #206

Enclosed are the results of analyses for samples received by the laboratory on 07/13/20 15:28.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. 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 accreditated through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 1 @ 1' (H001828-01)

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	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**368**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	<10.0	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *84.3 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *87.4 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 2 @ 1' (H001828-02)

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	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	<10.0	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *98.1 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *101 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 3 @ 1' (H001828-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	<10.0	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *91.3 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *92.8 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 4 @ 1' (H001828-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**528**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	<10.0	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *101 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *105 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 4 @ 2' (H001828-05)

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	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	**14.6**	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *88.8 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *89.9 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	07/13/2020	Sampling Date:	07/13/2020
Reported:	07/15/2020	Sampling Type:	Soil
Project Name:	NEDU #206	Sampling Condition:	Cool & Intact
Project Number:	NEDU #206	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP 5 @ 1' (H001828-06)

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	07/14/2020	ND	1.86	92.9	2.00	6.35	
Toluene*	<0.050	0.050	07/14/2020	ND	1.87	93.3	2.00	6.58	
Ethylbenzene*	<0.050	0.050	07/14/2020	ND	1.88	93.9	2.00	6.65	
Total Xylenes*	<0.150	0.150	07/14/2020	ND	5.41	90.2	6.00	6.73	
Total BTEX	<0.300	0.300	07/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	07/14/2020	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	07/14/2020	ND	198	98.9	200	1.72	
DRO >C10-C28*	<10.0	10.0	07/14/2020	ND	182	90.8	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	07/14/2020	ND					

Surrogate: 1-Chlorooctane *92.7 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *97.2 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Apache Corporation
Project Manager:	Bruce Baker
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	NEDU 206
Project Location:	NEDU 206
Sampler Name:	Jeff Brown

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State: Zip:	
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	SAMPLING TIME	CL	BTEX	EXT. TPH
H001828 1	SP1 @ 1'		1			✓							7/13/20	1130	✓	✓	✓
2	SP2 @ 1'		1			✓								1132			
3	SP3 @ 1'		1			✓								1134			
4	SP4 @ 1'		1			✓								1136			
5	SP4 @ 2'		1			✓								1148			
6	SP5 @ 1'		1			✓							7/13/20	1138	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental 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: Jeff Brown	Date: 7/13/20 Time: 1528	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	All Results are emailed. Please provide Email address: REMARKS:

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 2.4 Corrected Temp. °C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO.	Turnaround Time: Standard ☑ Rush ☐ Thermometer ID #113 Correction Factor None

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.1 06/04/20

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