BEFORE THE OIL CONSERVATION COMMISSION EVIDENTIARY HEARING

JANUARY 16 – 17, 2025

CASE NO. 24912

EAST BLINEBRY DRINKARD UNIT NO. 37 WELL, INCIDENT NO. NDHR1922141227, PERMIT NO. 1RP-5636

LEA COUNTY, NEW MEXICO

APACHE CORPORATION

APACHE CORPORATION'S PRE-HEARING STATEMENT

Apache Corporation ("Apache" or "Applicant"), (OGRID No. 873), through its undersigned attorneys, files its Pre-hearing Statement pursuant to 19.15.4.13.B NMAC.

APPEARANCES

APPLICANT

ATTORNEYS

Apache Corporation

Dalva L. Moellenberg Samantha H. Catalano Gallagher & Kennedy, P.A. 1239 Paseo de Peralta Santa Fe, New Mexico 87501 TEL: (505) 982-9523

TEL: (505) 982-9523 FAX: (505) 983-6043

APPLICANT'S STATEMENT OF CASE

I. Background

Applicant seeks an order (a) striking the Oil Conservation Division's ("OCD") July 24, 2024 Conditions of Approval to Apache's May 8, 2024 Scope of Work for Additional Investigation; and (b) approving Apache's September 23, 2024 Additional Groundwater Delineation Work Plan with no Conditions. This cause stems from EBDU No. 37, Incident No. NDHR1922141227 (1RP-5636). Apache is the operator of the East Blinebry Drinkard Unit #037 well, also known as "EBDU #37" ("the Well"), API No. 30-025-06556, a water injection well, located in Section 13, Township 21 South, Range 37 East, in Lea County, New Mexico. Said area is located approximately 3 miles northeast of Eunice, New Mexico.

On July 14, 2019, Apache filed its C-141 Initial Response Form, thereby notifying the OCD of a release at a pipeline junction approximately 720 feet east of the Well (the "Release"). Apache submitted its Remediation Plan to OCD on October 29, 2019, which was approved by

OCD with conditions on December 23, 2019. The OCD approved Apache's 1RP-5636 Annual Groundwater Monitoring report, which contained groundwater monitoring reports from December 2019 through December 2020, and approved Apache's plan to continue monitoring through 2021. OCD approved Apache's Closure Report for the soil delineation on August 27, 2021 without conditions.

Prior to August 8, 2022, the OCD requested that Apache conduct further delineation at the site and install two additional groundwater monitoring wells. Apache installed the requested wells on or about November 30, 2022. On April 4, 2023, Apache installed an additional four monitoring wells at the request of OCD. Between November 29, 2023 and December 13, 2023, Apache installed fourteen (14) additional monitoring wells at locations approved by the OCD. Apache collected samples from all existing wells and submitted the results to OCD in January, 2024.

Following receipt of the January groundwater monitoring results, OCD informally requested that Apache conduct additional site evaluations. After further discussions between Apache and OCD, Apache submitted its proposed Scope of Work for Additional Investigation to the OCD on May 8, 2024. This Scope of Work reflected what Apache and the OCD had agreed upon one week earlier, which was a plan to install five (5) additional groundwater monitoring wells and a proposal to discontinue groundwater monitoring at the windmill.

On July 24, 2024, the OCD approved Apache's May 8, 2024 Scope of Work but added several Conditions of Approval, including installation of thirteen (13) or fourteen (14) additional groundwater monitoring wells – which was far more than what Apache and OCD had agreed upon in May 2024. Apache believes that installation of an additional thirteen (13) or fourteen (14) wells is unnecessary to complete the delineation required and will necessarily slow down the delineation process. To that end, Apache's counsel notified the OCD on August 6, 2024 that Apache had

concerns with the Conditions of Approval. Apache and OCD thereafter conferred regarding Apache's objections to the Conditions of Approval, including engaging in dispute resolution pursuant to 19.15.30.20 NMAC. In a good-faith attempt to address OCD's concerns, Apache submitted a revised work plan on September 23, 2024. The OCD summarily rejected this work plan without providing any substantive commentary or insights as to why the plan was inadequate.

The OCD has thus far managed the Release under section 19.15.29 NMAC, the "spill rule." This rule contains specific requirements for assessment, characterization, delineation, restoration and closure of an affected site. The characterization requirements pursuant to section 19.15.29.12.A do not require operators to investigate unrelated potential sources of contamination. OCD's Conditions of Approval require Apache to install wells for this purpose, which is unrelated to the Release at issue here.

Within 24 hours of receiving Apache's revised work plan, the OCD notified Apache that it intended to cancel all further meetings with Apache and terminate its efforts to resolve both parties' concerns. The OCD stated that if Apache would not comply with the Conditions of Approval in full, then it should file an application for adjudicatory hearing within seven (7) days to contest the OCD's Conditions of Approval on Apache's May 8, 2024 Scope of Work. Otherwise, OCD threatened to file a Notice of Violation if Apache did not formally contest the Conditions of Approval. Faced with this "take it or leave it" proposition and refusal to discuss Apache's revised plan with our consultant and expert on these topics, Apache thereafter filed its Application for Adjudicatory Hearing pursuant to 19.15.4.8 on October 1, 2024.

II. Hearing Testimony

Apache intends to call three (3) witnesses to testify on its behalf at the January 16, 2025, Oil Conservation Commission ("OCC") hearing. Apache's witnesses include Larry (Bruce)

Baker, former Senior Environmental Technician for Apache; Barrett Bole, Geologist and Environmental Supervisor at Apache; and John Grams, Senior Geologist at Terracon.

a. Larry (Bruce) Baker

Mr. Baker has a Bachelor of Science in Wildlife and Fishery Science from Eastern New Mexico University and a Master of Jurisprudence in Energy and Environmental Law from Texas A&M University. He has been working as an Environmental Technician since 2007 and began working for Apache in 2013. Mr. Baker's role at Apache included managing all OCD reportable releases, reviewing and writing delineation plans, managing contracts to conduct delineation and/or remediation projects in accordance with OCD regulations, and writing or reviewing closure reports for submission to OCD.

Mr. Baker's testimony will provide factual background related to Apache's initial work at the Release site. Mr. Baker was initially involved in this matter, as he was notified by an EHS technician of the Release and subsequently filed the C-141 initial response form with the OCD on July 26, 2019. Mr. Baker will testify about Apache's initial response to the Release and provide factual background about the initial remediation plan. Mr. Baker managed the impacted soil removal, liner installation and clean soil backfill project at the Release site and has first-hand knowledge of the project. Mr. Baker will further testify regarding correspondence between Apache and OCD on the current delineation plan that is at issue. Mr. Baker will additionally testify regarding the groundwater delineation and Apache's monitoring of groundwater through the drilling and installation of more than twenty groundwater monitoring wells and reporting to OCD. Mr. Baker may testify to any facts relevant to Apache's Application in this matter.

b. Barrett Bole

Mr. Bole is the Environmental Supervisor for Apache. He obtained a Bachelor of Science in 1993 and a Master of Science in 1997 in Geology from Sul Ross State University in Alpine, Texas. Mr. Bole has worked as an Environmental Technician, consultant, and project manager since 1998. He has installed thousands of groundwater monitoring wells and soil borings during his career. As Environmental Supervisor at Apache, Mr. Bole specializes in soil and groundwater delineation and/or remediation, Tier 2 and SPCC Plan preparations, pipeline compliance, due diligence, and the supervision of other Apache employees.

Mr. Bole's testimony will primarily focus on Apache's groundwater delineation efforts and the company's response to the Release. Although Mr. Bole is familiar with the entire project at issue in this matter, Mr. Bole came to manage the groundwater portion of the project in December 2023, when Mr. Bole led the installation of groundwater monitoring wells TMW-11 through TMW-24. Mr. Bole's testimony will include the initial groundwater monitoring completed by Apache and the results of the monitoring. Mr. Bole will describe Apache's continued efforts to delineate the groundwater plume and to comply with the OCD's requirements. Mr. Bole will describe the 24 groundwater monitoring wells installed by Apache and Apache's work to develop and properly survey and sample these wells. Mr. Bole will speak to the discussions between Apache and the OCD in April and May 2024, where both parties agreed to drill an additional five (5) monitoring wells. Mr. Bole will testify regarding the OCD's Conditions of Approval to the work plan from July 24, 2024, wherein the OCD required Apache drill an additional thirteen (13) monitoring wells within 90 days, increasing the number of monitoring wells at the site to 42. Mr. Bole will also describe Apache's subsequent communications with OCD prior to the filing of Apache's Application for this adjudicatory hearing, including Apache's September 2024 submittal of a revised work plan. Mr. Bole will testify regarding the reasonableness of Apache's revised

work plan and explain why the proposed additional wells are sufficient to gather enough data to being practical and efficient removal of the contaminants. Mr. Bole may testify to any facts relevant to Apache's Application in this matter.

c. John Grams

Mr. Grams is a Senior Geologist at Terracon and is the lead Environmental Consultant working with Apache on this matter. Mr. Grams holds a Bachelor of Science and a Master of Science in Geology and is a registered Professional Geologist in Texas and Minnesota. Mr. Grams has worked on site investigation and delineation or remediation projects since 1988. The majority of his work has been in oil and gas site investigation, delineation, /or remediation. Mr. Grams is an expert in groundwater delineation and/or remediation.

Mr. Grams' testimony will focus on the hydrology and geology relevant to this matter. More specifically, Mr. Grams will testify regarding the Release and Apache's initial removal of impacted soils. Mr. Grams will testify regarding the initial groundwater sampling and boring sites drilled to delineate contamination at the site. He will discuss the results of the groundwater samples and explain Apache's reasoning in its determination to drill additional groundwater monitoring wells. Mr. Grams will speak to Apache's reporting of its groundwater monitoring results to Apache, and to the OCD's requests of Apache to drill additional monitoring wells. Mr. Grams will testify regarding the direction of groundwater flow as it is relevant to the location of effective groundwater monitoring wells and boring sites. Mr. Grams will testify regarding the New Mexico water quality standards and discuss the groundwater sampling results from Apache's monitoring wells. Mr. Grams will testify regarding the 2023 groundwater survey, including Apache's addition of seventeen (17) additional groundwater monitoring wells in 2023. Mr. Grams will discuss the results of the groundwater monitoring in 2023 as well. Mr. Grams' testimony will

include a discussion of the reasonableness and sufficiency of Apache's 24 groundwater monitoring wells. Mr. Grams will explain the March, 2024 groundwater monitoring results and the subsequent communications between OCD and Apache, in which the parties discussed installing additional monitoring wells. Mr. Grams will discuss Apache's May 8, 2024 Scope of Work Plan to address the OCD's concerns, and the OCD's Conditions of Approval, dated July 24, 2024. Mr. Grams will discuss the locations of the OCD's proposed additional monitoring wells, which exceed the number of wells Apache and OCD agreed upon in their April and May 2024 discussions. He will explain why some of the proposed wells are not necessary to characterize the existence and/or extent of groundwater contamination at the site. Further, Mr. Grams will explain that some of the OCD's proposed well locations are unlikely to provide useful data about the Release at issue. Mr. Grams will further testify regarding Apache's September 2024 work plan, which proposed an additional six monitoring wells and for soil borings at locations to address the OCD's concerns. Mr. Grams will testify regarding the importance of proceeding with an aquifer pump test to determine the hydrology at the site. Mr. Grams will also discuss the most recent groundwater monitoring results from the fourth quarter of 2024. Mr. Grams may testify to any facts relevant to Apache's Application in this matter.

Apache appreciates the opportunity to present its witnesses at this adjudicatory hearing.

APPLICANT'S PROPOSED EVIDENCE

WITNESS	ESTIMATED TIME	EXHIBITS
Name and Expertise		
Larry (Bruce) Baker, former	Approximately 1 hour	7
Senior Environmental		
Technician at Apache		
Barrett Bole, Geologist,	Approximately 1 hour	5
Environmental Supervisor at		
Apache		
John Grams, Senior	Approximately 2 hours	6
Geologist, Terracon		

PROCEDURAL MATTERS

Applicant filed its Application with the Oil Conservation Division for Adjudicatory Hearing on October 1, 2024. The Oil Conservation Division, by and through its Director, ordered that Case No. 24912 be referred to the Commission. The Oil Conservation Division is represented in this matter by Mr. Jesse K. Tremaine. Applicant is aware of no other procedural matters that should be disposed of here.

MASTER INDEX

Main Exhibit	Subexhibit/ Appendix	Material/Contents
A	Пррения	Larry (Bruce) Baker Resumé
	A-1	C-141, July 26, 2019
	A-2	1RP-5636 Remediation Plan, Oct. 29, 2019
	A-3	Email from Mark Larson to Bradford Billings, Dec. 23, 2019
	A-4	Email correspondence Mark Larson and Bradford Billings,
		Aug. 7-13, 2020
	A-5	Soil Closure Report, Dec. 31, 2020
	A-6	Email from Bradford Billings to Mark Larson, Sept. 1, 2020
В		Barrett Bole Resumé
	B-1	Email from Michael Bratcher to Larry Baker and Barrett
		Bole, Oct. 3, 2022
	B-2	2023 Q4 Groundwater Monitoring Report, March 27, 2024
	B-3	Scope of Work for Additional Investigation, May 8, 2024
	B-4	Additional Groundwater Delineation Work Plan, Sept. 23,
		2024
C		John Grams Resumé
	C-1	Annual Groundwater Monitoring Report, Dec. 23, 2020
	C-2	Scope of Work for Additional Monitoring Wells, April 5,
		2023
	C-3	2024 Q4 Groundwater Monitoring Report, Jan. 8, 2025
	C-4	EBDU 37 Groundwater Flow Map, 2024
	C-5	EBDU 37 Existing and Proposed Monitoring Well Map, 2024
D		Notice
		Record of Notice of Adjudicatory Hearing

Respectfully submitted,

GALLAGHER & KENNEDY, PA

/s/ Dalva L. Moellenberg
Dalva L. Moellenberg
Samantha H. Catalano
DLM@gknet.com
Samantha.catalano@gknet.com
1239 Paseo de Peralta
Santa Fe, NM 87501-2758
(505) 982-9523
Attorneys for Apache Corporation

APACHE CORPORATION

PRE-HEARING EXHIBITS

PART 1

EXHIBITS:

A, A-1, A-2, A-3, A-4

LARRY BRUCE BAKER JR.

(432)-250-8384

Email ·brucebaker433@gmail.com

PROFESSIONAL EXPERIENCE

07/2013 - PRESENT

ENVIRONMENTAL SR. SPECIALIST, APACHE CORPORATION

- Ensure environmental compliance with state and federal regulations.
- Communicate with state and federal regulatory agencies to include BLM, NMSLO, NMED, TCEQ, RRC etc.
- Address NORM licensing requirements for sites in NM with State Radiation Control Board
- Develop and pursue regulatory approval for remediation plans through state and federal
 offices.
- Manage the hiring and onboarding of contract labor for site remediation.
- Develop budgets and manage high-cost environmental projects.
- Analyze sample data and site information to create solutions for environmental issues.
- Lead compliance with the Endangered Species Act regarding the Lesser Prairie Chicken and Dunes Sagebrush Lizard.
- Familiar with Oil and Gas Air Quality Regulations and Permits.
- Conduct interim reclamation on BLM surface.
- Asist reclamation team on reports and procedures for pad reclamation.

01/2011 - 07/2013

PROJECT MANAGER, RICE ENVIRONMENTAL CONSULTING AND SAFETY

- Consult with clients to ensure compliance with state and federal regulations.
- Develop and propose remediation plans in correspondence with clients and regulatory agencies.
- Coordinate with contractors and project leaders to ensure remediation objectives are achieved
- Track cost to ensure projects stay within budget.
- Supervise, Mentor, and train employees.

05/2007 - 01/2011

ENVIRONMENTAL FIELD FOREMAN, RICE OPERATING COMPANY

- Coordinate with contractors on remediation projects.
- Provide site supervision of remediation projects.
- Interpret analytical data from soil samples.
- Draft reports to submit to regulatory agencies.

APACHE EXHIBIT A

EDUCATION

05/2005

BACHELOR OF SCIENCE, EASTERN NEW MEXICO UNIVERSITY

Major in Wildlife and Fishery Management

05/2021-5/2023

MASTER OF JURISPRUDENCE, TEXAS A&M COLLEGE OF LAW

Energy Law-Environmental Law and Energy Law and Policy

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	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # (assigned by OCD)
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM 88240	

Location of Release Source

Latitude: <u>W 32.4807053</u> Longitude: <u>N -103.123085</u>

(NAD 83 in decimal degrees to 5 decimal places)

Date Release Discovered: July 14, 2019 API # 3002506556 Unit Letter Section Township Range County	
Unit Letter Section Township Range County	
Unit Letter Section Township Range County	
E 12 21S 37E LEA	

Nature and Volume of Release

Materia	l(s) Released (Select all that apply and attach calculations or specific	c justification for the volumes provided below)		
Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)		
☐ Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)		
	Is the concentration of dissolved chloride 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				
Isolation valve failure du	e to internal corrosion.			

APACHE EXHIBIT A-1

Page 15 of 515

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?		
☐ Yes ⊠ No			
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Via email given to NM OCD by Bruce Baker, Senior Environmental Technician, Apache Corporation			
Initial Response			
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury			
☐ 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 re	ecoverable materials have been removed and managed appropriately.		
If all the actions described	d above have <u>not</u> been undertaken, explain why:		
Per 10 15 20 9 P. (4) NIMAC the regressible party may commone remediation immediately after discovery of a release. If remediation			
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>Jeff Broom</u> Title: <u>Environmental Technician</u>			
Signature:	Date: <u>07/24/2019</u>		
Email: <u>Jeffrey.Broom@a</u>	pachecorp.com Telephone: (432) 664-4677		
OCD Only			
Received by: <u>Dylan Ro</u>	Date: 08/09/2019		

State of New Mexico Oil Conservation Division

Incident ID	NDHR1922141227
District RP	IRP-5636
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?	47 (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?	X 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 X 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 X No
Did the release impact areas not on an exploration, development, production, or storage site?	Yes X 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
- X 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
- X Photographs including date and GIS information
- X Topographic/Aerial maps
- X 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.

Received by OCD: 1/9/2025 3:01:53 PM

State of New Mexico Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	<u> </u>
Application ID	

Released to Imaging: 1/9/2025 3:59:36 PM

regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a threaddition. OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name: Bruce Baker	Title: Sr. Environmental Tech
Signature: Bruce Bullet	Date: 10/29/2019
email: Larry.Baker@apachecorp.com	Telephone: 432-631-6982
OCD Only	
Received by:	Date:

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

State of New Mexico Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
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 con-	firmed as part of any request for deferral of remediation.						
Contamination must be in areas immediately under or around predeconstruction.	oduction equipment where remediation could cause a major facility						
Extents of contamination must be fully delineated.							
Contamination does not cause an imminent risk to human health	, the environment, or groundwater.						
	and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of						
Printed Name: Bruce Baker	Title: Sr. Environmental Tech						
Signature: Scher	Date: 10/29/2019						
email: Larry.Baker@apachecorp.com	Telephone: 432-631-6982						
OCD Only							
Received by:	Date:						
☐ Approved ☐ Approved with Attached Conditions of	Approval						
Signature:	Date:						

1RP-5636 REMEDIATION PLAN East Blinebry Drinkard Unit #37 Produced Water Spill Lea County, New Mexico

Latitude: N32.479569° Longitude: W-103.122061°

LAI Project No. 19-0112-49

October 29, 2019

Prepared for:

Apache Corporation 303 Veterans Airpark Lane Midland, Texas 79705

Prepared by: Larson & Associates, Inc. 507 North Marienfeld Street, Suite 205 Midland, Texas 79701

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

This Page Intentionally Left Blank

Ta	ᆸ	_	~£			
ıа	D	ıe	OI.	Con	ιe	าเร

1.0 INTRODUCTION	1
1.1 Background	1
1.2 Physical Setting	1
1.3 Remediation Levels	
2.0 DELINEATION	2
2.1 Soil Samples	2
2.2 Groundwater Samples	
3.0 REMEDIATION PLAN	

Tables

Table 1 Groundwater Sample Analytical Data Summary
Table 2 Cardinal Lab Sample Analytical Data Summary
Table 3 PBEL Analytical Data Summary

Figures

Figure 1 Topographic Map

Figure 2 Aerial Map Showing Soil Borings and Soil Samples
Figure 3 Aerial Map Showing Proposed Excavations and Depths

Appendices

Appendix A C-141

Appendix B Cardinal Laboratory Reports
Appendix C PBEL Laboratory Report

Appendix D Boring Logs and Monitoring Well Records

Appendix E DHL Laboratory Report

1RP-5636 Remediation Plan EBDU #37 Produced Water Release October 29, 2019

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this document on behalf of Apache Corporation (Apache) for remediation of a produced water spill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/4, SW/4), Section 13, Township 21 South and Range 37 East in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°. The surface ownership is private. Figure 1 presents a topographic map.

1.1 Background

The spill occurred at a pipeline junction and flowed west about 675 feet. Approximately 350 feet west of the origin the release flowed south about 450 feet before terminating in a low lying area. The volume of the release is unknown. A volume of fluid recovered is unknown. The release is considered major due to the unknown volume of the release. The release covered an area measuring approximately 25,000 square feet or approximately 0.57 acres. Apache submitted form C-141 to OCD on July 26, 2019. The release was assigned a remediation permit (RP) number of 1RP-5636. Appendix A presents the C-141.

On August 1, 2019, Apache personnel collected a groundwater sample from a windmill located about 300 feet south of the point of termination for the release. Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, analyzed the sample for benzene, toluene, ethylbenzene, xylenes (BTEX), chloride and total dissolved solids (TDS) by EPA SW-846 Method 8021B (BTEX) and titration methods for chloride and TDS. BTEX was not reported above the analytical method reporting limits (RL). Chloride and TDS were reported at 232 milligrams per liter (mg/L) and 732 mg/L, respectively, and below the New Mexico Water Quality Control Commission (WQCC) domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. Table 1 presents the groundwater laboratory analysis. Appendix B presents the Cardinal laboratory report.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,420 feet above mean sea level (msl);
- The topography slopes gently towards the southwest;
- The nearest surface water feature is a low lying area about 500 feet southwest of the release origin;
- The soils are designated as "Kimbrough gravelly loam, dry, 0 to 3 percent slopes", consisting of about 3 inches of gravelly loam, underlain by about 7 inches of loam and cemented material (caliche) to about 80 inches below ground surface (bgs), in descending order;
- The soil is not considered prime farmland;
- According to the Texas Bureau of Economic Geology Geologic Atlas of Texas Hobbs Sheet the surface geology is windblown sand (Holocene to middle Pleistocene) consisting of dark brown to grayish brown sand derived from the Blackwater Draw formation;
- Groundwater occurs in the Ogallala formation between about 55 feet bgs near the point of release to about 47 feet bgs near the point of termination;
- A fresh water well (windmill) is located about 300 feet south of the point of termination for the release and is not shown on the New Mexico Office of the State Engineer (OSE) website.

1RP-5636 Remediation Plan EBDU #37 Produced Water Spill October 29, 2019

1.3 Remediation Levels

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

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

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

2.0 DELINEATION

2.1 Soil Samples

Between July 17, 2019 and July 25, 2019, Apache collected soil samples at eleven (11) locations (SP1 through SP11) from about 1 foot (SP6) to 16 feet (SP7) feet below ground surface (bgs). Apache personnel analyzed the samples for chloride by field titration method. Cardinal analyzed select soil samples for BTEX, total petroleum hydrocarbons (TPH), including gasoline rage organics (GRO), diesel range organics (DRO) and oil range organics (ORO) by EPA SW-846 Methods 8021B and 8015D, respectively, and chloride by titration method SM4500cl-B.

Benzene and BTEX were reported below the laboratory analytical method reporting limits and New Mexico Oil Conservation Division (OCD) cleanup limits of 10 milligrams per kilogram (mg/Kg) and 50 mg/Kg in Table 1 (19.15.29 NMAC). Chloride exceeded the OCD cleanup limit of 10,000 mg/Kg in samples SP1, 0 feet (16,962.74 mg/kg), SP2, o feet (28,800 mg/Kg) and SP5, 0 and 6 feet (10,100 mg/Kg) where groundwater is greater than 50 feet bgs and less than 100 feet bgs. Chloride exceeded the OCD cleanup limit of 600 mg/Kg where groundwater is less than 50 feet bgs soil samples from SP6, SP7, SP8, SP9 and SP11.

Apache excavated soil to approximately twelve (12) feet bgs from an area measuring approximately 4,431 square feet in the low area located near the termination of the release where groundwater was recorded at about 47 feet bgs. Approximately 2,300 cubic yards of soil was hauled to Sundance Disposal located east of Eunice, New Mexico. On August 7 and 8, 2019, Apache personnel used a track hoe to collect soil samples from the bottom of the excavation to approximately 22 feet bgs. Cardinal analyzed the samples and reported chloride at 544 mg/Kg and below the OCD cleanup limit of 600 mg/Kg at approximately 21 feet bgs. Table 2 presents the Cardinal analytical data summary. Figure 2 presents the spill area, soil sample locations SP1 through SP13 and excavation. Appendix B presents the Cardinal laboratory reports.

On August 14 and 15, 2019, LAI personnel advanced four (4) borings (1, 2, 3 and 4) near the terminal end of the release. The borings were advanced with direct push technology (DPT) between approximately 28 feet bgs (2) and 40 feet bgs (4) to observe groundwater. On August 18, 2019, groundwater was not observed in the borings and the borings were plugged with bentonite chips.

1RP-5636 Remediation Plan EBDU #37 Produced Water Spill October 29, 2019

On August 27 and 28, 2019, Scarborough Drilling, Inc. (SDI), under direction from LAI, used an air rotary rig to drill three (3) borings (S-1 through S-3) along the south edge of the excavation. Soil samples were collected each 5 feet (i.e., 0, 5, 10, 15, 20, etc.) to approximately 40 and 50 feet bgs. The samples were delivered under preservation and chain of custody to Permian Basin Environmental Lab (PBEL) in Midland, Texas, which analyzed the samples for chloride by EPA Method 300. PBEL reported chloride below the OCD remediation limit (600 mg/Kg) in all samples. Groundwater was observed at about 46 feet bgs in boring S-1. Table 3 presents the PBEL analytical data summary. Figure 2 presents soil sample locations S-1 through S-3. Appendix C presents the PBEL report. Appendix D presents the boring logs.

On September 19, 2019, SDI advanced a borings (NB) north of the excavation (SP13) to approximately 48 feet bgs. LAI personnel collected soil samples at 45 and 48 feet bgs. Cardinal analyzed the samples for chloride by titration method SM4500cl-B and reported chloride 160 mg/Kg and 128 mg/Kg, in samples from 45 and 48 feet bgs, respectively. Table 2 presents the Cardinal laboratory analytical data summary. Figure 2 presents the boring location. Appendix B presents the Cardinal laboratory reports.

2.2 Groundwater Samples

On September 19, 2019, Scarborough drilled two (2) borings (TMW-1 and TMW2) for collecting groundwater samples. Boring TMW-1 was drilled south of the excavation and about 250 feet north of the windmill. Boring TMW-1 was drilled to approximately 71 feet bgs. Boring TMW-2 was drilled hydraulically up gradient (north) of the release to approximately 80 feet bgs. Temporary 2 inch threaded schedule 40 PVC casing and approximately 20 feet of 0.01 inch factory slotted screen was placed in the borings. The screens were positioned above and below the groundwater level observed during drilling. On September 23, 2019, groundwater was recorded at 46.18 feet bgs in well TMW-1 and 55.8 feet bgs in well TMW-2. The wells were developed by pumping with an electric submersible pump to remove fresh water introduced and sediment disturbed during drilling. Approximately 125 gallons of water were removed from each well and disposed in an OCD permitted Class II disposal well.

On September 24, 2019, LAI personnel collected groundwater samples with dedicated disposable bailers. The samples were delivered under preservation and chain of custody to DHL Analytical in Round Rock, Texas, which analyzed the samples for BTEX, chloride and TDS.

The laboratory reported BTEX less than the analytical method RL and WQCC human health standards in samples TMW-1 and TMW-2. Chloride and TDS were reported at was reported in TMW-1 at 37.4 mg/L and 400 mg/L, respectively, and below the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. Chloride and TDS were reported in TMW-2 (up gradient) at 338 mg/L and 1,220 mg/L, respectively, and above the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. Table 1 presents the groundwater sample analytical data summary. Figure 2 presents the boring locations. Appendix D presents the boring logs and monitoring well records. Appendix E presents the DHL laboratory report.

3.0 REMEDIATION PLAN

Apache proposes the following:

1. Excavate soil (Area 1) to 4 feet bgs between SP1 and SP13 depending on the depth and hardness of the caliche;

1RP-5636 Remediation Plan EBDU #37 Produced Water Spill October 29, 2019

- Collect soil samples for about every 200 square feet of the excavation sidewalls for analysis of BTEX, TPH and chloride;
- 3. Install 20 mill thickness polyethylene liner in bottom of excavation (Area 1), backfill with caliche to 2 feet bgs and to ground surface with clean soil containing chloride less than 600 mg/Kg;
- 4. Backfill excavation (Area 2) to approximately 5 feet bgs with caliche, to approximately 2 feet bgs with compacted clay and to surface with clean soil containing chloride less than 600 mg/Kg;
- 5. Seed excavations to landowner specifications;
- 6. Monitor groundwater quality in TMW-1 and TMW-2 on a quarterly (4 times per year) schedule for a period of two (2) years, analyze groundwater samples for BTEX, chloride and TDS and submit reports to OCD within 45 following receipt of the laboratory reports.

Figure 3 presents the excavation areas and depths.

Tables

Table 1 Groundwater Sample Analytical Data Summary Apache Corporation, EBDU 37 Lea County, New Mexico

Sample	Collection	Benzene	Toluene	Ethylbenzene	Xylenes	Chloride	TDS
	Date	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
'QCC Standar	d:	*0.01	*0.75	*0.75	*0.62	**250	**1,000
(') Windmill	8/1/2019	<0.001	<0.001	<0.001	<0.003	232	732
(²) TMW-1	9/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400
(²) TMW-2	9/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220

Notes:

- (') analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS)
- (²) analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride)

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

- < values denotes concentration is less than method reporting limit (RL).
- * Human health standard
- ** Domestic water quality standard

Table 2

Apache Laboratory Soil Sample Analytical Data Summary

Apache Corp., EBDU 37

Lea County, New Mexico

Sample	Depth	Collection	Status	Benzene	BTEX	C6 - C12	C12 - C28	C28 - C35	TPH	Chloride
•	(Feet)	Date		(mg/Kg	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Remediation	Level:			10	50			•	100	600
BG 1	0	07/19/2019	In-situ							<16.0
	1		In-situ	<0.05	<0.600	<10.0	91.5	43.3	134.8	528
	2		In-situ							32.0
	3		In-situ							16.0
	4		In-situ							80.0
SP1	0	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	16,962.74
	5		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	400
	10		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	96.0
SP2	0	07/25/2019	In-situ	<0.05	2.713	<10.0	<10.0	<10.0	<10.0	28,800
	5	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	1,150
	10	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	272
SP3	0	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	>10
	5	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	2,720
	10	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	192
	15	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	80
SP4	0	07/17/2019	In-situ							17,322
	1		In-situ							8,757
	2		In-situ							5,143
	3		In-situ							>2.0
	3.5		In-situ							4,876
	4		In-situ							5,128
SP5	0	07/19/2019	In-situ	<0.05	<0.600	<10.0	996	339	1,335	10,100
	2		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	5,200
	4		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	4,240
	6		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	10,100
	8		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	9,330

Table 2

Apache Laboratory Soil Sample Analytical Data Summary

Apache Corp., EBDU 37

Lea County, New Mexico

Sample	Depth	Collection	Status	Benzene	BTEX	C6 - C12	C12 - C28	C28 - C35	TPH	Chloride
•	(Feet)	Date		(mg/Kg	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Remediation	Level:			10	50				100	600
	10		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	3,840
	12		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	1,420
	14		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	3,532
SP6	0	07/19/2019	In-situ							>2.0
	1		In-situ							>2.0
SP7	0	07/22/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	>2.0
	2		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	3,089
	4		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	5,758
	6		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	6,777
	8		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	5,998
	10		In-situ	<0.05	< 0.600	<10.0	<10.0	<10.0	<10.0	3,748
	12		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	4,026
	14		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	3,781
	16		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	4,482
SP8	5	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	4,240
	10		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	2,240
	15		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	1,090
SP9	5	07/25/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	6,160
	10		In-situ	<0.05	< 0.600	<10.0	<10.0	<10.0	<10.0	5,520
	15		In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	2,800
SP10	5	07/25/2019	In-situ							6,621
	10		In-situ							7,173
SP11	5	07/25/2019	In-situ							7,745
	10		In-situ							7,053

Table 2

Apache Laboratory Soil Sample Analytical Data Summary

Apache Corp., EBDU 37

Lea County, New Mexico

Sample	Depth	Collection	Status	Benzene	BTEX	C6 - C12	C12 - C28	C28 - C35	TPH	Chloride
	(Feet)	Date		(mg/Kg	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Remediation	Level:			10	50				100	600
SP-13	15	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	2,880
(S-4/NB)	20	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	4,600
	25	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	3,120
	30	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	4,360
	35	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	5,280
	40	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	3,040
	45	09/19/2018	In-Situ							160
	48	09/19/2018	In-Situ							128
					Excavation	Samples				
В0	12	08/07/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	32.0
B1	12	08/07/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	32.0
B2	12	08/07/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	48.0
B10	12	08/07/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	16.0
B11	12	08/07/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	<16.0
B 15	13	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	720
	15	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	1,840
	17	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	1,950
	19	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	3,800
	21	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	544
	22	08/08/2019	In-situ	<0.05	<0.600	<10.0	<10.0	<10.0	<10.0	*3,440

Notes: analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by Method by EPA SW-846 Method 8021B (BTEX), 8015D (TPH) and SM4500cl-B (chloride) Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

Highlighted denotes concentration above chloride remediation level (600 mg/Kg) in Table 1 (19.15.29 NMAC)

<: denotes concentration less than analytical method reporting limit

 $^{{\}color{blue} *} \ \ \text{Represents possible cross contamination from trackhoe during sample collection}$

Table 3
LAI Analytical Data Summary
Apache Corp., EBDU 37
Lea County, New Mexico

Page 1 of 1

Sample	Depth	Collection	Status	Chloride
	(Feet)	Date	(mg/Kg)	(mg/Kg)
Remediation Level:				600
S-1	0	08/27/2019	In-situ	67.6
	5		In-situ	58.3
	10		In-situ	16.1
	15		In-situ	9.81
	20		In-situ	14.0
	25		In-situ	11.0
	30		In-situ	12.9
	35		In-situ	5.65
	40		In-situ	8.16
	45		In-situ	21.0
	50		In-situ	3.90
S-2	0	08/27/2019	In-situ	10.1
	5		In-situ	22.3
	10		In-situ	9.43
	15		In-situ	1.28
	20		In-situ	2.46
	25		In-situ	<1.06
	30		In-situ	3.67
	35		In-situ	5.10
	40		In-situ	2.89
S-3	0	08/27/2019	In-Situ	2.62
	5		In-Situ	1.68
	10		In-Situ	1.31
	15		In-Situ	<1.01
	20		In-Situ	1.24
	25		In-Situ	<1.05
	30		In-Situ	<1.08
	35		In-Situ	<1.09
	40		In-Situ	1.23

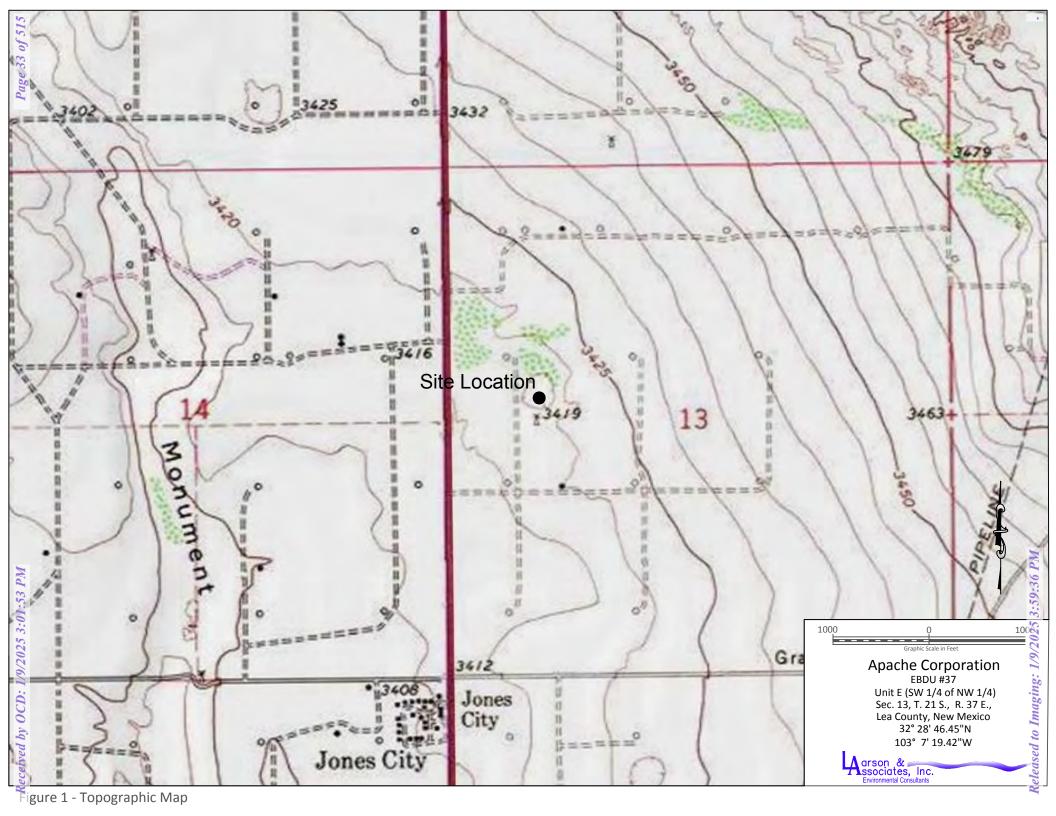
Notes: analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA Method 300

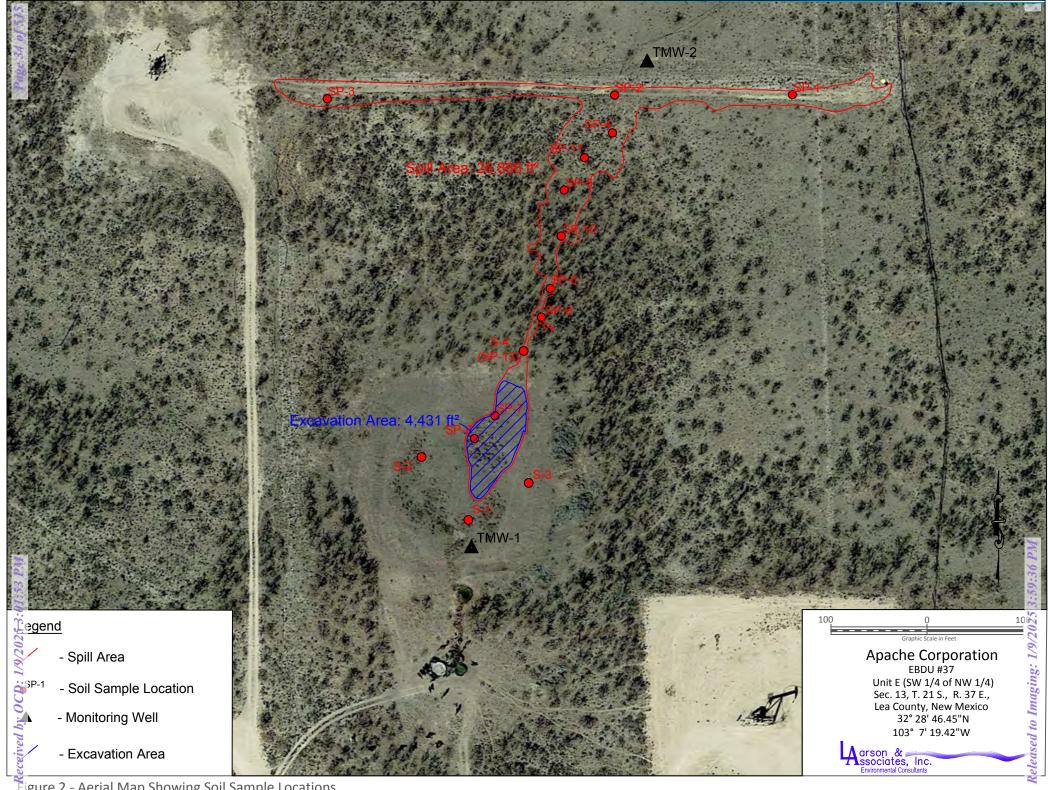
Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

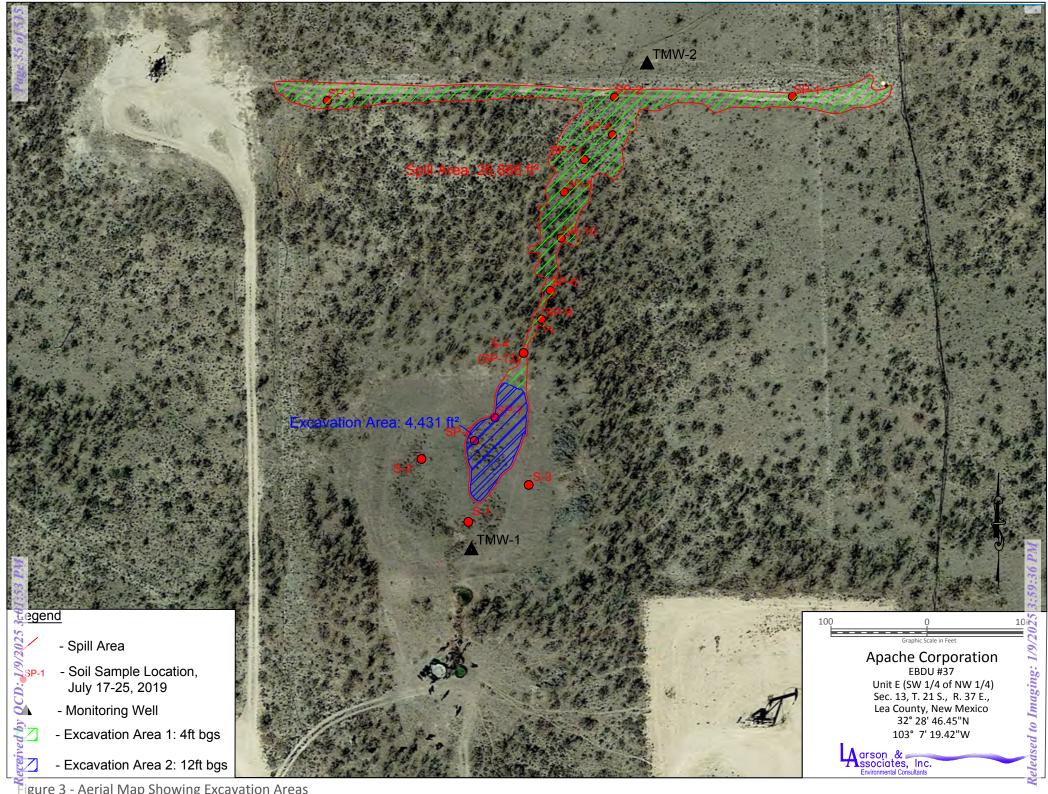
<: denotes concentration less than analytical method reporting limit

Figures





igure 2 - Aerial Map Showing Soil Sample Locations



igure 3 - Aerial Map Showing Excavation Areas

Appendix A

Initial C-141

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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # (assigned by OCD)
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM 88240	

Location of Release Source

Latitude: <u>W 32.4807053</u> Longitude: <u>N -103.123085</u>

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: E	BDU #37 W	'IW			Site Type: Water Injection Well			
Date Release	Discovered	API # 3002506556						
Unit Letter	Section	Township	Range		County			
E	12	21S	37E	LEA				
					William Stephens)			
			Noture on	d Vo	lume of Release			

Nature and Volume of Release

Materia	al(s) Released (Select all that apply and attach calculations or specif	ic justification for the volumes provided below)
Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
□ Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride 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		
Isolation valve failure du	e to internal corrosion.	

Page 38 of 515

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
☐ Yes ⊠ No	
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? CD by Bruce Baker, Senior Environmental Technician, Apache Corporation
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain why:
D 10 15 20 0 D (4) ND	
has begun, please attach	IAC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environr failed to adequately investig.	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: <u>Jeff Broom</u>	<u>n</u> Title: <u>Environmental Technician</u>
Signature:	Date: <u>07/24/2019</u>
Email: <u>Jeffrey.Broom@a</u>	pachecorp.com Telephone: (432) 664-4677
OCD Only	
Received by: <u>Dylan Ro</u>	Date: <u>08/09/2019</u>

Appendix B

Cardinal Laboratory Reports



July 24, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 07/19/19 17:14.

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 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)

Celey D. Keene

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: 07/19/2019

Reported: 07/24/2019

Project Name: FRDI 37 WIW

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 07/17/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: BG 1 @ SURFACE (H902502-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/23/2019	ND	416	104	400	0.00	
Sample ID: BG 1 @ 2' (H9	002502-02)								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/23/2019	ND	416	104	400	0.00	
Sample ID: BG 1 @ 3' (H9	002502-03)								
Chloride, SM4500CI-B	mg	mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/23/2019	ND	416	104	400	0.00	
Sample ID: BG 1 @ 4' (H9	002502-04)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/23/2019	ND	416	104	400	0.00	

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 whistoever 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



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: ////////////////////////////////////	FAX (979) 393-2470	BILL TO	ANALYSIS REQUEST
Blue Or	P.O. #:		
Address:	Com	Company:	
	State: Zip: Attn:	3.	
e #:	Fax #: Add	Address:	
	Project Owner: City:		
Project Name: EBM 37 WIL	State:	te: Zip:	
Project Location: EBOK 37 WIW		Phone #:	
lest Brown	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	
OI BE 1 @ Surface	-	7-17-18	
02 861 10 2	- '	2-17-K 1454 V	
S RX1 @ 3'	-	7-17-67 1455	
24 BE 1 80 A.	-	7-17-6 1500	
PLEASE NOTE: Liability and Damages. Cardinal's liability and client analyses. All claims including those for negligence and any other cau service. In no event shall Cardinal be liable for includental or consultations and the service of the negligence and the service.	PLEASE NOTE: Liability and Damages. Cardinat's liability and client's exclusive remedy for any claim arising whether based in contract or fort, 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 walved unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses, All claims including those for negligence and any other cause whatsoever shall be deemed walved unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinat be liable for incidental or consequental damages, including without limitation, business interruptlying, loss of use, or loss of profits incurred by client, its substitiates, services in the cardinates of the control of the control of the profits of the cardinates of the control of the cardinates of t	ontract or fort, shall be limited to the amount paid by the client for the ing and received by Cardinal within 30 days after completion of the applicable slyffs, loss of use, or loss of profits incurred by client, its subsidiaries, folim is based upon any of the above stated reasons or otherwise.	
out of or related to the performance o	Date: 7-19-15 Received By	ult: □ Yes □ Yes	□ No Add'I Phone #: □ No Add'I Fax #:
	Time:		
	S.O.S	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:	101/5.2° Hyes Hyes	Care HY	



July 26, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 07/19/19 17:14.

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 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.

Celey D. Keine

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: 07/19/2019 Reported: 07/26/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 07/19/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ SURFACE (H902503-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10100	16.0	07/23/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	996	50.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	339	50.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	70.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	122 9	% 37.6-14	7						

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 whistoever 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 & Keene



Analytical Results For:

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

Received: 07/19/2019
Reported: 07/26/2019
Project Name: EBDU 37 WIW

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

ma/ka

Sampling Date: 07/19/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ 2' (H902503-02)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	ea By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	101	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5200	16.0	07/23/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	68.2	% 41-142	•						
Surrogate: 1-Chlorooctadecane	71.0	% 37.6-14	7						

Applyzod By: MC

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 whistoever 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.

Celeg & Freene



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

 Received:
 07/19/2019
 Sampling Date:
 07/19/2019

 Reported:
 07/26/2019
 Sampling Type:
 Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Applyzod By: MC

Project Location: NOT GIVEN

ma/ka

Sample ID: SP 5 @ 4' (H902503-03)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	102	% 73.3-12	9						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4240	16.0	07/23/2019	ND	432	108	400	3.77	QM-07
TPH 8015M	mg	/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	68.1	% 41-142	•						
Surrogate: 1-Chlorooctadecane	71.8	% 37.6-14	7						

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 whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Keene



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/19/2019 Sampling Date: 07/19/2019 Reported: 07/26/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker Project Number: NONE GIVEN

Project Location: NOT GIVEN

Sample ID: SP 5 @ 6' (H902503-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 %	6 73.3-12	9						
Chloride, SM4500CI-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10100	16.0	07/23/2019	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	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	68.8 9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	72.0 9	% 37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/19/2019 Sampling Date: 07/19/2019 Reported: 07/26/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Tamara Oldaker

Project Location: **NOT GIVEN**

Sample ID: SP 5 @ 8' (H902503-05)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9330	16.0	07/23/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	/kg	Analyze	d 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	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	69.1	% 41-142	!						
Surrogate: 1-Chlorooctadecane	71.4	% 37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/19/2019 Sampling Date: 07/19/2019

Reported: 07/26/2019 Sampling Type: Soil
Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact

Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Applyzod By: MC

Project Location: NOT GIVEN

ma/ka

Sample ID: SP 5 @ 10' (H902503-06)

RTFY 8021R

B1EX 8021B	mg	/ kg	Anaiyze	ea By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3840	16.0	07/23/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed 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	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	68.3	% 41-142							
Surrogate: 1-Chlorooctadecane	71.0	% 37.6-14	7						

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 whistoever 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



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/19/2019 Sampling Date: 07/19/2019 Reported: 07/26/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker Project Number: NONE GIVEN

Project Location: **NOT GIVEN**

Sample ID: SP 5 @ 12' (H902503-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	108 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1420	16.0	07/23/2019	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d 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	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					
Surrogate: 1-Chlorooctane	65.8	% 41-142	?						
Surrogate: 1-Chlorooctadecane	69.1	% 37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

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

 Received:
 07/19/2019
 Sampling Date:
 07/19/2019

 Reported:
 07/26/2019
 Sampling Type:
 Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: NOT GIVEN

Sample ID: BG 1 @ 1' (H902503-08)

BTEX 8021B	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	107	% 73.3-12	9						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	07/23/2019	ND	432	108	400	3.77	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	187	93.3	200	2.77	
DRO >C10-C28*	91.5	10.0	07/24/2019	ND	188	94.1	200	1.57	
EXT DRO >C28-C36	43.3	10.0	07/24/2019	ND					
Surrogate: 1-Chlorooctane	61.6	% 41-142	?						
Surrogate: 1-Chlorooctadecane	70.5	% 37.6-14	7						

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 whistoever 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.

Celeg D. Freene



Notes and Definitions

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

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 whistoever 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. Keine

Relinquished By:

Date: Time:

Received By

Sampler - UPS - Bus - Other: 4.8

Sample Condition
Cool Intact
Pes Pes
No No

CHECKED BY:

Delivered By: (Circle One)



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

(-,-) ,(-,-)			
Company Name: FIRCHE CORPORTION	ton BILL T	ANALYSIS REQUEST	
0	P.O. #:		
Address:	Company:		
City: State:	: Zip: Attn:		
Phone #: Fax #:	Address:		
Project #: Project	Project Owner: City:		
Project Name: ESOU 37 WIN	State: Zip:		
Project Location: EBDR 37 WIN	Phone #:		
Sampler Name: JEFF Bruson	Fax #:		
FOR LAB USE ONLY	MATRIX PRESERV.	SAMPLING	
Lab I.D. Sample I.D.	G)RAB OR (C)OMP CONTAINERS GROUNDWATER VASTEWATER GOIL DIL GLUDGE DTHER: GCID/BASE: CE / COOL DTHER:	CL BTEX EXT. TPH	
OI SP5@ Surface	_	16/3/ 11-	
SP50 2'		1585	
3 SPS B 4'		1567	
DY SP5 @ 6"		/53/	
25 SPS @ 5'		/533	
26 SPS @ 10'		7585/	
C1 SPS @17	*	1573	
\$ 66101'	7-/5-/5	-15, 1453	
PLEASE NOTE: Liability and Damages, Cardinal's lability and client's exclusive analyses. All claims including those for negligence and any other cause whatso service. In no event shall Cardinal be liable for incidental or consequental darm filiates or successors arising out of or related to the performance of services the	any de Car	ie applicable is,	
Relinquished By: Date:	Date: 7-15-15 Received By:	Phone Result: ☐ Yes ☐ No Add'! Phone #: Fax Result: ☐ Yes ☐ No Add'! Fax #:	
Time: 714	Mos W XII ME		



July 31, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 07/25/19 14:51.

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 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.

Celey D. Keine

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: 07/25/2019 Reported: 07/31/2019 Project Name: EBDU 37 WIW

Project Number: NONE GIVEN Project Location: NOT GIVEN

Sampling Date: 07/25/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: SP 8 @ 5' (H902565-01)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4240	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	95.4	% 41-142	!						
Surrogate: 1-Chlorooctadecane	107	% 37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: 07/25/2019 Reported: 07/31/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

Sample ID: SP 8 @ 10' (H902565-02)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	97.9	% 41-142	!						
Surrogate: 1-Chlorooctadecane	109 9	37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

 Received:
 07/25/2019
 Sampling Date:
 07/24/2019

 Reported:
 07/31/2019
 Sampling Type:
 Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Analyzed By: me

Project Location: NOT GIVEN

ma/ka

Sample ID: SP 8 @ 15' (H902565-03)

RTFY 8021R

BIEX 8021B	mg,	/кд	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	< 0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	98.0	% 41-142	•						
Surrogate: 1-Chlorooctadecane	110 9	% 37.6-14	7						

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 whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Freene



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

 Received:
 07/25/2019
 Sampling Date:
 07/25/2019

 Reported:
 07/31/2019
 Sampling Type:
 Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Analyzed By: me

Project Location: NOT GIVEN

ma/ka

Sample ID: SP 9 @ 5' (H902565-04)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6160	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	86.2	% 41-142							
Surrogate: 1-Chlorooctadecane	97.0	% 37.6-14	7						

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 whistoever 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



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: 07/25/2019 Reported: 07/31/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

Sample ID: SP 9 @ 10' (H902565-05)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5520	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	93.1	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	105 9	% 37.6-14	7						

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.

Celeg D. Freene



Analytical Results For:

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

Received: 07/25/2019
Reported: 07/31/2019
Project Name: EBDU 37 WJW

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

ma/ka

Sampling Date: 07/25/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: SP 9 @ 15' (H902565-06)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2800	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	95.2	% 41-142	•						
Surrogate: 1-Chlorooctadecane	108	% 37.6-14	7						

Analyzed By: me

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 whistoever 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



Analytical Results For:

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

(373) 353 = 1

Received: 07/25/2019 Sampling Date: 07/25/2019

Reported: 07/31/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Project Location: NOT GIVEN

Sample ID: SP 1 @ 5' (H902565-07)

BTEX 8021B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	< 0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	85.2	% 41-142	?						
Surrogate: 1-Chlorooctadecane	95.4	% 37.6-14	7						

Cardinal Laboratories

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 whistoever 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. Keine

Celey D. Keene, Lab Director/Quality Manager

*=Accredited Analyte



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: 07/25/2019

Reported: 07/31/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Jodi Henson

Project Location: NOT GIVEN

Sample ID: SP 1 @ 10' (H902565-08)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	< 0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	195	97.7	200	3.98	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	218	109	200	16.0	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	92.4 9	% 41-142	!						
Surrogate: 1-Chlorooctadecane	103 %	37.6-14	7						

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

S-04



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: 07/25/2019 Sampling Date: 07/25/2019

Reported: 07/31/2019 Sampling Type: Soil Project Name: EBDU 37 WIW Sampling Condition: Cool

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Analyzed By: me

Project Location: NOT GIVEN

Sample ID: SP 2 @ SURFACE (H902565-09)

RTFY 8021R

BIEX 8021B	mg	/ Kg	Anaiyze	a By: ms					5-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	0.175	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	0.618	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	1.92	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	2.71	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	133	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	28800	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	104	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	1380	10.0	07/26/2019	ND	197	98.5	200	12.1	QM-07
EXT DRO >C28-C36	349	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	111 9	% 41-142	?						

Surrogate: 1-Chlorooctadecane 171 % 37.6-147

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg & Frence



Analytical Results For:

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

 Received:
 07/25/2019

 Reported:
 07/31/2019

 Project Name:
 EBDU 37 WIW

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

ma/ka

Sampling Date: 07/25/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: SP 2 @ 5' (H902565-10)

RTFY 8021R

BIEX 8021B	mg	/кд	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1150	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	93.8	% 41-142	•						
Surrogate: 1-Chlorooctadecane	101	% 37.6-14	7						

Analyzed By: me

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 whistoever 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. Keine



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: 07/25/2019 Reported: 07/31/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

Sample ID: SP 2 @ 10' (H902565-11)

BTEX 8021B	mg/	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	80.0	% 41-142							
Surrogate: 1-Chlorooctadecane	84.6	% 37.6-14	7						

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.

Celeg D. Freene



07/25/2019

Soil

Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: Reported: 07/31/2019 Sampling Type:

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Jodi Henson

Project Location: NOT GIVEN

Sample ID: SP 3 @ 5' (H902565-12)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 %	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2720	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	98.3	% 41-142	1						
Surrogate: 1-Chlorooctadecane	110 9	6 37.6-14	7						

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. Keine



07/25/2019

Soil

Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 07/25/2019 Sampling Date: Reported: 07/31/2019 Sampling Type:

ma/ka

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Analyzed By: me

Project Location: NOT GIVEN

Sample ID: SP 3 @ 10' (H902565-13)

RTFY 8021R

Result <0.050 <0.050 <0.050	Reporting Limit 0.050 0.050	Analyzed 07/29/2019	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<0.050		07/29/2019	ND					
	0.050		ND	1.98	99.2	2.00	1.56	
< 0.050		07/29/2019	ND	2.07	104	2.00	0.363	
	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
<0.300	0.300	07/29/2019	ND					
104	% 73.3-12	9						
mg,	/kg	Analyze	d By: AC					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
192	16.0	07/26/2019	ND	416	104	400	0.00	
mg,	/kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
<10.0	10.0	07/26/2019	ND					
99.1	% 41-142	ı						
109	% 37.6-14	7						
	<0.150 <0.300 104 9 mg/ Result 192 mg/ Result <10.0 <10.0 <99.1	<0.150 0.150 <0.300 0.300 104		<0.150 07/29/2019 ND 104 % 73.3-129 mg/ky Analyzed By: AC Result Reporting Limit Analyzed Method Blank 192 16.0 07/26/2019 ND mg/ky Analyzed By: MS Result Reporting Limit Analyzed Method Blank <10.0	<0.150	< 0.150 0.150 07/29/2019 ND 6.18 103 < 0.300 0.300 07/29/2019 ND 6.18 103 104 % 73.3-129 mg/ky Analyzed By: AC Result Reporting Limit Analyzed Dy: MS Method Blank BS % Recovery Result Reporting Limit Analyzed Method Blank BS % Recovery <10.0	<0.150	<0.150

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 whistoever 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



NOT GIVEN

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: 07/25/2019 Sampling Date: 07/25/2019

Reported: 07/31/2019 Sampling Type: Soil
Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact

Project Number: NONE GIVEN Sample Received By: Jodi Henson

Sample ID: SP 3 @ 15' (H902565-14)

Project Location:

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/29/2019	ND	1.98	99.2	2.00	1.56	
Toluene*	<0.050	0.050	07/29/2019	ND	2.07	104	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/29/2019	ND	1.98	98.9	2.00	0.632	
Total Xylenes*	<0.150	0.150	07/29/2019	ND	6.18	103	6.00	0.412	
Total BTEX	<0.300	0.300	07/29/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/26/2019	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/26/2019	ND	193	96.7	200	9.45	
DRO >C10-C28*	<10.0	10.0	07/26/2019	ND	197	98.5	200	12.1	
EXT DRO >C28-C36	<10.0	10.0	07/26/2019	ND					
Surrogate: 1-Chlorooctane	93.9	% 41-142	•						
Surrogate: 1-Chlorooctadecane	107	% 37.6-14	7						

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 whistoever 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



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

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 whistoever 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.

Celeg D. Freene

CARDINALAboratori

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

TPACIFE !	COCHORATION		ANALYSIS REQUEST
Project Manager: BRILLE BRICER	CERC	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name: ESOU 37 W.	WIN	State: Zip:	
	W.	#	
Sampler Name: Samm		Fax#:	
	MATRIX	ESERV, SAMPLING	
	(C)OMP ERS ATER	(TPH
Lab I.D. Sample I.D.	AB OR NTAIN UNDW TEWA	/BASE: COOL	XT.
H902565	# CON	OTHE DATE TIME	E
2 578 @ 10		U:\$7	
10.01		11:35	-
SPRO		12:04	
264		12:65	
6 SP 1 @ 15		7-35-15 13:36	
PLEASE NOTE: Liability and Damages. Cardinat's liability and oil analyses. All claims including those for negligence and any other service. In no event shall Cardinal be liable for incidental or const affiliates or successors arising out of or related to the performance	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 whatsover chall be deemed waived unless made in withing and received by Cardinal within 30 days after completion of the applica 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.	or tort, shall be limited to the amount paid by the client for the received by Cardinal within 30 days after completion of the applicable loss of use, or loss of profits incurred by client, its subsidiaries, s based upon any of the above stated reasons or otherwise.	
Neimiquisited by:	Time: Received By:	Phone Result:	□ No Add'l Phone #: □ No Add'l Fax #:
Relinquished By:	Date: Received By:		1 L/W
	Time:		
Sampler - UPS - Bus - Other: 5,2° 5,0°	Bus - Other: 5,20 5 100 #49 Sample Condition Sample Condition Cool Intact Yes Dives	CHECKED BY: ENVIL	IETT NS WELL.
		C	

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company wante.	KANKCHE CORPORATION		BILL 70		ANALYSIS RE	RECUEST
Project Manager:	CANCE BAKER					
Address:			Company:			
City:	State:	Zip:	Attn:			
Phone #:	Fax #:		Address:			
Project #:	Project Owner:	97.	City:			
Project Name:	EBBU 37 WIN		State: Zip:			
Project Location:	EBOU 37 WIW		#			
Sampler Name:	Brum		Fax #:			
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING	NG		
Lab I.D.	Sample I.D.	WATER			TPH	
H902565		# CONT	OTHER ACID/BA CE / CC OTHER	CL BIL	EXT	
1	620 51		7	5630		
00	P3 (0) 10'			7580		
5-	S (B) DUCTACE			1348		
1 5	10 X 0 C			1247		
12 5	305'			1018		
1.5	3010			10:17		
7	13018		7.26-15	10:05		
DI DARE NOTE: 1 Skille, and Da						
analyses, All claims including the service. In no event shall Cardina affiliates or successors arising out	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 20 days after completion of the applicat 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.	deemed waived unless made in writing and without limitation, business interruptions, le gwithout limitation, business interruptions, le	or tort, shall be limited to the amount paid received by Cardinal within 30 days after use of use, or loss of profits incurred by clibased upon any of the above stated reast	by the client for the completion of the applicable fent, its subsidiaries, sons or otherwise.		
/ / / / /	Date: 7-25-15	Received By:		ult: □ Yes	□ No Add'I Phone #:	
Relinquished By:	Time: 757%	Received By:	Moun	E G	- 1	
	Time: T.4					
Delivered By: (C	Delivered By: (Circle One) CSI 1 CCCC	_	ON CHECKED BY:	EMAREL TO	JER AS WOLL.	
Gamplet - OF 3 - D	us - Other: O'CC J. WC	No No No	1			

Released to Imaging: 1/9/2025 3:59:36 PM

1



August 05, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 08/01/19 12:08.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keene

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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 2350 W. MARLAND BLVD. HOBBS NM, 88240 Project: EBDU 37 WIW
Project Number: NONE GIVEN
Project Manager: BRUCE BAKER

Reported: 05-Aug-19 15:00

Fax To: (575) 393-2432

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WINDMILL	H902630-01	Water	01-Aug-19 11:45	01-Aug-19 12:08

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 aring any other cause whistoever 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 damage 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 sur 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



Analytical Results For:

APACHE CORP - HOBBS 2350 W. MARLAND BLVD. HOBBS NM, 88240 Project: EBDU 37 WIW
Project Number: NONE GIVEN
Project Manager: BRUCE BAKER

Fax To: (575) 393-2432

Reported: 05-Aug-19 15:00

WINDMILL H902630-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Labora	tories					
Inorganic Compounds										
Chloride*	232		4.00	mg/L	1	9080104	AC	01-Aug-19	4500-Cl-B	
TDS*	732		5.00	mg/L	1	9072906	AC	02-Aug-19	160.1	
Volatile Organic Compounds I	by EPA Method	8021								
Benzene*	< 0.001		0.001	mg/L	1	9080118	ms	01-Aug-19	8021B	
Toluene*	< 0.001		0.001	mg/L	1	9080118	ms	01-Aug-19	8021B	
Ethylbenzene*	< 0.001		0.001	mg/L	1	9080118	ms	01-Aug-19	8021B	
Total Xylenes*	< 0.003		0.003	mg/L	1	9080118	ms	01-Aug-19	8021B	
Total BTEX	< 0.006		0.006	mg/L	1	9080118	ms	01-Aug-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID))		105 %	81	3-128	9080118	ms	01-Aug-19	8021B	

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 aring any other cause whistoever 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 damage 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 sur 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



Analytical Results For:

APACHE CORP - HOBBS 2350 W. MARLAND BLVD. HOBBS NM, 88240 Project: EBDU 37 WIW
Project Number: NONE GIVEN
Project Manager: BRUCE BAKER
Fax To: (575) 393-2432

Reported: 05-Aug-19 15:00

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9072906 - Filtration										
Blank (9072906-BLK1)				Prepared: 2	9-Jul-19 A1	nalyzed: 30	-Jul-19			
TDS	ND	5.00	mg/L							
LCS (9072906-BS1)				Prepared: 2	9-Jul-19 Aı	nalyzed: 30	-Jul-19			
TDS	533		mg/L	527		101	80-120			
Duplicate (9072906-DUP1)	Sour	ce: H902540-	01	Prepared: 2	9-Jul-19 Aı	nalyzed: 30	-Jul-19			
TDS	1470	5.00	mg/L		1510			2.69	20	
Batch 9080104 - General Prep - Wet Chem										
Blank (9080104-BLK1)				Prepared &	Analyzed:	01-Aug-19				
Chloride	ND	4.00	mg/L							
LCS (9080104-BS1)				Prepared &	: Analyzed:	01-Aug-19				
Chloride	100	4.00	mg/L	100		100	80-120			
LCS Dup (9080104-BSD1)				Prepared &	Analyzed:	01-Aug-19				
Chloride	104	4.00	mg/L	100		104	80-120	3.92	20	

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 aring any other cause whistoever 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 damage 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 sur 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



%PEC

Analytical Results For:

APACHE CORP - HOBBS 2350 W. MARLAND BLVD. HOBBS NM, 88240 Project: EBDU 37 WIW
Project Number: NONE GIVEN
Project Manager: BRUCE BAKER
Fax To: (575) 393-2432

Reported: 05-Aug-19 15:00

DDD

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9080118 - Volatiles										
Blank (9080118-BLK1)				Prepared &	Analyzed:	01-Aug-19)			
Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	mg/L							
Ethylbenzene	ND	0.001	mg/L							
Total Xylenes	ND	0.003	mg/L							
Total BTEX	ND	0.006	mg/L							
Surrogate: 4-Bromofluorobenzene (PID)	0.104		mg/L	0.100		104	81.3-128			
LCS (9080118-BS1)				Prepared &	Analyzed:	01-Aug-19)			
Benzene	0.021	0.001	mg/L	0.0200		106	86.6-118			
Toluene	0.022	0.001	mg/L	0.0200		110	84.5-122			
Ethylbenzene	0.020	0.001	mg/L	0.0200		102	83.9-122			
Total Xylenes	0.062	0.003	mg/L	0.0600		103	81.8-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.103		mg/L	0.100		103	81.3-128			
LCS Dup (9080118-BSD1)				Prepared &	Analyzed:	01-Aug-19)			
Benzene	0.021	0.001	mg/L	0.0200		105	86.6-118	0.152	7.71	
Toluene	0.021	0.001	mg/L	0.0200		107	84.5-122	2.56	8.86	
Ethylbenzene	0.020	0.001	mg/L	0.0200		101	83.9-122	0.952	11.8	
Total Xylenes	0.061	0.003	mg/L	0.0600		102	81.8-124	0.228	11.9	
Surrogate: 4-Bromofluorobenzene (PID)	0.103		mg/L	0.100		103	81.3-128			

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 aring any other cause whistoever 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 damage 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 sur 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



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whistoever 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 damage 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 sur 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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Apache Corporation		8/1_170		ANALYSIS RE	REQUEST
Project Manager:	Bruce Buser		P.O. #:		- 1	
Address:			Company: /+Dark	a d		
City:	State:	Zip:	Attn:			
Phone #:	Fax #:		Address:			
Project #:	Project Owner:	er:	City:			
Project Name:	EBON 27 WIN		State: Zip:			
Project Location:	Les Co.		#			
Sampler Name:	Bo I havin		Fax #:	te		
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING	EX Vio		
Lab I.D. H967.630	Sample I.D.	(G)RAB OR (C)OMP # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER: ACID/BASE: ICE / COOL OTHER:	BTE Chlo		
	John Maril	R	7	1142 X X X		
PLEASE NOTE: Liability and Da	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	r any claim arising whether based in contra	et or lod, shall be limited to the amount pair	by the client for the		
analyses. All claims including tho service. In no event shall Cardina affiliates or successors arising our	analyses. All claims including those for negligence and any other cause whatsoever shall be deemed walved 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.	e deemed walved unless made in writing aving without limitation, business interruptions Cardinal, regardless of whether such claim	id received by Cardinal within 30 days afte , loss of use, or loss of profits incurred by c i is based upon any of the above stated rea	r completion of the applicable lient, its subsidiaries, isons or otherwise.		
Relinquished By:	Time: 1208	Received By:	Make	Phone Result:	Oruce Jefu	Yes No Add' Phone #:
	Time:				5	
Delivered By: (Circle One)	Sircle One) 22.38	#97 Sample Condition	tion CHECKED BY:		たるない	
Sampler - UPS - Bus - Other:		22.7° Tres Tres	10			



August 08, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 08/07/19 16:52.

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 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)

Wite Sough

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,

Mike Snyder For 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:
 08/07/2019

 Reported:
 08/08/2019

 Project Name:
 EBDU 37 WIW

Project Number: NONE GIVEN
Project Location: NOT GIVEN

ma/ka

Sampling Date: 08/07/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 0 (H902718-01)

DTEV 0021D

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2019	ND	2.09	105	2.00	6.89	
Toluene*	<0.050	0.050	08/08/2019	ND	2.13	107	2.00	6.44	
Ethylbenzene*	<0.050	0.050	08/08/2019	ND	2.01	101	2.00	4.82	
Total Xylenes*	<0.150	0.150	08/08/2019	ND	6.07	101	6.00	4.98	
Total BTEX	<0.300	0.300	08/08/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	100	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	08/08/2019	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	208	104	200	4.84	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	206	103	200	10.2	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	99.9	% 41-142	,						
Surrogate: 1-Chlorooctadecane	107	% 37.6-14	7						

Analyzed By me

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 whistoever 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 is 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.

Mile Sough



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/07/2019 Sampling Date: 08/07/2019

Reported: 08/08/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: NOT GIVEN

Sample ID: B 1 (H902718-02)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2019	ND	2.09	105	2.00	6.89	
Toluene*	<0.050	0.050	08/08/2019	ND	2.13	107	2.00	6.44	
Ethylbenzene*	<0.050	0.050	08/08/2019	ND	2.01	101	2.00	4.82	
Total Xylenes*	<0.150	0.150	08/08/2019	ND	6.07	101	6.00	4.98	
Total BTEX	<0.300	0.300	08/08/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	101	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	08/08/2019	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	208	104	200	4.84	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	206	103	200	10.2	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	101	% 41-142	•						
Surrogate: 1-Chlorooctadecane	111 9	% 37.6-14	7						

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.

with Sigh



Analytical Results For:

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

Received: 08/07/2019

08/08/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/07/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: B 2 (H902718-03)

Reported:

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2019	ND	2.09	105	2.00	6.89	
Toluene*	<0.050	0.050	08/08/2019	ND	2.13	107	2.00	6.44	
Ethylbenzene*	<0.050	0.050	08/08/2019	ND	2.01	101	2.00	4.82	
Total Xylenes*	<0.150	0.150	08/08/2019	ND	6.07	101	6.00	4.98	
Total BTEX	<0.300	0.300	08/08/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	101	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/08/2019	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	208	104	200	4.84	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	206	103	200	10.2	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	101	% 41-142	?						
Surrogate: 1-Chlorooctadecane	109	% 37.6-14	7						

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 whistoever 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.

Me Sough



Analytical Results For:

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

Received: 08/07/2019

Reported: 08/08/2019 Project Name: EBDU 37 WIW Project Number: NONE GIVEN

Project Location: NOT GIVEN Sampling Date: 08/07/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker

Sample ID: B 10 (H902718-04)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2019	ND	2.09	105	2.00	6.89	
Toluene*	<0.050	0.050	08/08/2019	ND	2.13	107	2.00	6.44	
Ethylbenzene*	<0.050	0.050	08/08/2019	ND	2.01	101	2.00	4.82	
Total Xylenes*	<0.150	0.150	08/08/2019	ND	6.07	101	6.00	4.98	
Total BTEX	<0.300	0.300	08/08/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 9	73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/08/2019	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	208	104	200	4.84	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	206	103	200	10.2	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	102 9	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	110 9	6 37.6-14	7						

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.

with Sigh



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/07/2019 Sampling Date: 08/07/2019

Reported: 08/08/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: NOT GIVEN

Sample ID: B 11 (H902718-05)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2019	ND	2.09	105	2.00	6.89	
Toluene*	<0.050	0.050	08/08/2019	ND	2.13	107	2.00	6.44	
Ethylbenzene*	<0.050	0.050	08/08/2019	ND	2.01	101	2.00	4.82	
Total Xylenes*	<0.150	0.150	08/08/2019	ND	6.07	101	6.00	4.98	
Total BTEX	<0.300	0.300	08/08/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	102	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/08/2019	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	208	104	200	4.84	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	206	103	200	10.2	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103	% 41-142	•						
Surrogate: 1-Chlorooctadecane	109	% 37.6-14	7						

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 whistoever 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.

Mile Sough



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mile Sough



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	APACHE CORPORATION		01718		ANALYSIS REQUEST	•
Project Manager:	D		P.O. #:			
Address:			Company:			
City:	State:	Zip:	Attn:			
Phone #:	Fax #:		Address:			
Project #:	Project Owner:	er:	City:			
Project Name:	EBOU 37 WIN		State: Zip:			
Project Location:	CBDN 37WEW		#			
Sampler Name:	JOFF Rower		Fax #:			
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING			
Lab I.D.	Sample I.D.		/BASE: COOL	CL BTEX TXT. TPH		
H962718		# CO GRO		6		
1	B 60	7 - 2	8-7-19	1609 / / 1		
11	图 61		1 /	1616		
ح ن	610			1617		
5	811	- -	8-7-19/	1615 1 1		
		<u></u>				
PLEASE NOTE: Liability and to analyses. All claims including to service. In no event shall Card effiliates or successors arising to	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, efficiency and consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, efficiency and consequental damages, including without limitation, business interruptions, loss of use or loss of profits incurred by client, its subsidiaries, efficiency and consequental damages, including without limitation, business interruptions, loss of use or loss of profits incurred by client for the participation of the applicable of the participation of the applicable and the participation of the	rany claim arising whether based in contract se deemed waived unless made in writing and ing without firritation, business interruptions, I. Cardinal, regardless of whether such claim in	or tort, shall be limited to the amount paid b treceived by Cardinal within 30 days after or loss of use, or loss of profits incurred by die s based upon any of the above stated reaso	y the client for the myplebon of the applicable nt, is subsidiaries, ns or otherwise.		
Relinquished By:	Numary Time: 1852	Received By:	Maken	Phone Result: Yes No Add Fax Result: Yes No Add REMARKS:	Add'l Phone #: Add'l Fax #:	
	Time:			The	5,	
Delivered By: (Circle One)	(Circle One) 2.32	#97 Sample Condition Cool Intact	on CHECKED BY: (Initials)		R	
Sampler - UPS - Bus - Other:	Bus - Other: Portrected 2.70	2.7° Tyes Tyes	4		(



August 09, 2019

BRUCE BAKER APACHE CORP - HOBBS 2350 W. MARLAND BLVD.

RE: EBDU 37 WIW

HOBBS, NM 88240

Enclosed are the results of analyses for samples received by the laboratory on 08/08/19 16:18.

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 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.

Wite Sough

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,

Mike Snyder For 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: 08/08/2019 Sampling Date: 08/08/2019

Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Jodi Henson

Applymed By MC

Project Location: NOT GIVEN

Sample ID: B 15 @ 13' (H902734-01)

DTEV 0021D

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	08/09/2019	ND	432	108	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	107 5	% 41-142	,						
Surrogate: 1-Chlorooctadecane	110 9	% 37.6-14	7						

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 whistoever 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.

Mile Sough



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/08/2019 Sampling Date: 08/08/2019 Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Jodi Henson

Project Location: NOT GIVEN

Sample ID: B 15 @ 15' (H902734-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	08/09/2019	ND	448	112	400	3.64	QM-07
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	107 9	% 41-142	!						
Surrogate: 1-Chlorooctadecane	107 9	37.6-14	7						

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.

with Sigh



Analytical Results For:

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

Received: 08/08/2019 Reported: 08/09/2019

Project Name: EBDU 37 WIW Project Number: NONE GIVEN Project Location: NOT GIVEN

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: B 15 @ 17' (H902734-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	< 0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1950	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103 %	6 41-142	1						
Surrogate: 1-Chlorooctadecane	103 %	6 37.6-14	7						

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.

with Sigh



Analytical Results For:

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

Received: 08/08/2019 Reported: 08/09/2019

Project Name: EBDU 37 WIW Project Number: NONE GIVEN Project Location: **NOT GIVEN**

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: B 15 @ 19' (H902734-04)

BTEX 8021B	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 9	% 73.3-12	9						
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103 9	% 41-142)						
Surrogate: 1-Chlorooctadecane	104 9	% 37.6-14	7						

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.

with Sigh



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/08/2019 Sampling Date: 08/08/2019

Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

Sample ID: B 15 @ 21' (H902734-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	100 %	6 41-142							
Surrogate: 1-Chlorooctadecane	101 9	6 37.6-14	7						

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.

with Sigh



Analytical Results For:

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

Received: 08/08/2019 Reported: 08/09/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: B 15 @ 22' (H902734-06)

RTFY 8021R

B1EX 8021B	mg	/кд	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103	% 41-142	•						
Surrogate: 1-Chlorooctadecane	104	% 37.6-14	7						

Applyzod By: MC

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 whistoever 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.

Mile Sough



Notes and Definitions

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

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 whistoever 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.

Mile Sough



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

HARCINE COSPUSATION	1	BILLTO				ANALYSIS REQUEST	JEST
Project Manager: Bruce Ballan	P.(P.O. #:					
Address:	Co	Company:					
City: State:	Zip: Attn:	tn:					
Phone #: Fax #:	Ad	Address:					
Project #: Project Owner:	r: City:	y:					
Project Name: EBOW #37 いてい	Sta	State: Zip:					
Project Location: EBBU #37 WIW	Ph	#					
Sampler Name: JETF Brush	Fa	Fax #:					
FOR LAB USE ONLY	MATRIX	PRESERV. SAMPLING	NG				
Lab I.D. Sample I.D.		COOL	Z	EX	T. TPH		
H902734	# COI GROU	ACID/ ICE / C OTHE DATE	TIME				
30		51-8-8	3:16				
2013 @ 13			3:18				
0/0 @ //			3:19				
20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			12.5	T			
2010		-	0.00	İ			
6 815 @ 77°		8-8-14	25.54				
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or lort, shall be limited to the amount paid by the client for the arisingses. 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.	ny claim arising whether based in contract or tort, leerned waived unless made in writing and receiv without limitation, business interruptions, loss of ardinal, regardless of whether such claim is base.	, shall be limited to the amount pain red by Cardinal within 30 days afte use, or loss of profits incurred by c d upon any of the above stated ree	by the client for the completion of the application of the application, its subsidiaries, sons or otherwise.	cable			
Relinquished By: Date: 8-8-15 Time: 16/8 Date:	Received By: Received By:	room	Phone Result: Fax Result: REMARKS:	o Yes	yes and a	Add'l Phone #: Add'l Fax #:	
4.5%	J 8	CHECKED BY:				Thanks, JEA	
- Dus - Oniei. 4.1 c	No No No	F					



August 09, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 08/08/19 16:18.

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 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)

Wite Sough

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,

Mike Snyder For 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:
 08/08/2019

 Reported:
 08/09/2019

 Project Name:
 EBDU 37 WIW

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: B 15 @ 13' (H902734-01)

DTEV 0021D

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	106	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	08/09/2019	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	107	% 41-142	,						
Surrogate: 1-Chlorooctadecane	110 9	% 37.6-14	7						

Applymed By MC

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 whistoever 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.

Me Sough



Jodi Henson

Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/08/2019 Sampling Date: 08/08/2019 Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By:

Project Location: NOT GIVEN

NONE GIVEN

Sample ID: B 15 @ 15' (H902734-02)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	а ву: м5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	08/09/2019	ND	448	112	400	3.64	QM-07
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	107	% 41-142	•						
Surrogate: 1-Chlorooctadecane	107	% 37.6-14	7						

Applyzod By: MC

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.

with Sigh



Analytical Results For:

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

Received: 08/08/2019 Reported: 08/09/2019

Project Name: EBDU 37 WIW Project Number: NONE GIVEN Project Location: NOT GIVEN

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: B 15 @ 17' (H902734-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1950	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103 9	% 41-142	1						
Surrogate: 1-Chlorooctadecane	103 9	37.6-14	7						

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.

with Sigh



Analytical Results For:

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

Received: 08/08/2019 Reported: 08/09/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/08/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Sample ID: B 15 @ 19' (H902734-04)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	105	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3800	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103	% 41-142	?						
Surrogate: 1-Chlorooctadecane	104	% 37.6-14	7						

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 whistoever 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.

Mile Sough



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/08/2019 Sampling Date: 08/08/2019

Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Jodi Henson

Project Location: **NOT GIVEN**

Sample ID: B 15 @ 21' (H902734-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	6 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	100 %	6 41-142							
Surrogate: 1-Chlorooctadecane	101 9	6 37.6-14	7						

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.

with Sigh



Analytical Results For:

APACHE CORP - HOBBS **BRUCE BAKER** 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/08/2019 Sampling Date: 08/08/2019

Reported: 08/09/2019 Sampling Type: Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Project Number: Sample Received By: NONE GIVEN Jodi Henson

Project Location: NOT GIVEN

Sample ID: B 15 @ 22' (H902734-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2019	ND	1.91	95.5	2.00	3.81	
Toluene*	<0.050	0.050	08/09/2019	ND	1.92	96.2	2.00	1.60	
Ethylbenzene*	<0.050	0.050	08/09/2019	ND	1.92	95.8	2.00	2.17	
Total Xylenes*	<0.150	0.150	08/09/2019	ND	5.82	97.0	6.00	1.74	
Total BTEX	<0.300	0.300	08/09/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	104 9	73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	08/09/2019	ND	448	112	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2019	ND	203	102	200	2.11	
DRO >C10-C28*	<10.0	10.0	08/08/2019	ND	195	97.5	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	08/08/2019	ND					
Surrogate: 1-Chlorooctane	103 9	% 41-142	1						
Surrogate: 1-Chlorooctadecane	104 9	% 37.6-14	7						

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.

with Sigh



Notes and Definitions

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

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 whistoever 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.

Mile Sough



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

1	The state of the s	<i>10</i>	ANALYSIS REQUEST
Project Manager: Bluce BAUSA	P.O. #:		
Address:	Company:		
City: State:	Zip: Attn:		
Phone #: Fax #:	Address:		
Project #: Project Owner:	er: City:		
Project Name: EBの以 #37 いたい	State: Zip:		
Project Location: EROU #37 WIW	#		
Sampler Name: JEFF Shuom	Fax #:		
FOR LAB USE ONLY	MATRIX PRESERV.	SAMPLING	
	ERS ATER	TPH	
Home I.D. Sample I.D.	CONTAIN ROUNDW /ASTEWA OIL IL LUDGE THER: CID/BASE E/COOL	CL BTEX EXT.	
1 3150 13'		3:16	
2 815 @ 15'			
B18@		3:19	
1 6 10 19		3:21	
15 6 5 1 C			
6 615 @ 75.	8-8-4	74:5 4.	-
P. FASS NOTE: Libelity and Dependent Outlinets Table			
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 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.	or deemed waived unless made in writing and received by Cardinal within 30 in writing and received by Cardinal within 30 ing without limitation, business interruptions, loss of use, or loss of profits incu. Cardinal, regardless of whether such claim is based upon any of the above s	uoun paur by the brent; for the lays after completion of the applicable fred by client, its subsidiaries, tated reasons or otherwise.	
Time: 11.0	Received By:	ılt: □ Yes □ No	Add'l Phone #: Add'l Fax #:
Relinquished By: Date:	Received By:	Rush Please.	
Delivered By: (Circle One) +4C8/(CCT	OL STATE OF THE PARTY OF THE PA		Theates,
	Cool Intact (Intitals)		JEFF
ü	ŀ		



August 19, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 08/16/19 8:01.

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 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)

Celey D. Keine

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: 08/16/2019 Reported: 08/19/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/15/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 13 @ 15' (H902814-01)

BTEX 8021B	mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.3	% 73.3-12	9						
Chloride, SM4500CI-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	08/16/2019	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	83.2 9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	85.79	% 37.6-14	7						

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 whistoever 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. Keine



Analytical Results For:

APACHE CORP - HOBBS BRUCE BAKER 2350 W. MARLAND BLVD. HOBBS NM, 88240

Fax To: (575) 393-2432

Received: 08/16/2019 Sampling Date: 08/15/2019

Reported: 08/19/2019 Sampling Type: Soil
Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact

Project Number: NONE GIVEN Sample Received By: Tamara Oldaker
Project Location: NOT GIVEN

Analyzed By: ms

Sample ID: SP 13 @ 20' (H902814-02)

mg/kg

BTEX 8021B

DIEX GOZID	ilig/ kg		Allulyzeu by: Ilis						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.4	% 73.3-12	9						
Chloride, SM4500CI-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4600	16.0	08/16/2019	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	80.8	% 41-142	•						
Surrogate: 1-Chlorooctadecane	80.5	% 37.6-14	7						

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 whistoever 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



08/15/2019

Soil

Analytical Results For:

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

Received: 08/16/2019 Sampling Date: Reported: 08/19/2019 Sampling Type:

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact Sample Received By: Project Number: NONE GIVEN Tamara Oldaker

Project Location: **NOT GIVEN**

Sample ID: SP 13 @ 25' (H902814-03)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.1	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3120	16.0	08/16/2019	ND	432	108	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	85.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	87.9	% 37.6-14	7						

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



Analytical Results For:

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

 Received:
 08/16/2019
 Sampling Date:
 08/15/2019

 Reported:
 08/19/2019
 Sampling Type:
 Soil

Project Name: EBDU 37 WIW Sampling Condition: Cool & Intact
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: me

Project Location: NOT GIVEN

Sample ID: SP 13 @ 30' (H902814-04)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	ea By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	100	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4360	16.0	08/16/2019	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	82.9	% 41-142	•						
Surrogate: 1-Chlorooctadecane	86.2	% 37.6-14	7						

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 whistoever 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



Analytical Results For:

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

Received: 08/16/2019
Reported: 08/19/2019

Project Name: EBDU 37 WIW
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 08/15/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 13 @ 35' (H902814-05)

Analista	D Ib								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.4	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5280	16.0	08/16/2019	ND	416	104	400	3.77	QM-07
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	83.7	% 41-142							
Surrogate: 1-Chlorooctadecane	87.8	% 37.6-14	7						

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 whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



Sample Received By:

08/15/2019

Cool & Intact

Tamara Oldaker

Soil

Analytical Results For:

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

Received: 08/16/2019

NONE GIVEN

Received:08/16/2019Sampling Date:Reported:08/19/2019Sampling Type:Project Name:EBDU 37 WIWSampling Condition:

Project Location: NOT GIVEN

Sample ID: SP 13 @ 40' (H902814-06)

Project Number:

BTEX 8021B	mg	/kg	Analyze	ed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/16/2019	ND	1.72	86.0	2.00	8.65	
Toluene*	<0.050	0.050	08/16/2019	ND	1.84	92.0	2.00	10.8	
Ethylbenzene*	<0.050	0.050	08/16/2019	ND	1.91	95.3	2.00	12.3	
Total Xylenes*	<0.150	0.150	08/16/2019	ND	5.92	98.7	6.00	10.8	
Total BTEX	<0.300	0.300	08/16/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.0	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3040	16.0	08/16/2019	ND	416	104	400	3.77	
TPH 8015M	mg,	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	203	101	200	0.527	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	225	113	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					
Surrogate: 1-Chlorooctane	83.9	% 41-142	?						
Surrogate: 1-Chlorooctadecane	84.3	% 37.6-14	7						

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 whistoever 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.

Celeg D. Freene



Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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

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 whistoever 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 is 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.

Celeg D. Freene



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: APRILL COMMATTIN	American control and the contr	B/LL 70	ANALYSIS	IS REQUEST
Project Manager: Bluce Balled	P.O.	井		
Address:	Com	Company:		
City: State:	Zip: Attn:			
Phone #: Fax #:	Address:	ess:		
Project #: Project Owner:	ner: City:			
ame: EBOU 37 W.		e: Zip:		
Project Location: EBBU 37 WIN	Phone #:	#:		
Sampler Name: JEFF Sour	Fax #:	75		
FOR LAB USE ONLY	MATRIX	PRESERV. SAMPLING	TPH	
Lab I.D. Sample I.D.	(G)RAB OR (C) # CONTAINER GROUNDWATH WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE:	ICE / COOL OTHER: DATE	CL BTEX EXT.	
1 50130 151			VVV	
2 Sp130 20'		1 1435		
3 SP/30 25		1438		
C \$120 251		1884/		
6 SP13 @ 40'		-	\	
PLEASE NOTE: Liability and Damagas, 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 addition out of or related to the performance of services hereunder by Cardinal research relating to the performance of services hereunder by Cardinal research relating to the performance of services hereunder by Cardinal research relating to the performance of services hereunder by Cardinal research relating to the performance of services hereunder by Cardinal which is the performance of services hereunder by Cardinal without control of the performance of services hereunder by Cardinal which is controlled by the performance of services hereunder by Cardinal which is controlled by the performance of services hereunder by Cardinal which is controlled by the performance of services hereunder by Cardinal which is controlled by the performance of services hereunder by the performance of services hereunder by the performance of the performance of services hereunder by the performance of the performance	ant's exclusive remedy for any claim arising whether based in contract or fort, shall be limited to the amount paid by the client for the ause whatsoever shall be deemed walved unless made in writing and received by Cardinal within 30 days after completion of the quental damages, including without limitation, business interruptions, loss of uses of posts in courred by client, its substitiative and damages, including without limitation, business interruptions, loss of uses of posts incurred by client, its substitiative and the property of the above stated reasons or otherwise.	hall be limited to the amount paid by the client for the by Cardinal within 30 days after completion of the e. or loss of profits incurred by client, its subsidiaries non-any of the above stated response or otherwise.	he applicable es,	
Relinquished By: Date: 8/6/ Time: 8:0	Received,By:	Phone Result: Fax Result: REMARKS:	늘	**
Time:	22		Thek	
Delivered By: (Circle One) 2.32	#97 Sample Condition Cool Intact	CHECKED BY: (Initials)	118 THE	
Sampler - UPS - Bus - Other:	2. 70 TYPES TYPES NO NO	to,		



September 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 37 WIW

Enclosed are the results of analyses for samples received by the laboratory on 09/19/19 15:48.

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 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.

Celey D. Keine

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: 09/19/2019

Reported: 09/20/2019 Project Name: EBDU 37 WIW Project Number: NONE GIVEN Project Location: NOT GIVEN

Sampling Date: 09/19/2019

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Tamara Oldaker

Sample ID: NB @ 45' (H903246-01)

Chloride, SM4500Cl-B

mg/kg Analyzed By: AC Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Oualifier Analyte Result Chloride 160 16.0 09/20/2019 ND 432 108 400 3.64

Sample ID: NB @ 48' (H903246-02)

Chloride, SM4500Cl-B mg/kg Analyzed By: AC Analyte Result Reporting Limit Analyzed Method Blank BS % Recovery True Value QC RPD Qualifier Chloride 128 16.0 09/20/2019 ND 432 108 400 3.64

Cardinal Laboratories *=Accredited Analyte

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.

Celeg D. Keene



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celeg D. Freene

Relinquished By:

trees

Date: 9/15/15 Time: 3:48

Received By:

All Results are emailed. Please provide Email address:

ON O

Add'l Phone #:

Verbal Result:

Date: Time:

Received By:

REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C

W.

Corrected Temp. °C 4.3

Sample Condition
Cool Intact
Pes Pes
No No

CHECKED BY:

Turnaround Time:

Standard

PO

Bacteria (only) Sample Condition
Cool Intact Observed Temp. °C

Yes Yes
No Corrected Temp. °C

Relinquished By:

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Apade Corpuration		BILL TO	ANALYSIS REQUEST	
Project Manager:	Souce Bales	P.O.	.#:	- 1	
Address:		Con	Company:		
City:	State:	Zip: Attn:	F.		
Phone #:	Fax #:	Add	Address:		
Project #:	Project Owner:	ner: City:	. 2	re)	
Project Name: ¿	EBON 37 WEW	State:	te: Zip:	leos	
Project Location:	Project Location: を多か、 3フ WIW	Pho	Phone #:	P	
Sampler Name:	KA Pru-	Fax #	#	eh	
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING	Rus	
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 G	
	NB @ 45'		8/14/15 3	7	1
2	NB@ 48'		1/15/15 3:10		
PLEASE NOTE: Liability and D analyses. All claims including t service. In no event shalt Cardi	PLEASE NOTE: Lability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or ton, shall be limited to the amount paid by the client for the analyses. All daims 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.	or any claim arising whether based in contract or tort, s be deemed waived unless made in writing and receive ding without limitation, business interruptions, loss of u	shall be limited to the amount paid by the client for ad by Cardinal within 30 days after completion of the second loss of profits incurred by client, its subsidiars	the ne applicable	
			The second secon		

Thermometer ID #97 Correction Factor + 0.4 °C

Appendix C

PBEL Laboratory Report

PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: EBDU #37
Project Number: 19-0112-49

Location:

Lab Order Number: 9H28005



NELAP/TCEQ # T104704516-18-9

Report Date: 09/11/19

Fax: (432) 687-0456

Larson & Associates, Inc.

Project: EBDU #37

P.O. Box 50685

Project Number: 19-0112-49

Midland TX, 79710

Project Manager: Mark Larson

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-2 (0')	9H28005-01	Soil	08/27/19 12:20	08-28-2019 08:47
S-2 (5')	9H28005-02	Soil	08/27/19 12:23	08-28-2019 08:47
S-2 (10')	9H28005-03	Soil	08/27/19 12:30	08-28-2019 08:47
S-2 (15')	9H28005-04	Soil	08/27/19 12:38	08-28-2019 08:47
S-2 (20')	9H28005-05	Soil	08/27/19 12:40	08-28-2019 08:47
S-2 (25')	9H28005-06	Soil	08/27/19 12:43	08-28-2019 08:47
S-2 (30')	9H28005-07	Soil	08/27/19 12:46	08-28-2019 08:47
S-2 (35')	9H28005-08	Soil	08/27/19 12:50	08-28-2019 08:47
S-2 (40')	9H28005-09	Soil	08/27/19 13:00	08-28-2019 08:47
S-1 (0')	9H28005-10	Soil	08/27/19 13:12	08-28-2019 08:47
S-1 (5')	9H28005-11	Soil	08/27/19 13:13	08-28-2019 08:47
S-1 (10')	9H28005-12	Soil	08/27/19 13:17	08-28-2019 08:47
S-1 (15')	9H28005-13	Soil	08/27/19 13:18	08-28-2019 08:47
S-1 (20')	9H28005-14	Soil	08/27/19 13:20	08-28-2019 08:47
S-1 (25')	9H28005-15	Soil	08/27/19 13:32	08-28-2019 08:47
S-1 (30')	9H28005-16	Soil	08/27/19 13:53	08-28-2019 08:47
S-1 (35')	9H28005-17	Soil	08/27/19 13:59	08-28-2019 08:47
S-1 (40')	9H28005-18	Soil	08/27/19 14:00	08-28-2019 08:47
S-1 (45')	9H28005-19	Soil	08/27/19 14:06	08-28-2019 08:47
S-1 (50')	9H28005-20	Soil	08/27/19 14:16	08-28-2019 08:47
S-3 (0')	9H28005-21	Soil	08/27/19 14:36	08-28-2019 08:47
S-3 (5')	9H28005-22	Soil	08/27/19 14:42	08-28-2019 08:47
S-3 (10')	9H28005-23	Soil	08/27/19 14:43	08-28-2019 08:47
S-3 (15')	9H28005-24	Soil	08/27/19 14:45	08-28-2019 08:47
S-3 (20')	9H28005-25	Soil	08/27/19 14:50	08-28-2019 08:47
S-3 (25')	9H28005-26	Soil	08/27/19 14:52	08-28-2019 08:47
S-3 (30')	9H28005-27	Soil	08/27/19 14:54	08-28-2019 08:47
S-3 (35')	9H28005-28	Soil	08/27/19 14:57	08-28-2019 08:47
S-3 (40')	9H28005-29	Soil	08/27/19 15:00	08-28-2019 08:47

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (0') 9H28005-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	10.1	1.06 mg/kg dry	1	P9I0701	09/07/19	09/07/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (5')

9H28005-02 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	22.3	1.09 mg/kg dry	1	P9I0701	09/07/19	09/07/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (10') 9H28005-03 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	9.43	1.04 mg/kg dry	1	P9I0701	09/07/19	09/07/19	EPA 300.0
% Moisture	4.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (15') 9H28005-04 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	1.28	1.06 mg/kg dry	1	P9I0701	09/07/19	09/07/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (20') 9H28005-05 (Soil)

- 1										
			Reporting							
	Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	2.46	1.09 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (25') 9H28005-06 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.06 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (30') 9H28005-07 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	3.67	1.09 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (35') 9H28005-08 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	5.10	1.06 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-2 (40') 9H28005-09 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	2.89	1.08 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	7.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (0') 9H28005-10 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	67.6	1.08 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	7.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (5') 9H28005-11 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	58.3	1.10 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	9.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (10') 9H28005-12 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	16.1	1.02 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	2.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (15') 9H28005-13 (Soil)

		Reporting							
Analyt	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	9.81	1.02 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	2.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (20') 9H28005-14 (Soil)

		Reporting							
Analyt	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	14.0	1.06 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (25') 9H28005-15 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	11.0	1.04 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	4.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (30') 9H28005-16 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	12.9	1.06 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (35') 9H28005-17 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	5.65	1.09 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (40') 9H28005-18 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	8.16	1.06 mg/kg dry	1	P9I0701	09/07/19	09/08/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (45') 9H28005-19 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	21.0	1.10 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	9.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-1 (50') 9H28005-20 (Soil)

		Reporting							
Analyt	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	3.90	1.09 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (0') 9H28005-21 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	2.62	1.03 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	3.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (5') 9H28005-22 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	1.68	1.02 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	2.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (10') 9H28005-23 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	1.31	1.05 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	5.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (15') 9H28005-24 (Soil)

									l l
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.01 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	1.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (20') 9H28005-25 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	1.24	1.05 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	5.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (25') 9H28005-26 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.05 mg/kg dry	1	P9I0702	09/07/19	09/08/19	EPA 300.0
% Moisture	5.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (30') 9H28005-27 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.08 mg/kg dry	1	P9107/02	09/07/19	09/08/19	EPA 300.0
% Moisture	7.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (35') 9H28005-28 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	ND	1.09 mg/kg dry	1	P9I0702	09/07/19	09/09/19	EPA 300.0
% Moisture	8.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

S-3 (40') 9H28005-29 (Soil)

									1
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	1.23	1.06 mg/kg dry	1	P9I0702	09/07/19	09/09/19	EPA 300.0
% Moisture	6.0	0.1 %	1	P9H2904	08/29/19	08/29/19	ASTM D2216

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

	· · · · · ·	Reporting		Spike	Source	· · ·	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9H2904 - *** DEFAULT PREP ***										
Blank (P9H2904-BLK1)				Prepared &	Analyzed:	: 08/29/19				
% Moisture	ND	0.1	%							
Duplicate (P9H2904-DUP1)	Sou	rce: 9H28005	-16	Prepared &	Analyzed	: 08/29/19				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P9H2904-DUP2)	Sou	rce: 9H28005	-29	Prepared &	Analyzed:	: 08/29/19				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P9H2904-DUP3)	Sou	rce: 9H28012	-04	Prepared &	. Analyzed:	: 08/29/19				
% Moisture	5.0	0.1	%		5.0			0.00	20	
Duplicate (P9H2904-DUP4)	Sou	rce: 9H28011	-20	Prepared &	Analyzed:	: 08/29/19				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Batch P9I0701 - *** DEFAULT PREP ***										
Blank (P910701-BLK1)				Prepared &	Analyzed:	: 09/07/19				
Chloride	ND	1.00	mg/kg wet							
LCS (P910701-BS1)				Prepared &	Analyzed:	: 09/07/19				
Chloride	404	1.00	mg/kg wet	400		101	80-120			
LCS Dup (P9I0701-BSD1)				Prepared &	. Analyzed	: 09/07/19				
Chloride	409	1.00	mg/kg wet	400		102	80-120	1.27	20	
Calibration Blank (P9I0701-CCB1)				Prepared &	. Analyzed	: 09/07/19				
Chloride	-0.0460		mg/kg wet							

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9I0701 - *** DEFAULT PREP ***										
Calibration Blank (P9I0701-CCB2)				Prepared: (09/07/19 A	nalyzed: 09	/08/19			
Chloride	0.00		mg/kg wet							
Calibration Check (P9I0701-CCV1)				Prepared &	k Analyzed:	09/07/19				
Chloride	19.8		mg/kg	20.0		99.0	0-200			
Calibration Check (P9I0701-CCV2)				Prepared: (09/07/19 A	nalyzed: 09	/08/19			
Chloride	20.2		mg/kg	20.0		101	0-200			
Calibration Check (P9I0701-CCV3)				Prepared: (09/07/19 A	nalyzed: 09	/08/19			
Chloride	20.7		mg/kg	20.0		103	0-200			
Matrix Spike (P9I0701-MS1)	Sou	rce: 9H28010	-01	Prepared &	& Analyzed:	09/07/19				
Chloride	3260	27.5	mg/kg dry	2750	475	101	80-120			
Matrix Spike (P9I0701-MS2)	Sou	rce: 9H28010	-02	Prepared: (09/07/19 A	nalyzed: 09	/08/19			
Chloride	3050	26.6	mg/kg dry	2660	198	107	80-120			
Matrix Spike Dup (P9I0701-MSD1)	Sou	rce: 9H28010	-01	Prepared &	& Analyzed:	09/07/19				
Chloride	3710	27.5	mg/kg dry	2750	475	118	80-120	13.0	20	
Matrix Spike Dup (P9I0701-MSD2)	Sou	rce: 9H28010	-02	Prepared: (09/07/19 A	nalyzed: 09	/08/19			
Chloride	3130	26.6	mg/kg dry	2660	198	110	80-120	2.51	20	
Batch P9I0702 - *** DEFAULT PREP ***										
Blank (P9I0702-BLK1)				Prepared: (09/07/19 A	nalyzed: 09	0/08/19			_
Chloride	ND	1.00	mg/kg wet	•		-				

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source	÷	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P9I0702 - *** DEFAULT PREP ***										
LCS (P9I0702-BS1)				Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	425	1.00	mg/kg wet	400		106	80-120			
LCS Dup (P910702-BSD1)				Prepared: (09/07/19	Analyzed: 09	0/08/19			
Chloride	417	1.00	mg/kg wet	400		104	80-120	1.89	20	
Calibration Blank (P9I0702-CCB1)				Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	0.00		mg/kg wet							
Calibration Blank (P9I0702-CCB2)				Prepared: (09/07/19	Analyzed: 09	9/09/19			
Chloride	0.0590		mg/kg wet							
Calibration Check (P9I0702-CCV1)				Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	20.7		mg/kg	20.0		103	0-200			
Calibration Check (P9I0702-CCV2)				Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	20.6		mg/kg	20.0		103	0-200			
Calibration Check (P9I0702-CCV3)				Prepared: (09/07/19	Analyzed: 09	9/09/19			
Chloride	19.8		mg/kg	20.0		99.0	0-200			
Matrix Spike (P9I0702-MS1)	Sou	rce: 9H28010	0-03	Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	3420	28.1	mg/kg dry	2810	394	108	80-120			
Matrix Spike (P9I0702-MS2)	Sou	rce: 9H28010	0-04	Prepared: (09/07/19	Analyzed: 09	9/09/19			
Chloride	3230	27.8	mg/kg dry	2780	200	109	80-120			
Matrix Spike Dup (P9I0702-MSD1)	Sou	rce: 9H28010	0-03	Prepared: (09/07/19	Analyzed: 09	9/08/19			
Chloride	3080	28.1	mg/kg dry	2810	394	95.6	80-120	10.5	20	

P.O. Box 50685 Project Number: 19-0112-49
Midland TX, 79710 Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab, L.P.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch P9I0702 - *** DEFAULT PREP ***

Matrix Spike Dup (P9I0702-MSD2)	Source:	9Н28010-04	Prepared: 0	9/07/19 Aı	nalyzed: 09	9/09/19			
Chloride	3140	27.8 mg/kg dry	2780	200	106	80-120	2.58	20	

Larson & Associates, Inc.

Project: EBDU #37

P.O. Box 50685

Project Number: 19-0112-49

Midland TX, 79710

Project Manager: Mark Larson

Notes and Definitions

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	P AR		
Report Approved By:	Drew Dirlor	Date:	9/11/2019
			7/11/2017

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

LABORATORY: PACI	RELINQUISHED BY:(Signature)	RELINQUISHED BY:(Signature)	REALITY OF THE PROPERTY OF THE	S-) (25') 15 1	<u>-</u>)	٠	S-) (10') 12	5-1 (5) 11	S-1 ('0') 110	5-2(40) 9	5-2(35) 8	(30)	5-2 (25') 6	S-2 (20) S	S-2 (15) Y	S-2 (10) 3		S-2 (0') 1 8-2-19	Field Sample I.D. Lab # Date	TIME ZONE: Time zone/State: MST		S=SOIL W=WATER	Data Reported to:	ASOCIATES, Inc. Environmental Consultants	>	756 0	of 51
	DATE/TIME	DATE/TIME	PLOK 9.07	13:32 1	13:20	13:18	13/17	13:13	121:8	13:00	12:50	12546	のよう	SKC	12:38	12:30	123	-A 12:20 S	e Time Matrix		OT=OTHER	P≕PAINT SL=SLUDGE					
	RECEIVED BY: (Signature)	RÉŒIVED BY: (Signature)	RECEIVED BY)(Signature)	 \														-	# of Co HCI HNO ₃ H ₂ SO ₄ ICE UNPR	NaOH SESSERVE		PRESERVATION		Midland, TX 79701 432-687-0901	507 N Marienfeld Ste 200		
	OTHER []	1 DAY 🗍	TURN AROUND TIME							,													LAI PROJECT #: 19-011-d-	PROJECT LOCATION OR NAME:	DATE: 8/28/2019		
☐ HAND DELIVERED		CUSTODY SEALS - BROKEN DINTACT ONT USED	in': S	F																			0	LAB WORK ORDER#: 4H EBDU 年3十	PAGE 1 OF d	CHAIN-OF-CUSTOI®	No (22)

Page 157 of 515 RELINQUISHED BY:(Signature)

RELABORATORY: PBEL TOTAL ろしな 5-3 RELINQUISHED BY:(Signature) Time zone/State: S S Data Reported to: Yes Field Sample I.D. TRRP report? TIME ZONE: arson & 1 ssociates, Inc. Environmental Consultants 8 S. S. 5 40 S ⊠_N Ũ J 6 22 20 23 W=WATER A=AIR S=SOIL Lab# Date SL=SLUDGE OT=OTHER P=PAINT <u>8</u>,9 あ
江 1.22 1.22 1.20 子が 30,hl アルン コナギョ OF T 13:53 14,00 14/10 DATE/TIME DATE/TIME 33.5 Time Matrix 507 N. Marienfeld, Ste. 200 RECEIVED BY: (Signature) RECEIVED BY: (Signature) RESCRIVED BY: # of Containers Midland, TX 79701 The state of 432-687-0901 HCI PRESERVATION HNO Stedano H,SO, D NaOH D ICE UNPRESSERVED PROJECT LOCATION OR NAME: LAI PROJECT # 19-0112-40 DATE: 2 DAY 🔾 1 DAY 🔾 OTHER [] NORMAL X TURN AROUND TIME LABORATORY USE ONLY: 3,3 HAND DELIVERED CUSTODY SEALS - D BROKEN DINTACT ON NOT USED CARRIER BILL # RECEIVING TEMP: 3.5 LAB WORK ORDER# CHAIN-OF-CUSTO COLLECTOR: THERM#: PAGE & CF+1 23 FIELD NOTES 70 Page 38 of 38

Released to Imaging: 1/9/2025 3:59:36 PM

Appendix D

Boring Logs and Monitoring Well Records

				I	BORING	RECORD											
		Start: 9:	28		NO	90		PII	D R	REA	DIN	G	S	SAMF	PLE	E	REMARKS
GEOLOGIC	DEPTH	Finish:	11:30 - Tech	Issues	DESCRIPTION USCS	GRAPHIC LOG	Р	РМ	Χ_	1			- 6	READING	AGJ.	DEPTH	BACKGROUND PID READING
UNIT		DESC	CRIPTION LITHO	DLOGIC	ESC U	RAPI	2 4	4 6	8 1	10 12	14	16 18		O REA			SOIL:PPM
	0					0							_ 		ļä		SUIL:PPM
			nd, 5YR, 4/2, ı Grey, Well S										H		l	1	_
	_	Nedulsi	i Giey, Weii C	oortea													_
	5 —	0.57/5	7/0 1: 1/ 0													<u> </u>	
			7/2, Light Gre ı Subangular													`	
	_	1 1011111	r Cubangalai	Cidoto													_
	10—	40)/D 7	//O . W II . O	l . \	SM												_
	_	Pale Bro	7/3, Well Sorte own	ea, very												5	_
	15																_
	15 <u> </u>	7.5YR,	7/3, Pink			타하게											
	_																_ _
	20			_													_
	5YR, 5/6, Yellowish Red																_
	_															5	_ _
	25—	Clayey Yellowis	Silt, 5YR, 5/6	,													_
	_	I GIIOWIS	SITINGU														_
	_												t				_
	30—																_
	_																_
	_				CI								F			+	_ _
	35—				CL												
	_																_
	40—															1	_
	40—																
	_																_
	45															-	_
	_																_
	_	Sand M	ledium to Co	arse	SW												_
	50	Sand w	ith Subrounde	ed Clast	300												—
	Inclusions, Very Moist, 1																_
	TD: 50'																_
10	NE CONTINU	JOUS AUGER S		WATER TAR	SLE (TIMF	OF BORING)) J(A BC	IUI	MBI	ER :	/	/pa		; C	or	p. /19-0112-49
ı ==		ENETRATION T		LABORATO			H	OLE	DI	IAM	ETE	R :		2"			
	NDISTURBEI		+	PENETROM		NS/ SQ. FT)											nice, NM
1.		E (24 HRS)	NR	NO RECOVI		NI IMPED :	- 1							Ow OP:		1	SDC
Agrson & ssociates, I	arson & DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR: SDC DRILLING METHOD: Air Rotary																
			I.														-

				BORING	RECORD											
		Start: 12	:20	NO	90		PIE	RE	ΑΓ	OIN	3	S	SAME		Ξ	REMARKS
GEOLOGIC	DEPTH	Finish: 1	3:00	DESCRIPTION USCS	SRAPHIC LOG	PF	PM :	X	1				SING	20	-	BACKGROUND
UNIT		DESC	CRIPTION LITHOLOGIC	SCR	APH	2 4	6	8 10	12	14	16 18		READING	5	DEPTH	PID READING
		2_0	5	吕	GR.									DEC	凯	SOIL :PPM
	0	Silty Sa	and, 10YR, 5/1, 1-6mm												1	_
	_	Suban	gular Clast Inclusions												'	_
																_
	5 —	2.5YR,	4/2, Dark Greyish												_	
		Brown	,												5	_
																_
		2 5YR	7/3, Pale Brown	SM												
	10—	2.0114,	770, I die Brown									H			10	
																_
		Subang Diamet	gular inclusions, 1-2mm													
	45	Diamei	lei													_
	15		/6, Yellowish Red, Well										+	\dagger	15	\vdash
		Sorted														
	-	Silty Cl	lav EVD 5/6 Mall													_
	20		ay, 5YR, 5/6, Well , Yellowish Red		開訊											
		00.100	, renement tod												20	_
	25															_
	25—				周周月										25	
	_			SM												_
				JIVI												
	30—	Suban	gular Clast Inclusions									L	1	-	30	
	-		m Diameter													_
																_
	35											+	+	\dagger	35	
																_
	40														1.0	
	_		TD: 40'												40	_
						$\prod_{i \in I} f_i$							<u> </u>		\ \ \	/ 10 0112 40
		OUS AUGER S			OF BORING)	- 1	OLE OR M							2"		. / 19-0112-49
	TANDARD PE NDISTURBED	ENETRATION T	L EABORATO		OCATION NS/ SQ. FT)	- 1										unice, NM
	ATER TABLE		NR NO RECOVI		INO/ OU. FI)								. Ov			
			DRILL DATE :	BORING	NUMBER :								OR			SDI
Aarson & ssociates, I	nc. ants		8-27-19	S-	-2	DF	RILL	ING	М	ETI	10E) :_	Air I	Rot	ary	

					RECORD											
		Start: 14	:36	DESCRIPTION USCS	90	ļ	PID	RE/	٩D	INC	3	S	AMI		E	REMARKS
GEOLOGIC	DEPTH	Finish: 1	5:00	RIPT SCS	3RAPHIC LOG	PPI	M >	(<u>1</u>				_ မူ	PID READING	2	RECOVERY DEPTH	BACKGROUND PID READING
UNIT		DESC	CRIPTION LITHOLOGIC	SCF	AP	2 4	6 8	3 10	12	14	16 18		REA	Š		SOIL:PPM
	0			👸	R. P.							=		ì		SOIL :PPM
			and, 5YR, 4/2, Dark		围槽							F	+	+	1	
	\vdash	Reddis	h Grey													_
				SM												
	5 —													1	5	
	\vdash	C. dama.	unded Cleet Inclusions													_
			unded, Clast Inclusions im in Diameter, 2.5YR,													_
			ght Yellowish Brown													
	10—											-		-	10	
	\vdash															_
																_
	15	Wall C	ortod									-	+	+	15	<u> </u>
	\exists	Well S	orted													_
																_
	20			SM									+		20	
	_	Yellow	ish Red, 5YR, 5/6	SIVI												_
	25											F	-	+	25	
	\vdash				情消得											_
	_															_
	30—												+	+	30	
	_				+++++											_
	35	Silty Cl	ay, 5YR, 4/6, Yellowish	1												_
		Red	ay, 6114, 116, 161101116.		抗抗										35	
	-			CL												_
	40												-	-	40	
			TD: 40'												"	-
						10.				\perp	\Box	nac	ho	Ţ). / 19-0112-49
		IOUS AUGER S			OF BORING)	- 1		DIAI				-		2	-	13-U 1 12- 4 3
	ANDARD PE	ENETRATION T	_ LABOTATI	ORY TEST I		- 1										unice, NM
	ATER TABLE		+ PENETRO		NS/ SQ. FT)	- 1		OLO								
			DRILL DATE :		NUMBER :			ING								SDI
Aarson & — Ssociates, II Environmental Consulta	nc.		8-27-19		-3			NG								

				BORING	RECORD												
		Start: 13	3:41	N O	90		PIE) F	RE/	٩DI	NG		S	AMP	LE	=	REMARKS
GEOLOGIC	DEPTH	Finish:	14:28	DESCRIPTION USCS	SRAPHIC LOG	PF	PM .	X.	_1				2	PID READING	RY		BACKGROUND
UNIT		DESC	CRIPTION LITHOLOGIC	SCF	APH	2 4	6	8	10	12 1	4 10	3 18	JE J	ZEAL	OVE.	빏	PID READING
			51.11 11011 E11110E0010	DE	GR/								NUMBER	딤	REC	DEPTH	SOIL :PPM
	0		y, 7.5YR, 5/2, Brown,														_
	_		ist, High Placity, Very	CL												Ι΄	-
	_	Fine Gra	ined Quartz Sand]
	5 —	Caliche	7.5YR, 8/2, Pinkish													5	-
	_		loderate Hard, Very]
	_	I	ined Quartz Sand	Caliche													-
	10 —																\Box
	_															10	′
	_	Silty Sar	nd, 10YR, 7/4, Very]
			wn, Very Fine Grained														-
	15 —		Sand, Poorly Sorted,	SM												15]
	_	Round, I	VIOISL														-
	_]
	20	Sand. 5	YR, 6/6, Reddish												<u> </u>	20	_
	_	Yellow, \	Very Fine Grained]
	_		Sand, Poorly Sorted,														-
	25	Round, I	VIOIST														\Box
	_															25	
	_	•															-
	30																
	_															30	-
	_																
				SW													-
	35															35	
	_	•															_
	_																
	40															40	, ⊢
	_]
	_																-
	45				3]
	_																-
					2												
	_		TD: 48'														
O	NE CONTINU	JOUS AUGER S	SAMPLER WATER TA	BLE (TIME	OF BORING)	- 1									Co		/ 19-0112-49
ST	TANDARD P	ENETRATION T	EST LABORATO	ORY TEST L	OCATION		OLE								ים	<u>5"</u>	
	NDISTURBE				NS/ SQ. FT)		DCA										<u># 37</u> son
		E (24 HRS)	NR NO RECON		NUMBER :		AI GI RILL									.aı	SDC
Aarson & Sociates, I	nc.		9-19-2019	1	Boring	- 1	RILL									ary	

Start: 11:40 BECOLOGIC DEPTH Finish: 12:98 DESCRIPTION LITHOLOGIC Sitty Clay, 7:5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry Caliche, 7:5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, 10:7YR, 6/4, Light Yellowish, Very Fine to 15. Fine Grained Quartz Sand, Poorty Sorted, Subrounded, Loose 7:5YR, 6/6, Reddish Yellow Bellow 10', Poorty Sorted, Subrounded, Loose 10:YR, 6/6, Reddish Yellow Bellow 10', Poorty Sorted, Subrounded, Loose 10:YR, 6/6, Reddish Yellow Bellow 15', Sand, 5YR, 6/6 to 6/6, Vellow, Very Fine Grained Quartz Sand, Poorty Sorted, Subrounded, Quartz Sand, Poorty Sorted, Subrounded, Loose 10:YR, 6/6, Reddish Yellow Bellow 15', Sand, 5YR, 6/6 to 6/6, Vellow, Very Fine Grained Quartz Sand, Poorty Sorted, Round, Molst, Very Molst 30:Yellow, Very Fine Grained Quartz Sand, Poorty Sorted, Moderately Well Cemented to Well Cemented Sand Stone Gravelly Sand, 7:5YR, 6/6, Reddish Yellow, Fine to Medium Cobbles to 40mm TD: 62' WAIRE TABLE (TIME OF BORNING) JOB NUMBER - Apache Corp./ 19-0112-49 HOLE DAMFETE: STANDABO PEACETRION EST LABORATORY TEST LOCATION L					BORING	RECORE	-				
Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 15', Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Molist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Molerately Well Cemented to Well Cemented to Well Cemented Sound Stone Sound Stone Sound Stone Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies Tibe Granus Sound So			Start: 11	:40	N O	90					REMARKS
Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 15', Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Molist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Molerately Well Cemented to Well Cemented to Well Cemented Sound Stone Sound Stone Sound Stone Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies Tibe Granus Sound So	GEOLOGIC	DEPTH	Finish: 1	2:58	IPTI CS	IC L			2	<u>ל</u>	BACKGROUND
Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 15', Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Molist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Molerately Well Cemented to Well Cemented to Well Cemented Sound Stone Sound Stone Sound Stone Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies Tibe Granus Sound So			DESC	PIPTION LITHOLOGIC	SCR	HA		Riser			PID READING
Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 10', Poorly Sorted, Round 10'YR, 7/4, Very Pale Brown Below 15', Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Molist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Molerately Well Cemented to Well Cemented to Well Cemented Sound Stone Sound Stone Sound Stone Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers sampler Language Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies to 40mm Tib: 62' One Continuous Augers Sound Sound Colbies Tibe Granus Sound So			DES	SKIP HON LITHOLOGIC	E	3R		Bentonite			SOIL:PPM
Very Fine Grained Quartz Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Sitty Sand, 10YR, 6/4, Light Yellowish, Very Fine to 15. Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10'VR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented 45. ABOUND TID: 62' ONE CONTINUOUS AURCE SAMPLE INCOMPANION TEST LOCATION INCOMPANION TEST L		0	Silty Cla	v 7.5YR 5/1 Grav		///	7/				_
Sand, Dry Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Sity Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 40.00 42.32 Graded Graded Well Cemented Sand Stone ONE CONTINUOUS AUGER SAMPLE WATER TABLE (TIME OF BORNING) I STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE WATER TABLE (TIME OF BORNING) STANDARD PENETRATION TEST UINDISTURBED SAMPLE STANDARD STANDARD PENETRATION TEST UINDISTURBED SAMPLE STANDA		_			CL					1	_
Calicine 7.51K, 711 60 / Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 46.72 46.72 46.72 46.72 ONE CONTINUOUS AUGRE SAMFLE WATER TABLE (TIME OF BORNING) LABORATION TEST LOCATION TEST			1 -		Caliche						_
Very Fine Grained Quartz Sand, DryR, 6/4, Light Yellowish Very Fine to 15. Fine Grained Quartz Sand, Poorty Sorted, Subrounded, Loose 20. 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Vellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist 35. Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 46.72 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION PRINTED TABLE (TIME OF BORING) LABORATORY TEST LOCATION HOLD DIAMETER: 5" LABORATORY TEST LOCATION LABORATORY TEST		5 —	Caliche	7.5YR, 7/1 to 7/2,						5	_
Sand, Dry Silty Sand, 10YR, 6/4, Light Yellowish Very Fine to Fine Grained Quartz Sand, Poorty Sorted, Subrounded, Loose 20		_	11	-							_
Silty Sand, 10YR, 6/4, Light Yellowish, Very Fine to Fine for Grained Quartz Sand, Poorly Sorted, Subrounded, Loose Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow Pallow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented to Well Cemented to Well Cemented to TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION PRINCE TO THE LABORATORY TEST LOCATION LAISON DIRECT MALE (24 HRS) No RECOVERY DRILLING CONTRACTOR DRILLING CONTRACTOR STANDARD PENETRATION TEST LABORATORY TEST LOCATION LAISON DRILLING CONTRACTOR DRILLING CONTRACTOR DRILLING CONTRACTOR STANDARD PENETRATION TEST LABORATORY TEST LOCATION LAISON DRILLING CONTRACTOR DRI		_									
Yellowish, Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented to Well Cemented Sand Stone 46.72 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION PRINCE FOR THE LEGAL OF THE LABORATORY TEST LOCATION PENEL DAME: BORNON MARKER DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION PRINCE FOR TOWN DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFINED THE LABORATORY TEST LOCATION LAISON DEFOLLATION TO RECOVERY DEFOLUTION TO		10—			⅃ ┃					1,	
15_ Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Well Cemented Well Cemented Sand Silica Sand Si		_			SM					"	ή –
Poorly Sorted, Subrounded, Loose 20. 7,5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented 45 Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Stone Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' OME CONTINUIOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) WATER TABLE (24 HIRS) NR NO RECOVERY WATER TABLE (24 HIRS) NR NO RECOVERY BORING NUMBER: DEBLU #37 LABORATORY TEST LOCATION LAISON BORING NUMBER: DEBLU #37 LAISON		15	1	•							_
Loose 7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 40.00 Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Gorained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) JOB NUMBER: Apache Corp./ 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) WATER TABLE (24 HIRS) NR NO RECOVERY LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (24 HIRS) NR NO RECOVERY LABORATORY TEST LOCATION LABORATORY TEST LOCATION LABORATORY TEST LOCATION LOCATION EBDU #37 LOCATION EBDU #37 LOCATION EBDU #37 LOCATION LABOROM LAISON DRILLING CONTRACTOR:		15	1								
7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented to Well Cemented Sand Stone 46.72 46.72 ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION TO REDDU #37 LAGED AVER TABLE (24 HIRS) NR NO RECOVERY LAIGH CONTRACTOR:		_	,	orica, Cabroanaca,						15	;
Below 10', Poorly Sorted, Round 10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Vellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Vellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 40.00 42.32 Graded Slica Sand Slica Sand Slothed Screw Graded Slica Sand Slothed Screw One continuous Auger sampler TD: 62' One continuous Auger sampler Standbadd Pewerrantion test Laboratory Test Location Undistrusted Sample Water Table (1 time of Borning) JOB NUMBER: Apache Corp./ 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37 LIAI GCLO (25T; M. Larson) DRILLING CONTRACTOR:		20 -		6/6, Reddish Yellow							_
10YR, 7/4, Very Pale Brown Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented 45. Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (1 TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: BORING NUMBER: DRILL LABSON DRILL LABSON DRILL LATSON DRILL LATS			Below 1	0', Poorly Sorted,							
Below 15' Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Graded Silica Sand Silica Sand Stone Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER TTD: 62' WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE VATER TABLE (24 HRS) NR NO RECOVERY LABORATORY TEST LOCATION NO RECOVERY LABORATORY TEST LOCATION NO RECOVERY LABORATORY TEST LOCATION LAISON DRILL DATE: BORING NUMBER: DRILL DATE: BORING NUMBER: DRILL DATE: BORING NUMBER: DRILL LATSON DRI			1 1							20)
Sand, 5YR, 5/6 to 6/6, Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION EBDU #37 LAI GEOLOGIST M. Larson DRILL DATE: BORING NUMBER: BORING NUMBER: BORING NUMBER: BORING NUMBER: BORIN		25	11	•							_
Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Graded Silica Sand Silica Sand Silica Sand Stone Graded Silica Sand Silica Sand Silica Sand For Normal Stone One Continuous Auger Sand, Round, Cobbles to 40mm TD: 62' One Continuous Auger Sand, Rou			·]						_
Vellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 40.00 42.32 Graded Sliica Sand Sliica Sand Stone Graded Sliica Sand Stone Graded Sliica Sand Stone TD: 62' ONE CONTINUOUS AUGER SAMPLE STANDARD PENETRATION TEST UNDISTURBED SAMPLE PENETROMETER (TOMS SQ. FT) WATER TABLE (24 HRS) NR NO RECOVERY MATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILL DATE: DRILL D					SW					25	; -
Quartz Sand, Poorly Sorted, Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Graded Silica Sand Soriew Graded Soriew John Soriew Graded Soriew Graded Soriew John So		30—									_
Round, Moist, Very Moist Below 35' Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone 46.72 46.72 Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Gorained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE H PENETROMETER (TOMS SO, FT) WATER TABLE (24 HRS) NR NO RECOVERY MATER TABLE (24 HRS) DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:		_									_
Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented 48.		_								30	,
Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Graded Silica Sand Silica San		35—									_
Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented Sand Stone Graded Silica Sand Silica San		_	Sandsto	ne 5YR 6/6 Reddish	_						_
46.72		_								35	5 -
Well Cemented Sand Stone Graded Silica Sand Stone 2" Sch. 40 PVC Threaded O.0.0" Slotted Screw Grained Quartz Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE HERETROMETER (TONS/ SQ. FT) WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: BORING NUMBER: DRILL DATE: DRILL DA		40—					40.00				_
Sand Stone Silica Sand Stone 2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw Sorew Soluted Screw Solute				•			42.32				_
Agrson & Parith Date: Agrson & Parith Date: Borning number: Borning number: Drillling contractors			Well Cer	nented						40	
ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (24 HRS) ORIGINATE STANDARD PENETRATION TEST DRILL DATE: DRILL DATE: STANDARD PENETRATION TEST DRILL DATE: DR	46.72	45			ı	1 .		Silica Sand			
Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: PPV Threaded 0.0.0" Slotted Screw 60 61.97 62.65 JOB NUMBER: Apache Corp./ 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37 LAI GEOLOGIST: M. Larson DRILLING CONTRACTOR:		_			Stone						_
Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: Threaded 0.0.0" Sp 61.97 62.65 Threaded 0.0.0" Solution Screw Solution Screw FOR DATE OF BORING 1 Threaded 0.0.0" Solution Screw FOR DATE OF BORING 1 SOLUTION FOR DATE OF BORING 1 LABORATORY TEST LOCATION LOCATION: EBDU #37 LAI GEOLOGIST: M. Larson DRILL ING CONTRACTOR:	<u> </u>							WW.		45	
Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: Slotted Screw Slotted Screw Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, SP 61.97 62.65 JOB NUMBER: Apache Corp./ 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37 LAI GEOLOGIST: M. Larson DRILL DATE: DRI		50—						12XXXI			_
Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: Screw Screw		_									_
Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE HPENETROMETER (TONS/ SQ. FT) WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:		55—			_			1XX/YX			
Grained Quartz Sand, Round, Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (1 IME OF BORING) UNDISTURBED SAMPLE HOLE DIAMETER: WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:			Gravelly	Sand, 7.5YR, 6/6,	$\backslash $						
Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (1IME OF BORING) LABORATORY TEST LOCATION WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:		_	II .		η	s					_
Cobbles to 40mm TD: 62' ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILL DATE: DRILL		60				- V				60	,
ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE PENETROMETER (TONS/ SQ. FT) WATER TABLE (24 HRS) NR NO RECOVERY DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:		_			SP	2/3	61.97	Cap			_
STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (1MILE OF BORNING) LABORATORY TEST LOCATION HOLE DIAMETER: 5" LOCATION: EBDU #37 LAI GEOLOGIST: M. Larson Agrson & DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:				I D. 02			02.00	r			
STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (1MILE OF BORNING) LABORATORY TEST LOCATION HOLE DIAMETER: 5" LOCATION: EBDU #37 LAI GEOLOGIST: M. Larson Agrson & DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:	<u> </u>	NE 001:=::::	10110 1112== 1	24MDI ED			. JOB NI IMP	FR · Apache	Co	rp.	
UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) LOCATION : EBDU #37 WATER TABLE (24 HRS) NR NO RECOVERY LAI GEOLOGIST : M. Larson DRILL DATE: BORING NUMBER : DRILLING CONTRACTOR :	=				•)				
WATER TABLE (24 HRS) NR NO RECOVERY LAI GEOLOGIST : M. Larson DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:				L LABORAT							
A grson & DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR:						NS/ SQ. FT)		-			
A UI SUIT OF THE PROPERTY OF T			_ (NUMBER ·					
	Harson & Fryironmental Consult	Inc.								VR_	

	BORING RECORD Surface Elevation: 3,563.50' DEMARKS													
		Start: 15	5:02		N O	00	Surface Elevation: 3,563.50' TOC Elecation: 3,566,23' REMARKS							
GEOLOGIC	DEPTH	Finish:	15:55		DESCRIPTION USCS	3RAPHIC LOG								
UNIT		DES	CRIPTION LITHOLOGIC		SCF	APH	Vented Cap Riser Bentonite Bentonite Riser Bentonite Bentonite Bentonite Background PID READING Soil: So	PPM						
						GR	SOL:	PPM						
	0	Silty Cla	ay, 10YR, 5/6, Ash		CL	1444	15:02							
		Brown,			<u> </u>			4						
	_	Caliche	, 7.5YR, 8/2, Pinkish	1				-						
	5 —	White, S	Sandy to Moderate				15:03	┨						
	5 —	•	ne Grained Quartz					\exists						
	_	Sand		C	Caliche			-						
	_							┨						
	10—						15:05	╛						
	_							_						
	_	Silty Sa	nd, 7.5YR, 7/2,					\exists						
	_	_	Gray, Very Fine					1						
	15		l Quartz Sand, Poor	ıv			15:10	_						
	-	Sorted,	•	.,				\exists						
	_	,	_ · ,		SM									
	20						15:15	\dashv						
	_	Cond F	VD 6/0 Doddiah					\dashv						
			YR, 6/0, Reddish				Sodium Bentonite							
	_		Very Fine Grained Sand, Poorly Sorted	.				4						
	25	Dry	Sand, Foony Soned	',			15:17	\dashv						
	_	ыу												
								\exists						
	30				SW		15:22	\exists						
					377			1						
	_							\dashv						
	35						15:23	\exists						
	55_							\exists						
	_							4						
	_							\exists						
	40_						15:28	╛						
			YR, 6/6, Reddish					4						
	-		Moderate Well					\exists						
		Cement	ted, Poorly Sorted, D	Ory										
	45						15:30	╛						
	-				SW	[: ::	45.5	4						
	-					[: :]	47.5	\exists						
			.				Graded	\exists						
			Continue				Sand	\dashv						
\square		JOUS AUGER S		R TABL	.E (TIME	OF BORING		-[
ST	TANDARD PE	ENETRATION 1	TEST LABOR	PRATORY TEST LOCATION										
	NDISTURBEI					NS/ SQ. FT)	' I							
w	ATER TABLE	E (24 HRS)		ECOVEF			LAI GEOLOGIST : M. Larson	-						
Aarson &	nc		DRILL DATE :	E		NUMBER :	DRILLING CONTRACTOR: SDC	-						
Associates, I Environmental Consulta	nts.		9-20-2019		TMV	1-2	DRILLING METHOD : Air Rotary							

				BORING	RECORD						
		Start: 15	5:02	N O	90	Surface Elevation: 3 TOC Elecation: 3,56				REMARKS	
GEOLOGIC	DEPTH	Finish:	15:55	DESCRIPTION USCS	GRAPHIC LOG	,		2	λ Υ	BACKGROUNI	
UNIT		DESC	CRIPTION LITHOLOGIC	SCF	APH	*Continue*			DEPTH	PID READING	j DDM
		DEG	7 TION ENTITIOE 0010	Ä	GR/	Continue	:			SOIL:	PPM
	50	,	*Continue*								
											_
											_
							aded ica Sand				
		0.114									
	55 —	Moist at	d Clayey Below 50',								
		WOISt at	. 55								_
											_
											_
							" Sch. 40				_
	60 —					₩ ₩ ₽	VC hreaded				
						₩ □₩0	.0.0"				_
				SM-SC			crew				_
				OW CC							_
	05										_
	65 —										
	_										_
	_					67.85	Сар				_
	-										_
	70										_
	70										
											_
											_
											_
	75										_
	′5 —										
	\neg	Gravel,	7.5YR, 4/3, Light								-
			Poorly Sorted,	GW							-
		Round,	Red Bed								_
	80		TD: 79'			80.00					-
	00 —					00.00 1 2 2 2 3					
											-
											-
											-
											-
ONE	E CONTINU	OUS AUGER S	AMPLER MATER	TABLE / TIME		, JOB NUMBER :_ A	<u>pache</u> C	or	p. /	19-0112-49	
		ENETRATION T		TABLE (TIME TORY TEST L		HOLE DIAMETER				5"	
	DISTURBED		_ ENDOINA	OMETER (TO		LOCATION : EB	DU #37				
		(24 HRS)	NR NO REC			LAI GEOLOGIST :	M.	La	rsor	1	
			DRILL DATE :	BORING I	NUMBER :	DRILLING CONTR	ACTOR	:_		SDC	
Aarson & ssociates, In Environmental Consultant	IC.		9-20-2019	TMW	<i>I</i> -2	DRILLING METHO					

Appendix E

DHL Laboratory Report



October 04, 2019

Mark Larson Larson & Associates

507 N. Marienfeld #205

Midland, TX 79701

TEL: (432) 687-0901

FAX (432) 687-0456 Order No.: 1909235

RE: EBDU #37

Dear Mark Larson:

DHL Analytical, Inc. received 2 sample(s) on 9/26/2019 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont

General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-19-24



Table of Contents

Miscellaneous Documents	3
CaseNarrative 1909235	6
Analytical Report 1909235	7
AnalyticalQCSummaryReport 1909235	9

Received by OCD: 1/9/2025 3:01:53 PM

7	C
2	
V	3
ď	٠
C	۱
V	
7	
ò	3
.,	7
10	
Ċ	ś
è	7
	5
ç	a
\geq	
0	١
F	1
	1
1200.	
20000	
×	ì
7	S
6	ŭ
Ġ	
- 6	ú
Ġ	7
-	3
0	ŭ
~	j
2	ś

																								(زار	7/	\ II	N -	$\underline{\mathbf{U}}$	<u> </u>	\cup \cup	15	\cup	<u>ノY</u>
ΙΛ				- 50)7 N. I	Mari	enfe	eld	, St	e. 2	200		DA	ATE:	_(9-2 LOC ECT#	_5	5-1	<u> </u>	>1	7									PAG	SE_)F_	
Aarson & ssociat	es Ind			**		llan						Ì	PC)#:	_							LA	۱B اکا	MC MC) 		KD 11	上K	#	•	04	<u> </u>	기_	- -
Environment	al Consulta	nts			4	432-	687-	-090	01				PF	ROJE	ECT	LOC	ATI	ON 1 a	OR -∩	NA 11)))	: .Ца	<u>ار</u>	V		<u>~</u>	<u>-11</u>	<u> </u>	TO		F	<u>r</u> .		
Data Reported to:						1							LA	I PR	OJ	ECT#	‡: —	<u> </u>		7	<u></u>	<u> </u>	<u>1 </u>	7	_	7)LL	E	7	K:	-		7	=
TRRP report?	S=SOIL W=WATE A=AIR		AINT SLUDGE OTHER			PRI	ESE	_		\neg																							//	
TIME ZONE: Time zone/State:					# of Containers			□ NaOH		UNPRESSERVED			8/2 8/							7.8 V) 	"/			
Field Sample I.D.	Lab#	Date	Time	Matrix	# of Co	를 된	HNO	H ₂ SO ₄	띨	UNPR	N/S							\ii\ \\$\			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					Ž	/6 8/2			<u>/</u>	FIE	LD NO	OTES	
TMWI	01	9-23-19	15:00	W	4	3	\dashv		4		X		一		2)				X							
TMW 2	02	9-23-19	17:10	W	4	3			4		X												_/	X			X							
									•							\Box		\perp			_	\perp	\perp	_										
																							\perp										_	
																											_							
									-	\neg			一		1						\top													
	<u> </u>	<u> </u>	<u> </u>											\neg					Ţ															
				<u> </u>	+			\dashv	-					\top	+	+	-	\dashv	+	\dagger	十	\dashv	\dashv				-							
	<u></u>		-				\dashv	_	\dashv	\dashv					+	-			\dashv	-	+	┪	\dashv	\dashv	_		H	 	╁╌					
					 			-				\vdash	\dashv	\dashv	+			\dashv	\dashv	\dashv	+	+	+	_			-	-	\vdash	-				
					+	-	\vdash	_			_	-		\dashv				\dashv	+	\dashv	-	+	\dashv	ᅥ		├─		 	\vdash	 				
				<u> </u>	-	<u> </u>		_				\vdash	\square	+	_	_		\dashv	\dashv	_	\dashv		+			\vdash	-	\vdash	\vdash					-
						$oldsymbol{\perp}$		_							4			_	\dashv	4	\dashv	-+	\dashv	_			<u> </u>	-	╁┈					
					 _									-	_ -	-		-		1	-	\dashv	-			<u> </u>		├	\vdash	<u> </u>				
																		$ \bot $	_		_	\dashv	_			_	_	<u> </u>	_					
TOTAL																														L				
TUNQUIGHED BY:	(Signature)	n 9-	26-19	A:O			LS	0							1	TURN A	_		TIM	E	LA	BOF	ZATO	ORY	′US	E O	NLY 3. 5	(: 7 ~	بر T⊬	IFRM	l#:	78)	
RELINQUISHED BY:		<u>972</u>	DATE/T	080		رځ	<u>~</u>					٠			1	DAY C	1				CU	STC	DY	SEA	ALS	. [Ъв	ROK	ΚEΝ	ŻIN	TAC1	- 🗆 N	OT U	SED
RELINQUISHED BY:	(Signature)		DATE/T	IME	RECE	EIVE	BY:	: (Si	gnat	ure)	1				t	THER					X	CAF	RIE	RB	ILL	# _	L	ِ ک	0	<u></u> .		_		
LABORATORY:	DHI.												3	· · · ·	┥.					_		ΙAΗ	ID D	ELI	VEF	RED								

FLSO

WWW.LSO.COM Questions? Call 800-800-8984

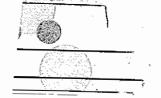


Airbill No. LSO0BYG9

7. To: Print Name (Person) Phone (Important)	2. From:	Phone (Important)
Company Name	Company Name JERROOM & ASSOCIATED	CALIFORNIA TO EAST BENT AND TO THE TOTAL TOT
Street Address (No P.O. Box or P.O. Box Zip Code®Deliveries)	Street Address 507 HORSES (ADMITSOUSTAD)	14-4-11-14-14-14-14-14-14-14-14-14-14-14
Suite / Floor	Suite / Floor 205	·
City State Zip	City State	<i>Z</i> p 7070j
Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.	4. Package: Weight:	FOR DRIVER USE ONLY
LSO Priority Overnight* 10:30 a.m. to most cities LSO Saturday* O Early Overnight* 30 a.m. select cities Other	Your Campany's Billing Reference Information Ship Date: (mm/dd/yy)	Driver Number Check here if LSO Supplies are used with LSO Ground Service.
Economy Next Day* *Check commitment times and availability n.m. to most cities at www.lso.com	5. Payment:	Pick-up Location
nd Day* Assumed LSO Priority Overnight service unless otherwise noted.		Date:
Without Delivery Signature (See Limits of Liability below) Release Signature x W x H		City Code:

WRITING ON AIRBILL MAY DELAY TRANSIT TIMES OR RESULT IN MON-DELIVERY. LIMIT OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater ...ceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. If deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. "Signature Required" service is only available when printing a label online at LSO.com. JERN YIGHANTHE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. Packaging provided by LSO is for EXPRESS USE ONLY — NEVER TO BE USED FOR LSO GROUND Service. OVERSIZE RATES MAY Y. DELIVERY COMMITMENTS MAY VARY, ADDITIONAL FEES MAY APPLY. See LSO Service Guide for further details.

CUSTODY SEAL DO DATE SIGNATURE & ROCKEL OWLY



QEC

Quality Environmental Containers 800-255-3950 • www.qecusa.com

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates			Date Receiv	ved:	9/26/2019
Work Order Number 1909235			Received by	EL	
5			5		
Checklist completed by: Signature	9/26/20 ⁻ Date	19	Reviewed by	Initials	9/26/2019 Date
Car	rier name	<u>LoneStar</u>			·
Shipping container/cooler in good condition?		Yes 🗸	No 🗌	Not Present	
Custody seals intact on shippping container/cooler?		Yes 🗹	No 🗀	Not Present	
Custody seals intact on sample bottles?		Yes 🗌	No 🗀	Not Present	V
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished and received?		Yes 🗹	No 🗀		
Chain of custody agrees with sample labels?		Yes 🔽	No 🗔		
Samples in proper container/bottle?		Yes 🔽	No 🗌		
Sample containers intact?		Yes 🗸	No 🗌		
Sufficient sample volume for indicated test?		Yes 🗸	No 🗔		
All samples received within holding time?		Yes 🗸	No 🗌		
Container/Temp Blank temperature in compliance?		Yes 🗹	No 🗆	3.7 °C	
Water - VOA vials have zero headspace?		Yes 🗹	No 🗀 🏻 I	No VOA vials	submitted
Water - pH<2 acceptable upon receipt?		Yes 🗌	No 🗌 💮	NA 🗹 LO	DT#
S		Adjusted?		Checked t	ру
Water - ph>9 (S) or ph>10 (CN) acceptable upon receipt?		Yes 🗌	No 🗌 💮 t	NA 🗹 LO	DT#
		Adjusted?		Checked b	Dy
Any No response must be detailed in the comments section	n below.				
Client contacted Date cont	acted:		Pers	on contacted	
Contacted by: Regarding	g:				
Comments:					
			A STATE OF THE STA		
Corrective Action					
Page 1 of 1					

Date: 04-Oct-19

DHL Analytical, Inc.

CLIENT: Larson & Associates

Project: EBDU #37
Lab Order: 1909235

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, EPA and Standard Methods

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives except where noted in the following. For Anions Analysis, for Batches 92959 and 92978, the recovery of Chloride for the Matrix Spike and Matrix Spike Duplicate(s) (various) was below the method control limits. These are flagged accordingly in the QC Summary Report. This anion was within method control limits in the associated LCS(s). No further corrective action was taken.

For Volatile Organics Analysis, the recovery of Benzene for the Matrix Spike Duplicate (1909277-07 MSD) was below the method control limits. This is flagged accordingly in the QC Summary Report. This compound was within method control limits in the associated LCS. No further corrective action was taken.

DHL Analytical, Inc.

CLIENT: Larson & Associates

Project: EBDU #37 **Lab ID:** 1909235-01

Project No: 19-0112-49 **Collection Date:** 09/23/19 03:00 PM

Lab Order: 1909235 Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		SW82	260C			Analyst: BTJ
Benzene	<0.00800	0.000800	0.00200	mg/L	1	10/03/19 04:27 PM
Ethylbenzene	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:27 PM
Toluene	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:27 PM
Total Xylenes	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:27 PM
Surr: 1,2-Dichloroethane-d4	93.6	0	72-119	%REC	1	10/03/19 04:27 PM
Surr: 4-Bromofluorobenzene	101	0	76-119	%REC	1	10/03/19 04:27 PM
Surr: Dibromofluoromethane	102	0	85-115	%REC	1	10/03/19 04:27 PM
Surr: Toluene-d8	97.6	0	81-120	%REC	1	10/03/19 04:27 PM
ANIONS BY IC METHOD - WATER		E30	00			Analyst: SNM
Chloride	37.4	3.00	10.0	mg/L	10	09/27/19 11:38 PM
TOTAL DISSOLVED SOLIDS		M254	40C			Analyst: JS
Total Dissolved Solids (Residue, Filterable)	400	10.0	10.0	mg/L	1	09/26/19 05:30 PM

Qualifiers:

* Value exceeds TCLP Maximum Concentration Level

DF Dilution Factor

J Analyte detected between MDL and RLND Not Detected at the Method Detection Limit

S Spike Recovery outside control limits

C Sample Result or QC discussed in the Case Narrative

Date: 04-Oct-19

Client Sample ID: TMW1

E TPH pattern not Gas or Diesel Range Pattern

MDL Method Detection Limit

RL Reporting Limit

N Parameter not NELAP certified

DHL Analytical, Inc.

CLIENT: Larson & Associates Client Sample ID: TMW2

Project: EBDU #37 **Lab ID:** 1909235-02

Project No: 19-0112-49 **Collection Date:** 09/23/19 05:10 PM

Lab Order: 1909235 Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		SW82	60C			Analyst: BTJ
Benzene	<0.00800	0.000800	0.00200	mg/L	1	10/03/19 04:53 PM
Ethylbenzene	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:53 PM
Toluene	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:53 PM
Total Xylenes	< 0.00200	0.00200	0.00600	mg/L	1	10/03/19 04:53 PM
Surr: 1,2-Dichloroethane-d4	91.7	0	72-119	%REC	1	10/03/19 04:53 PM
Surr: 4-Bromofluorobenzene	97.7	0	76-119	%REC	1	10/03/19 04:53 PM
Surr: Dibromofluoromethane	99.8	0	85-115	%REC	1	10/03/19 04:53 PM
Surr: Toluene-d8	96.3	0	81-120	%REC	1	10/03/19 04:53 PM
ANIONS BY IC METHOD - WATER		E30	00			Analyst: SNM
Chloride	338	30.0	100	mg/L	100	09/26/19 07:18 PM
TOTAL DISSOLVED SOLIDS		M254	10C			Analyst: JS
Total Dissolved Solids (Residue, Filterable)	1220	50.0	50.0	mg/L	1	09/26/19 05:30 PM

Qualifiers:

* Value exceeds TCLP Maximum Concentration Level

DF Dilution Factor

J Analyte detected between MDL and RLND Not Detected at the Method Detection Limit

S Spike Recovery outside control limits

C Sample Result or QC discussed in the Case Narrative

Date: 04-Oct-19

E TPH pattern not Gas or Diesel Range Pattern

MDL Method Detection Limit

RL Reporting Limit

N Parameter not NELAP certified

Date: 04-Oct-19

DHL Analytical, Inc.

CLIENT: Larson & Associates

Work Order: 1909235 **Project:** EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3 191003A

Project: EBDU #3	1					KunII	<i>)</i> . (GCM83_19	1003A
The QC data in batch 93066 app	lies to the fo	ollowing sa	mples: 1909	235-01A, 1909	235-02A				
Sample ID LCS-93066	Batch ID:	93066		TestNo	SW8	8260C		Units:	mg/L
SampType: LCS	Run ID:	GCMS3	_191003A	Analysi	s Date: 10/3	/2019 9:03:	00 AM	Prep Date:	10/3/2019
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	RPD RPDLimit Qua
Benzene	(0.0467	0.00200	0.0464	0	101	81	122	
Ethylbenzene	(0.0486	0.00600	0.0464	0	105	73	127	
Toluene	(0.0466	0.00600	0.0464	0	100	77	122	
Total Xylenes		0.151	0.00600	0.139	0	109	80	121	
Surr: 1,2-Dichloroethane-d4		47.8		50.00		95.7	72	119	
Surr: 4-Bromofluorobenzene		50.8		50.00		102	76	119	
Surr: Dibromofluoromethane		51.1		50.00		102	85	115	
Surr: Toluene-d8		49.0		50.00		98.0	81	120	
Sample ID MB-93066	Batch ID:	93066		TestNo	SW	8260C		Units:	mg/L
SampType: MBLK	Run ID:	GCMS3	_191003A	Analysi	s Date: 10/3	/2019 9:30:	00 AM	Prep Date:	10/3/2019
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	RPD RPDLimit Qua
Benzene	<0	0.000800	0.00200						
Ethylbenzene	<(0.00200	0.00600						
Toluene	<(0.00200	0.00600						
Total Xylenes		0.00200	0.00600						
Surr: 1,2-Dichloroethane-d4		47.4		50.00		94.9	72	119	
Surr: 4-Bromofluorobenzene		50.4		50.00		101	76	119	
Surr: Dibromofluoromethane		50.5		50.00		101	85	115	
Surr: Toluene-d8		48.6		50.00		97.2	81	120	
Sample ID 1909277-07AMS	Batch ID:	93066		TestNo	SW	8260C		Units:	mg/L
SampType: MS	Run ID:	GCMS3	_191003A	Analysi	s Date: 10/3	/2019 2:44:	00 PM	Prep Date:	10/3/2019
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	RPD RPDLimit Qu
Benzene		2.52	0.0400	0.928	1.74	84.5	81	122	
Ethylbenzene		0.957	0.120	0.928	0	103	73	127	
Toluene		1.00	0.120	0.928	0.104	96.6	77	122	
Total Xylenes		2.97	0.120	2.78	0	107	80	121	
Surr: 1,2-Dichloroethane-d4		929		1000		92.9	72	119	
Surr: 4-Bromofluorobenzene		1010		1000		101	76	119	
Surr: Dibromofluoromethane		1000		1000		100	85	115	
Surr: Toluene-d8		968		1000		96.8	81	120	
Sample ID 1909277-07AMSD	Batch ID:	93066		TestNo	SW	8260C		Units:	mg/L
SampType: MSD	Run ID:	GCMS3	_191003A	Analysi	s Date: 10/3	/2019 3:11:	00 PM	Prep Date:	10/3/2019

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

PPD outside accepted control limits

Page 1 of 5

R RPD outside accepted control limitsS Spike Recovery outside control limits

N Parameter not NELAP certified

CLIENT: Larson & Associates

Work Order: 1909235 **Project:** EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191003A

Sample ID 1909277-07AMSD	Batch ID:	93066		TestNo		8260C		Units:	mg/l		
SampType: MSD	Run ID:	GCMS3	_191003A	Anaiys	is Date: 10/3	3/2019 3:11:	:00 PM	Prep Date	10/3	/2019	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD	RPDLimit	Qual
Benzene		2.46	0.0400	0.928	1.74	78.4	81	122	2.25	20	S
Ethylbenzene		0.908	0.120	0.928	0	97.9	73	127	5.19	20	
Toluene		0.972	0.120	0.928	0.104	93.6	77	122	2.81	20	
Total Xylenes		2.80	0.120	2.78	0	101	80	121	5.89	20	
Surr: 1,2-Dichloroethane-d4		932		1000		93.2	72	119	0	0	
Surr: 4-Bromofluorobenzene		1000		1000		100	76	119	0	0	
Surr: Dibromofluoromethane		1000		1000		100	85	115	0	0	
Surr: Toluene-d8		975		1000		97.5	81	120	0	0	

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

Page 2 of 5

CLIENT: Larson & Associates

Work Order: 1909235

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_190926A **Project:** EBDU #37

The QC dat	a in batch 92959 app	lies to the fo	ollowing sampl	es: 1909	235-01B, 19092	35-02B						
Sample ID	MB-92959	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	MBLK	Run ID:	IC4_190926	A	Analysis	Date: 9/26/2	2019 1:16:	18 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RF	PDLimit	Qual
Chloride			<0.300	1.00								
Sample ID	LCS-92959	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	LCS	Run ID:	IC4_190926	A	Analysis	Date: 9/26/ 2	2019 1:32:	18 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RF	PDLimit	Qual
Chloride			9.45	1.00	10.00	0	94.5	90	110			
Sample ID	LCSD-92959	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	LCSD	Run ID:	IC4_190926	iΑ	Analysis	Date: 9/26/ 2	2019 1:48:	18 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RE	PDLimit	Qual
Chloride			9.46	1.00	10.00	0	94.6	90	110	0.153	20	
Sample ID	1909208-09CMS	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	MS	Run ID:	IC4_190926	iΑ	Analysis	Date: 9/26/ 2	2019 9:10:	17 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RE	PDLimit	Qual
Chloride			295	10.0	200.0	116.7	88.9	90	110			S
Sample ID	1909208-09CMSD	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	MSD	Run ID:	IC4_190926	A	Analysis	Date: 9/26/2	2019 9:26:	17 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RE	PDLimit	Qual
Chloride			308	10.0	200.0	116.7	95.5	90	110	4.38	20	
Sample ID	1909208-12CMS	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	MS	Run ID:	IC4_190926	iΑ	Analysis	Date: 9/26/ 2	2019 9:58:	17 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RE	PDLimit	Qual
Chloride			238	10.0	200.0	68.71	84.6	90	110			S
Sample ID	1909208-12CMSD	Batch ID:	92959		TestNo:	E300			Units:	mg/L		
SampType:	MSD	Run ID:	IC4_190926	iΑ	Analysis	Date: 9/26/ 2	2019 10:14	:17 PM	Prep Date:	9/26/20	19	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit	Qual
Chloride			241	10.0	200.0	68.71	86.3	90	110	1.36	20	S

Qualifiers:

В Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

Reporting Limit

Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

RPD outside accepted control limits

R S Spike Recovery outside control limits Parameter not NELAP certified

Page 3 of 5

CLIENT: Larson & Associates

Work Order: 1909235

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_190927A **Project:** EBDU #37

The QC data	a in batch 92978 app	lies to the fo	llowing sampl	es: 1909	235-01B						
Sample ID	MB-92978	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	MBLK	Run ID: IC4_190927A			Analysis Date: 9/27/2019 11:52:41 AM				Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RPE	DLimit Qual
Chloride			<0.300	1.00							
Sample ID	LCS-92978	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	LCS	Run ID:	IC4_190927	Ά	Analysis	Date: 9/27/	2019 12:08	:41 PM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RPE	DLimit Qual
Chloride			9.68	1.00	10.00	0	96.8	90	110		
Sample ID	LCSD-92978	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	LCSD	Run ID:	IC4_190927	Ά	Analysis	Date: 9/27/	2019 12:24	:41 PM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RPE	DLimit Qual
Chloride			9.62	1.00	10.00	0	96.2	90	110	0.580	20
Sample ID	1909253-01BMS	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	MS	Run ID:	IC4_190927	Ά	Analysis	Date: 9/27/	2019 6:50:	07 PM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RPE	DLimit Qual
Chloride			6080	100	2000	4383	84.6	90	110		S
Sample ID	1909253-01BMSD	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	MSD	Run ID:	IC4_190927	Ά	Analysis	Date: 9/27/	2019 7:06:	07 PM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD RPE	DLimit Qual
Chloride			6100	100	2000	4383	86.0	90	110	0.462	20 S
Sample ID	1909255-01EMS	Batch ID:	92978		TestNo:	E300)		Units:	mg/L	
SampType:	MS	Run ID:	IC4_190927	Ά	Analysis	Date: 9/27/	2019 11:54	:07 PM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RPE	Limit Qual
Chloride			598	10.0	200.0	431.8	82.9	90	110		S
Sample ID	1909255-01EMSD	Batch ID:	92978		TestNo:	E300	1		Units:	mg/L	
SampType:	MSD	Run ID:	IC4_190927	Ά	Analysis	Date: 9/28/	2019 12:10	:07 AM	Prep Date:	9/27/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RPE	Limit Qual
Chloride			626	10.0	200.0	431.8	97.1	90	110	4.65	20

Qualifiers:

В Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

Reporting Limit

Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

RPD outside accepted control limits

Page 4 of 5

R S Spike Recovery outside control limits

Parameter not NELAP certified

CLIENT: Larson & Associates

Work Order: 1909235

ANALYTICAL QC SUMMARY REPORT

WC_190926A **RunID: Project:** EBDU #37

The QC data in batch 92957 applies to the following samples: 1909235-01B, 1909235-02B											
Sample ID	MB-92957	Batch ID:	92957		TestNo:	M254	10C		Units:	mg/L	
SampType:	MBLK	Run ID:	WC_190926	6A	Analysis	Date: 9/26/2	2019 5:30:0	00 PM	Prep Date:	9/26/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	: HighLimit %	RPD RPE	Limit Qual
Total Dissolv	ved Solids (Residue,	Filtera	<10.0	10.0							
Sample ID	LCS-92957	Batch ID:	92957		TestNo:	M254	10C		Units:	mg/L	
SampType:	LCS	Run ID:	WC_190926	6A	Analysis	Date: 9/26/2	2019 5:30:0	00 PM	Prep Date:	9/26/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %	RPD RPE	Limit Qual
Total Dissolv	ved Solids (Residue,	Filtera	742	10.0	745.6	0	99.5	90	113		
Sample ID	1909204-01E-DUP	Batch ID:	92957		TestNo:	M254	10C		Units:	mg/L	
SampType:	DUP	Run ID:	WC_190926	6A	Analysis	Date: 9/26/2	2019 5:30:0	00 PM	Prep Date:	9/26/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %	RPD RPI	Limit Qual
Total Dissolv	ved Solids (Residue,	Filtera	2670	50.0	0	2680				0.374	5
Sample ID	1909204-02E-DUP	Batch ID:	92957		TestNo:	M254	10C		Units:	mg/L	
SampType:	DUP	Run ID:	WC_190926	6A	Analysis Date: 9/26/2019 5:30:00 PN			00 PM	Prep Date:	9/26/201	9
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	: HighLimit %	RPD RPD	Limit Qual
Total Dissolv	ved Solids (Residue,	Filtera	3680	50.0	0	3735				1.48	5

Qualifiers: В Analyte detected in the associated Method Blank

> J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

Reporting Limit

Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

Page 5 of 5

RPD outside accepted control limits R

S Spike Recovery outside control limits

Parameter not NELAP certified

From: Mark Larson < Mark@laenvironmental.com > Sent: Monday, December 23, 2019 12:58 PM

To: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Rachel Owen <<u>rowen@laenvironmental.com</u>>; Mark Larson

<<u>Mark@laenvironmental.com</u>>

Subject: [EXT] Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,

This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The
 monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen
 placed above and below the groundwater level observed during drilling. Groundwater is expected to occur
 around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be
 placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche,
 installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean
 topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



From: Mark Larson

Sent: Thursday, August 13, 2020 8:26 AM

To: 'Bradford.Billings@state.nm.us' < Bradford.Billings@state.nm.us>

Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD < Bradford. Billings@state.nm.us>

Sent: Monday, August 10, 2020 10:51 AM **To:** Mark Larson < Mark@laenvironmental.com>

Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings EMNRD/OCD

From: Mark Larson < Mark@laenvironmental.com>

Sent: Monday, August 10, 2020 8:49 AM

To: Billings, Bradford, EMNRD < Bradford. Billings@state.nm.us>

Cc: Baker, Larry < Larry.Baker@apachecorp.com>; Robert Nelson < rnelson@laenvironmental.com>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

I am following up on the email below to see if you have had a moment to review.

Thank you, Mark

From: Mark Larson

Sent: Friday, August 7, 2020 11:45 AM

To: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground

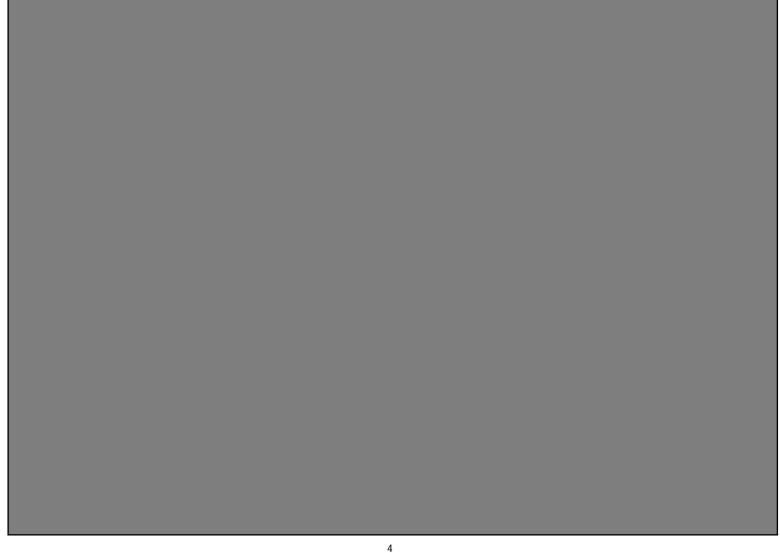
surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G. President/Sr. Hydrogeologist 507 N. Marienfeld St., Suite 202 Midland, Texas 79701 Office - 432-687-0901 Cell - 432-556-8656 Fax - 432-687-0456 mark@laenvironmental.com



"Serving the Permian Basin Since 2000"



APACHE CORPORATION

PRE-HEARING EXHIBITS

PART 2

EXHIBITS:

A-5

Received by OCD: 1/9/2025 3:01:53 PM State of New Mexico Page 6 Oil Conservation Division

Page 185 of 515

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 nust be notified 2 days prior to liner inspection)							
☐ Laboratory analyses of final sampling (Note: appropriate ODC	C District office must be notified 2 days prior to final sampling)						
Description of remediation activities							
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of	nediate contamination that pose a threat to groundwater, surface water, a C-141 report does not relieve the operator of responsibility for tions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in						
Printed Name:Larry Baker							
Signature: <u>Larry Baker</u>	Date: 2/9/2021						
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>						
	y still conducting groundwater monitoring.						
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:						
_							

APACHE EXHIBIT A-5

1RP-5636 Closure Report East Blinebry Drinkard Unit #37 Produced Water Spill

Lea County, New Mexico

Latitude: N 32.47956° Longitude: W -103.12206°

LAI Project No. 19-0112-49

December 31, 2020

Prepared for:

Apache Corporation 303 Veterans Airpark Lane Midland, Texas 79705

Prepared by: Larson & Associates, Inc. 507 North Marienfeld Street, Suite 205 Midland, Texas 79701

Mark J. Larson, P.G.

Certified Professional Geologist #10490

Daniel St. Germain Staff Geologist This Page Intentionally Left Blank

Table of Contents

1.0 Introduction	1
1.1 Background	1
1.2 Physical Setting	1
1.3 Remediation Levels	1
2.0 Remediation	2
3.0 Variance	3
4.0 Monitoring wells	
5.0 Closure Request	4

Tables

Table 1 Confirmation Sample Analytical Data Summary

Figures

Figure 1 Topographic Map Figure 2 Aerial Map of Spill Area

Figure 3 Aerial Map showing Monitoring Well Locations Site Map Showing Monitoring Well Locations Figure 4

Appendices

Appendix A Initial C-141

Appendix B **Laboratory Reports**

Appendix C **Photographs**

Appendix D **OCD Communications**

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this report on behalf of Apache Corporation (Apache) for closure of the excavation associated with a produced water spill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/4, SW/4), Section 13, Township 21 South and Range 37 East, in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°. The surface ownership is private. Figure 1 presents a topographic map.

1.1 Background

The spill occurred at a pipeline junction and flowed west about 675 feet. Approximately 350 feet west of the origin the release flowed south about 450 feet before terminating in a low-lying area. The volume of the release and volume of fluid recovered is unknown. The release is considered major due to the unknown volume of the release. The release covered an area measuring approximately 31,320 square feet or approximately 0.72 acres. Apache submitted form C-141 to OCD on July 26, 2019. Appendix A presents the initial C-141.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,420 feet above mean sea level (msl).
- The topography slopes gently towards the southwest.
- The nearest surface water feature is a low-lying area about 500 feet southwest of the release origin.
- The soils are designated as "Kimbrough gravelly loam, dry, 0 to 3 percent slopes", consisting of about 3 inches of gravelly loam, underlain by about 7 inches of loam and cemented material (caliche) to about 80 inches below ground surface (bgs), in descending order.
- The soil is not considered prime farmland.
- According to the Texas Bureau of Economic Geology Geologic Atlas of Texas Hobbs Sheet, the surface geology is windblown sand (Holocene to middle Pleistocene) consisting of dark brown to grayish brown sand derived from the underlying Blackwater Draw formation.
- The Ogallala Formation (Tertiary) underlies the Blackwater Draw Formation and is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds.
- Groundwater occurs in the Ogallala formation between about 55 feet bgs near the point of release to about 47 feet bgs near the point of termination.
- A fresh water well (windmill) is located about 300 feet south of the point of termination for the release and is not shown on the New Mexico Office of the State Engineer (OSE) website.

1.3 Remediation Levels

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

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

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

2.0 REMEDIATION

Beginning around June 9, 2020, DRG Oilfield Services, Inc. (DRG), Odessa, Texas, under the supervision from Apache, began excavating contaminated soil to 4.1 feet bgs from Spill Area 1 (26,886 square feet) and to 12 feet bgs from Spill Area 2 (4,431 square feet).

On July 13, 2020, LAI personnel collected thirty-eight (38) five-point composite confirmation soil samples for every 200 square feet of excavation sidewalls in Area 1 and Area 2. The samples were delivered under chain of custody and preservation to Xenco in Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene and xylenes (BTEX), total petroleum hydrocarbons (TPH) including gasoline range (C6 to C-12) organics, diesel range (>C12 to C28) organics and oil range (>C28 to C35) organics, and chloride by EPA SW-846 Methods 8021B, 8015M, and Method 300, respectfully. Table 1 presents the confirmation soil sample analytical data summary. Figure 2 presents an aerial map showing the confirmation soil sample locations. Appendix B presents the laboratory reports.

The laboratory reported benzene, BTEX and TPH concentrations below the OCD remediation limits of 10 milligrams per kilogram (mg/Kg), 50 mg/Kg and 100 mg/Kg, respectfully. Chloride was reported above the OCD remediation limit of 600 mg/Kg in the following samples:

C-1	1,150 mg/Kg	C-12	626 mg/Kg
C-2	3,570 mg/Kg	C-17	927 mg/Kg
C-3	1,990 mg/Kg	C-21	1,290 mg/Kg
C-4	3,060 mg/Kg	C-22	704 mg/Kg
C-5	650 mg/Kg	C-23	6,200 mg/Kg
C-6	1,060 mg/Kg	C-24	1,110 mg/Kg
C-7	12,100 mg/Kg	C-26	5,280 mg/Kg
C-8	24,800 mg/Kg	C-27	1,210 mg/Kg
C-9	4,160 mg/Kg	C-28	8,280 mg/Kg
C-10	2,190 mg/Kg	C-32	867 mg/Kg

On July 27 and 29, 2020, DRG excavated additional soil to reduce the chloride concentrations at the above-referenced locations. On August 4, 2020, LAI personnel collected nineteen (19) composite confirmation samples. Soil was not excavated at sample C-1 due to its proximity to a gas pipeline owned by Targa Resources, Inc. Xenco analyzed the samples for chloride by EPA Method 300. Chloride exceeded the OCD remediation limit of 600 mg/kg in samples C-22 (608 mg/kg), C-23 (13,900 mg/kg), and C-28 (630 mg/kg). GRD excavated additional soil from C-22, C-23, and C-28.

On August 4, 2020, LAI personnel resampled location C-1, and collected samples from C-22, C-23, and C-28, following additional soil removal. Xenco analyzed all samples for chloride by EPA Method 300 and sample C-1 for TPH by EPA 846 Method SW8015M. The TPH concentration in sample C-1 was below the analytical method reporting limit (<50.3 mg/Kg). Chloride concentrations were below the OCD remediation limit of 600 mg/Kg.

On August 3, 10, and 11, 2020, LAI personnel collected soil samples from five (5) borings (BH-1 through BH-5) installed in the bottom of the excavation at Area 2 after backfilling with caliche to approximately five (5) feet bgs. Soil samples were collected with a Geoprobe Model 7822DT direct push rig at 10, 12, 14, 16, 18, 20, and 25 feet bgs to confirm the vertical extent of chloride. A soil samples was also collected from 30 feet bgs at BH-1 in Area 2. Xenco analyzed the samples for chloride by EPA Method 300. Xenco reported chloride concentrations below the remediation limit of 600 mg/Kg in all samples. Appendix C presents photographs.

3.0 VARIANCE

On October 29, 2019, Apache submitted a remediation plan that proposed installing a 20-mil thickness polyethylene liner in the bottom of the excavation (12 feet bgs) at Area 2. On August 10 and 11, 2020, LAI personnel collected soil samples from five (5) borings (BH-1 through BH-5) installed in bottom of the excavation at Area 2 after backfilling the excavation to approximately 5 feet bgs with clean caliche. The laboratory reported chloride concentrations above 600 mg/Kg in two (2) samples: BH-3, 10 feet (774 mg/Kg) and BH-3, 12 feet (666 mg/Kg). During g a telephone call on September 11, 2020, OCD approved forgoing the 20-mil thickness liner and backfilling the excavation with clean caliche to three (3) feet bgs and to ground surface with topsoil, however, Apache completed backfilling the excavation with topsoil from five (5) feet to ground surface. Appendix D presents OCD communications.

4.0 MONITORING WELLS

On September 29, 2020, Scarborough Drilling, Inc. (SDI), under LAI supervision, drilled two (2) additional borings (TMW-3 and TWM-4). Monitoring well TMW-3 was installed west of the Area 2 excavation to approximately 68 feet bgs. Monitoring well TMW-4 was drilled east of the Area 2 excavation to approximately 70 feet bgs. Both monitoring well locations were moved with OCD notification due to a buried natural gas pipeline (TMW-3) and thick brush (TMW-4). Monitoring well TMW-3 was moved approximately 125 feet west and south from its proposed location. Monitoring well TMW-4 was moved approximately 25 feet south from its proposed location. Figure 3 presents an aerial drawing showing the monitoring well locations.

The monitoring wells were completed with two (2) inch threaded schedule 40 PVC casing and approximately twenty (20) feet 0.01-inch factory slotted screen. The screens were positioned above and below the groundwater level observed during drilling. On September 30, 2020 groundwater was recorded at 57.62 feet bgs in TMW-3 and 57.39 feet bgs in well TMW-4. The wells were developed using an electric submersible pump to remove to sediment disturbed and fresh water introduced during drilling. All monitor wells were surveyed for geodetic position and elevation, including surface elevation and top of casing (TOC) elevation, West Company, a New Mexico licensed professional surveyor (license number 23263). Figure 4 presents a Site drawing showing the monitoring well locations.

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TWM-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS. Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The OCD will be notified immediately upon receipt laboratory analysis with significant increase of analyte concentrations.

Apache

5.0 CLOSURE REQUEST

Apache requests no further action for this release.

Tables

Released to Imaging: 8/27/2021 10:20:40 AM

Confirmation Soil Sample Analytical Data Summary Lea County, New Mexico Apache Corp., EBDU #37 Table 1

Received by OCD): 1/9/2025 3:(91:5	3 P I	M																	1	Page				
Page 1	Chloride (mg/Kg)	100/2,500 600/10,000		1,150 338	3,570 87	1,990 39	3,060 21.8	650 5.75	1,060 162	12,100 11.5	24,800 19	4,160 200	2,190 126	44.8	626 17.6	44.1	14.1	24.3	229	927 9.8	227	9.09				
	TPH (mg/Kg)	100/2,500		83.3 <50.3	<49.8	<50.0	<49.8	<50.0	<50.0	<49.8	<50.0	<49.9	<49.8	<50.0	<50.0	<50.0	<49.9	<49.9	<50.0	<49.9 	<50.0	<50.0				
	C28 - C35 (mg/Kg)			<49.8 <50.3	<49.8	<50.0	<49.8	<50.0	<50.0	<49.8	<50.0	<49.9	<49.8	<50.0	<50.0	<50.0	<49.9	<49.9	<50.0	<49.9	<50.0	<50.0				
	C12 - C28 (mg/Kg)			83.3 <50.3	<49.8	<50.0	<49.8	<50.0	<50.0	<49.8	<50.0	<49.9	<49.8	<50.0	<50.0	<50.0	<49.9	<49.9	<50.0	<49.9	<50.0	<50.0				
Summary	C6 - C12 (mg/Kg)		10	<49.8 <50.3	<49.8	<50.0	<49.8 	<50.0	<50.0	<49.8	<50.0	<49.9	<49.8	<50.0	<50.0	<50.0	<49.9	<49.9	<50.0	<49.9	<50.0	<50.0				
ytical Data DU #37 Mexico	BTEX (mg/Kg)	20	ite Samples	<0.00201	<0.00202	<0.00202	0.00262	0.00205	0.00262	0.00378	<0.00198	0.00438	0.00336	0.00539	0.00415	0.00252	0.00570	0.00254	0.00552	0.00275	0.00722	0.00557				
Table 1 Soil Sample Analytical D Apache Corp., EBDU #37 Lea County, New Mexico	Benzene (mg/Kg)	10	lation Composite Samples	<0.00201	<0.00202	<0.00202	<0.00199	<0.00200	<0.00200	<0.00200	<0.00198	<0.00199	<0.00201	<0.00200	<0.00198	<0.00198	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00199				
Table 1 Confirmation Soil Sample Analytical Data Summary Apache Corp., EBDU #37 Lea County, New Mexico	Status		Confirmati	Confirmati	Confirmati	Confirmati	Confirmat	Excavated In-Situ	Excavated In-Situ	Excavated In-Situ	Excavated In-Situ	Excavated In-Situ	μũ	μũ	Excavated In-Situ	Excavated In-Situ	Excavated In-Situ	In-Situ	نت			In-Situ		Excavated In-Situ		In-Situ
Confirm	Collection Date			07/13/2020 08/04/2020	07/13/2020 07/27/2020	07/13/2020 07/29/2020	07/13/2020	07/13/2020 07/29/2020	13	/13	07/13/2020	07/13/2020	07/13/2020	07/13/2020	07/13/2020											
	Depth (feet)			7 - 0	0 - 4 0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4		0 - 4	0 - 4	0 - 4				
39:58 AM	Location	į		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall													
/9/2021 11::	Sample ID	ion Standaı		C-1	C-2	د ې	C-4	C-5	9-0	C-7	8-0	6-5	C-10	C-11	C-12	C-13	C-14	C-15	C-16	C-17	C-18	C-19				
d by OCD: 2	Area	Remediat		1	1	4	П	П	1	-	П	1	1	1	H	2	2	2	2	7	7	1				
Area Sample ID Location Area Sample ID Location C-2 Sidewall C-3 Sidewall C-4 Sidewall C-7 Sidewall C-1																										

Confirmation Soil Sample Analytical Data Summary Apache Corp., EBDU #37 Table 1

Received by OC.	D : 1	06	/202	25 .	3:0)1::	53 I	PM	<u>r</u> ∞	0]	4 ,	St	3 <mark>0</mark>	0	9	08	0	2	7	4	1		ο c		3 2	4	9	T		9	3	4	6	4 4
Page	44.3	1,290	237	704	809	10.7	6,200	13,900	15.8	1,11	37.4	724	5,280	1.210	71.6	8,280	630	415	197	264	42.1	198	50.0	CCC	9.23	64.4	14.	28.7		11.6	13.	13.	22.9	34.4 24.7
	<49.9	<50.0	1	<50.0	1	-	<49.9	1	1	<50.0	- 0	<49.9	<50.0	<49.9	+	<49.8	1		<50.0	<50.0	<49.9	<50.0	0 0//	<50.0	<50.0	<50.0	<49.9	<49.9		1	;	1	1	
	<49.9	<50.0	1	<50.0	1	1	6'65>	1	1	<50.0	- 6	<49.9	<50.0	<49.9	+	<49.8	1	-	<50.0	<50.0	6'65>	<50.0	0 01/	0.04>	<50.0	<50.0	<49.9	<49.9		;	1	ł	1	1 1
	<49.9	<50.0	-	<50.0	1	-	<49.9	1	-	<50.0	- 6	<49.9	<50.0	<49.9	-	<49.8	1		<50.0	<50.0	<49.9	<50.0	0 0//	2.54.7 2.50.0	<50.0	<50.0	<49.9	<49.9			1	1	1	
Summary	<49.9	<50.0	-	<50.0	1	1	<49.9	1	1	<50.0	+ 6	<49.9	<50.0	<49.9	-	<49.8	1	-	<50.0	<50.0	<49.9	<50.0	0 01/	2.C+7 0.C57	<50.0	<50.0	<49.9	<49.9		;	1	1	1	
Table 1 Confirmation Soil Sample Analytical Data Summary Apache Corp., EBDU #37 Lea County, New Mexico	0.00968	0.00705	-	0.00493	1	-	0.00339	1	1	0.00732		-	<0.00200	0.00482		<0.00200	1		0.00906	0.00556	<0.00200	0.00325	0.00712	0.00712	0.00876	0.00478	0.00502	0.00857	nples	-	}	1	1	
Table 1 Soil Sample Analytical D Apache Corp., EBDU #37 Lea County, New Mexico	<0.00200	<0.00200		<0.00200	1		<0.00200		\dashv	<0.00200	- 0	\dashv	<0.00200	<0.00200		<0.00200	1	+	<0.00199	<0.00198	\vdash	<0.00199	70.00100	<0.00133	<0.00198	<0.00200	<0.00200	<0.00199	Boring Samples		}	1	1	
nation Soil S Apacl Lea C	In-Situ	Excavated		_	Excavated			Ú)	_	<u> </u>		-	Excavated In-Situ	É		_	Ш		ln-Si			Excavated	\perp	In-Situ	┸	╙		In-Situ	Soil	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ In-Situ
Confirm	07/13/2020	07/13/2020	07/29/2020	07/13/2020	07/29/2020	8/04/2020	07/13/2020	07/29/2020	8/04/2020	07/13/2020	0//29/2020	0//13/2020	07/13/2020 07/29/2020	07/13/2020	07/29/2020	07/13/2020	07/29/2020	8/04/2020		/13,		07/13/2020		13/			07/13/2020	07/13/2020		8/03/2020	8/03/2020	8/03/2020	8/03/2020	8/03/2020 8/03/2020
	0 - 4	0 - 4		0 - 4			0 - 4			0 - 4	,	0 - 4	0 - 4	0 - 4		0 - 4			0 - 4	0 - 4	0 - 4	0 - 4		1 O	0 - 4	0 - 4	0 - 4	0 - 4		10	12	14	16	18 20
9:58 AM	Sidewall	Sidewall		Sidewall			Sidewall			Sidewall	:	Sidewall	Sidewall	Sidewall		Sidewall			Sidewall	Sidewall	Sidewall	Sidewall	11 11 11 11 11	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall		Bottom				
9/2021 11:3	C-20	C-21		C-22			C-23			C-24		C-25	C-26	C-27	ì	C-28			C-29	C-30	C-31	C-32	2,0	C-55	C-35	C-36	C-37	C-38		BH-1				
by OCD: 2/	1	1		1			1			-	•	1	н	1		1			1	1	1	1	-	-	1	1	1	1		7				
Released to Ima	1 C-20 Sidewall 1 C-21 Sidewall 1 C-22 Sidewall 1 C-24 Sidewall 1 C-25 Sidewall 1 C-26 Sidewall 1 C-27 Sidewall 1 C-36 Sidewall 1 C-37 Sidewall 1 C-37 Sidewall 1 C-38 Sidewall 1 C-38 Sidewall 1 C-37 Sidewall 1 C-37 Sidewall 1 C-38 Sidewall 1 C-37 Sidewall 1 C-37 Sidewall 1 C-37 Sidewall 1 C-38 Sidewall 1 C-37 Sidewall 1 C-38 Sidewall																																	

Confirmation Soil Sample Analytical Data Summary Apache Corp., EBDU #37 Table 1

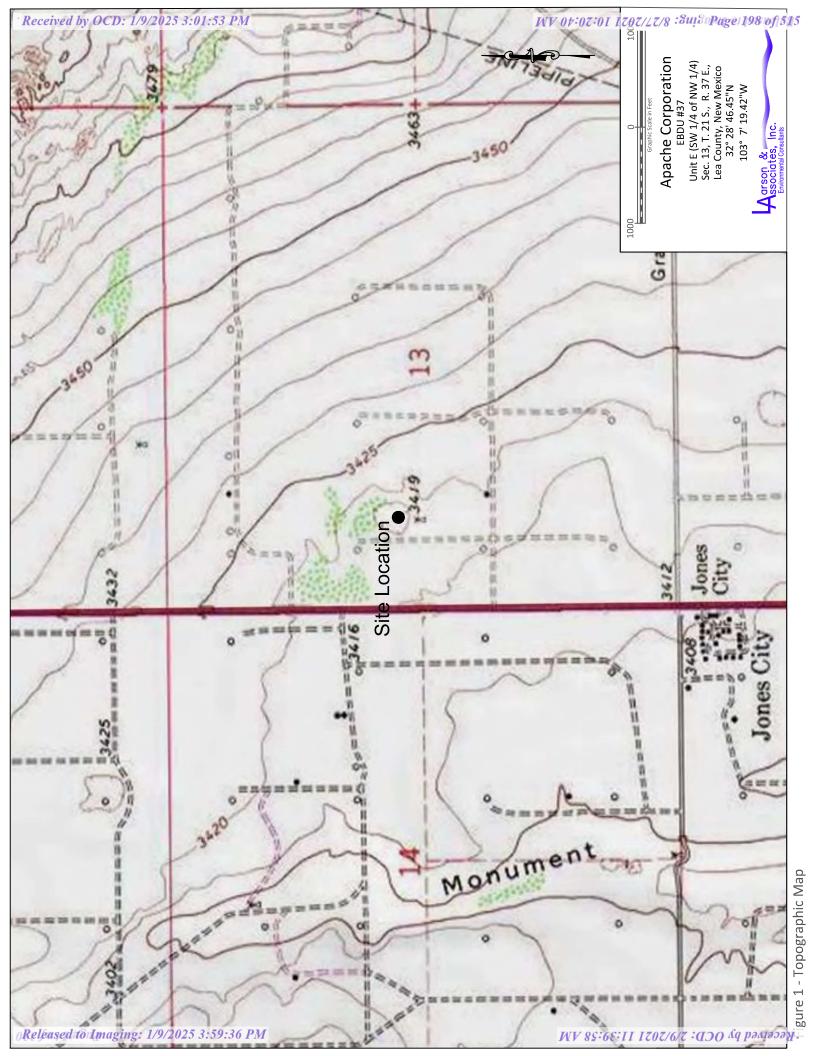
Notes: analysis performed by Xenco Laboratories, Midland, Texas, by SW-846 Method 8021B (BETX), Method 8015 (TPH) and Method 300 (chloride)

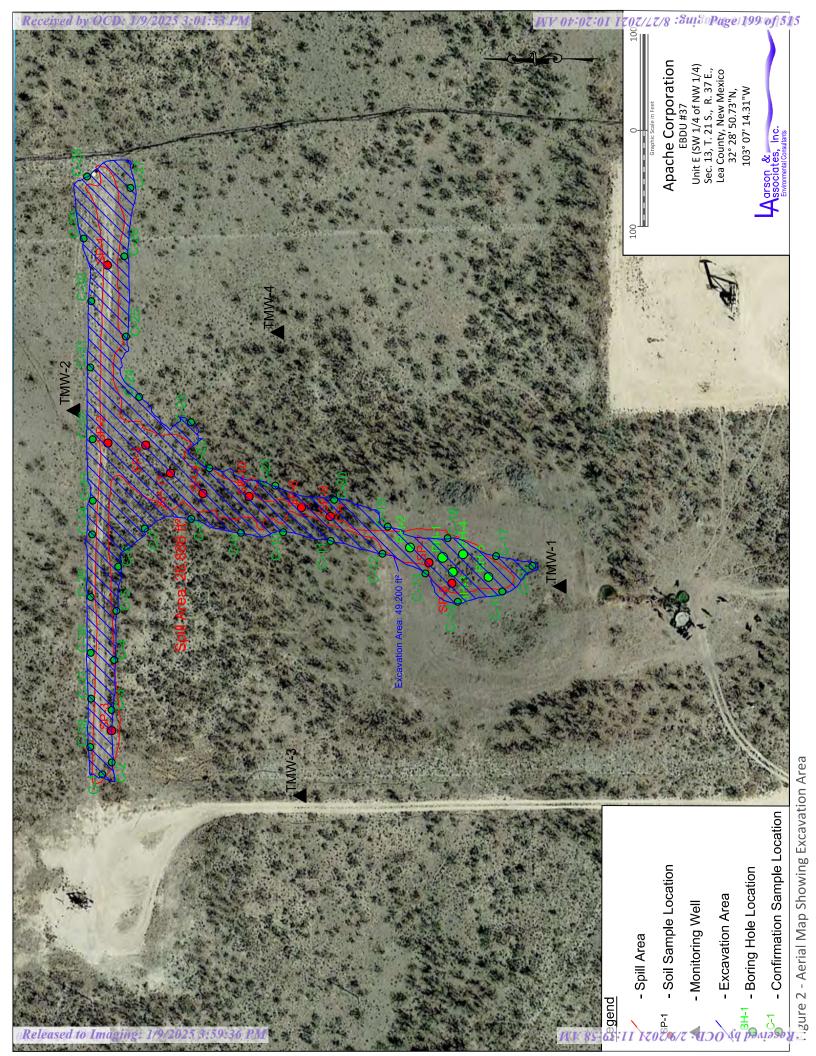
Depth in feet below ground surface (bgs)

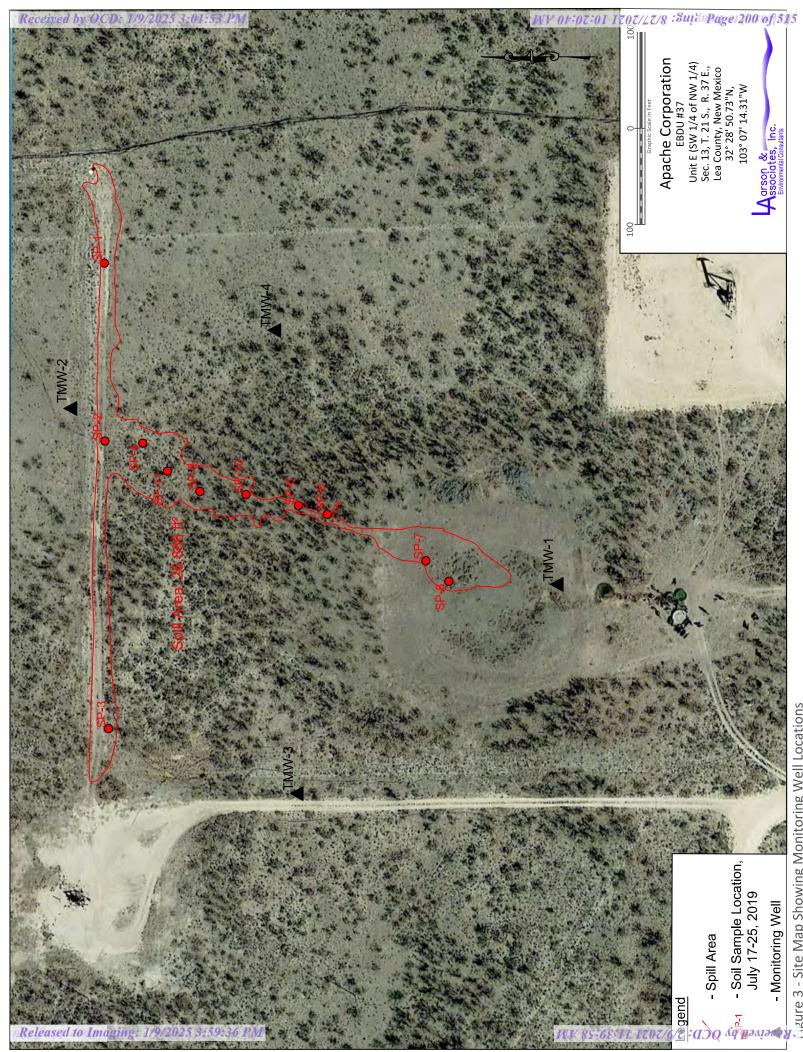
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm) <: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation action limits and excavated

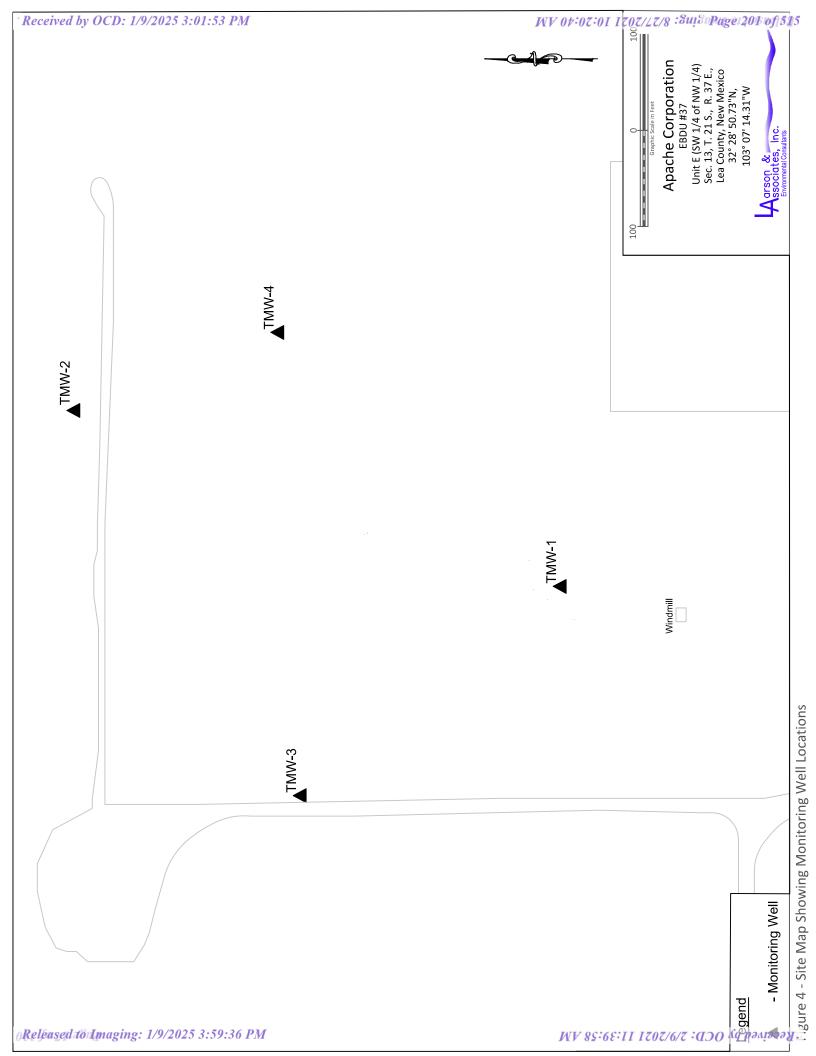
Figures







Igure 3 - Site Map Showing Monitoring Well Locations



Appendix A

Initial C-141

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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # (assigned by OCD)
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM	
88240	

Location of Release Source

Latitude: <u>W 32.4807053</u> Longitude: <u>N -103.123085</u>

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: E	BDU #37 W	/IW		Site Type: Water Injection Well					
Date Release	Discovered	: July 14, 2019		API # 3002506556					
Unit Letter	Section	Township	Range		County				
Е	12	21S	37E	LEA	1				
Surface Owne	r: State	☐ Federal ☐ T	ribal 🛛 Private (Name:	William Stephens)				

Nature and Volume of Release

Materia	al(s) Released (Select all that apply and attach calculations or specific	c justification for the volumes provided below)
Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride 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		
Isolation valve failure du	ue to internal corrosion.	

Received by OCD: 1/9/2025 3:01:53 PMM State of New Mexico Page 2 Oil Conservation Division Page 204 of 515

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	nDHR1922140928

TTT of t	TANKER OF THE COLUMN TO THE CO
Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	
19.13.29.7(A) WIAC:	
☐ Yes ⊠ No	
ICXEC	4''
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? CD by Bruce Baker, Senior Environmental Technician, Apache Corporation
via cinari given to ivivi o	CD by Brace Baker, Schol Environmental Teenmeran, Apache Corporation
	Initial Response
The responsible	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.
	s been secured to protect human health and the environment.
	•
	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain why:
	AC the responsible party may commence remediation immediately after discovery of a release. If remediation
	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred
within a lined containmen	nt area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
	required to report and/or file certain release notifications and perform corrective actions for releases which may endanger ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have
	ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In
addition, OCD acceptance o	f 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: Jeff Broom	n Title: Environmental Technician
Signature:	Date: <u>07/24/2019</u>
Email: Jeffrey.Broom@a	pachecorp.com Telephone: (432) 664-4677
Eman. <u>semey.broom(a/a</u>	pachecorp.com receptione. (452) 004-4077
OCD O	
OCD Only	
Received by: Dylan Ro	Date: 08/09/2019
<u> Dyimiri</u>	

Appendix B

Laboratory Reports

ensolution Environment Testing Kenco		Larse	Larson and Associates, Inc., Midland, TX	on and Associates, Inc., Midland, TX	d, TX		eceived
			Project Nam	Project Name: EBDU #37			
Project Id: 19-0112-49					Date Received in Lab:	in Lab: Mon 07.13.2020 16:43	
Contact: Mark Larson					Repo	Report Date: 07.24.2020 13:02	
Project Location:					Project M	Project Manager: Holly Taylor	
	Lab Id:	667044-001	667044-002	667044-003	667044-004	667044-005	667044-006
A control Dans and	Field Id:	C-1	C-2	C-3	C-4	C-5	C-6
Anaiysis Requesied	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.13.2020 10:45	07.13.2020 10:35	07.13.2020 10:30	07.13.2020 10:27	07.13.2020 10:23	07.13.2020 10:20
BTEX by EPA 8021B	Extracted:	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30
	Analyzed:	07.18.2020 02:55	07.18.2020 03:15	07.18.2020 03:36	07.18.2020 03:56	07.18.2020 04:17	07.18.2020 04:37
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	0.00262 0.00199	0.00205 0.00200	0.00262 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00403 0.00403	<0.00398 0.00398	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	0.00262 0.00199	0.00205 0.00200	0.00262 0.00200
Chloride by EPA 300	Extracted:	07.16.2020 11:30	07.16.2020 11:30	07.16.2020 11:30	07.16.2020 11:30	07.16.2020 11:30	07.16.2020 11:30
	Analyzed:	07.16.2020 16:26	07.16.2020 16:32	07.16.2020 16:50	07.16.2020 16:57	07.16.2020 17:03	07.16.2020 17:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1150 4.96	3570 24.9	1990 25.0	3060 25.2	650 4.96	1060 4.99
TPH by SW8015 Mod	Extracted:	07.16.2020 12:00	07.16.2020 12:00	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.16.2020 14:05	07.16.2020 14:26	07.15.2020 12:50	07.15.2020 13:55	07.15.2020 14:17	07.15.2020 14:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<49.8 49.8	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		83.3 49.8	<49.8 49.8	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0
Total TPH		007	0.01	0 0 0	0 0		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Page 1 of 100

Final 1,000

Project Id: 19-0112-49 Contact: Mark Larson Project Location: Mark Larson Analysis Requested BENZEN BENZEN BENZEN BENZEN BENZEN Chloride by EPA 8021B Total Xylenes Total Xylenes Total BTEX Chloride by EPA 300)					
Project Id: 19-0112-49 Contact: Mark Larson Project Location: Analysis Requested Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300		Larse	son and Associat Project Nam	on and Associates, Inc., Midland, TX Project Name: EBDU #37	ıd, TX		ceived by
Project Location: Analysis Requested BTEX by EPA 8021B Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total Stylenes Total BTEX Chloride by EPA 300					Date Received in Lab:		
Project Location: Analysis Requested BEEX by EPA 8021B Benzene Toluene Ethylbenzene m,p-Xylenes o-Xylene Total Xylenes Total Xylenes Total BTEX Chloride by EPA 300					Repoi	Report Date: 07.24.2020 13:02	3:02
Analysis Requested BETEX by EPA 8021B Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300					Project Manager:	anager: Holly Taylor	
Analysis Requested BETEX by EPA 8021B Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total Sylenes Total DTEX Chloride by EPA 300	Lab Id:	667044-007	667044-008	667044-009	667044-010	667044-011	667044-012
BTEX by EPA 8021B Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total Sylenes Total DTEX Chloride by EPA 300	Field Id: Depth:	C-7	C-8	C - 9	C-10	C-11	C-12
Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
BTEX by EPA 8021B Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300	Sampled:	07.13.2020 10:15	07.13.2020 10:10	07.13.2020 10:05	07.13.2020 10:00	07.13.2020 09:58	07.13.2020 09:55
Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300	Extracted:	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30	07.17.2020 14:30
Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300	Analyzed:	07.18.2020 04:57	07.18.2020 05:18	07.18.2020 05:38	07.18.2020 05:59	07.18.2020 11:01	07.18.2020 11:22
Benzene Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Toluene Ethylbenzene m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene m,p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300		0.00378 0.00200	<0.00198 0.00198	0.00438 0.00199	0.00336 0.00201	0.00539 0.00200	0.00415 0.00198
m.p-Xylenes o-Xylene Total Xylenes Total BTEX Chloride by EPA 300		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
		<0.00400 0.00400	<0.00397 0.00397	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00396 0.00396
		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
		0.00378 0.00200	<0.00198 0.00198	0.00438 0.00199	0.00336 0.00201	0.00539 0.00200	0.00415 0.00198
	Extracted:	07.16.2020 11:30	07.16.2020 11:30	07.16.2020 11:30	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45
	Analyzed:	07.16.2020 17:15	07.16.2020 17:21	07.16.2020 17:27	07.21.2020 01:05	07.21.2020 01:26	07.21.2020 01:32
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		12100 101	24800 250	4160 25.0	2190 24.9	44.8 5.01	626 5.03
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.15.2020 15:00	07.15.2020 15:22	07.15.2020 15:44	07.15.2020 16:06	07.15.2020 16:27	07.15.2020 16:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Total TPH		<49.8 49.8	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1.000

Received by OCD: 2/9/2021 11:39:58 AM		Certifica	ate of Analy	te of Analysis Summary 667044	y 667044		Page 24 of 33
Xenco			Project Nam	Project Name: EBDU #37	V 1 (n)		
Project Id: 19-0112-49					Date Received in Lab:	n Lab: Mon 07.13.2020 16:43	
Contact: Mark Larson					Repor	Report Date: 07.24.2020 13:02	
Project Location:					Project Manager:	nager: Holly Taylor	
	Lab Id:	667044-013	667044-014	667044-015	667044-016	667044-017	667044-018
Analysis Requested	Field Id: Devth:	C-13	C-14	C-15	C-16	C-17	C-18
		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.13.2020 09:51	07.13.2020 09:48	07.13.2020 09:45	07.13.2020 09:48	07.13.2020 09:52	07.13.2020 09:56
BTEX by EPA 8021B	Extracted:	07.17.2020 14:30	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00
	Analyzed:	07.18.2020 11:42	07.22.2020 03:09	07.22.2020 03:29	07.22.2020 03:50	07.22.2020 04:10	07.22.2020 04:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		0.00252 0.00198	0.00570 0.00200	0.00254 0.00200	0.00552 0.00200	0.00275 0.00200	0.00722 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00397 0.00397	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		0.00252 0.00198	0.00570 0.00200	0.00254 0.00200	0.00552 0.00200	0.00275 0.00200	0.00722 0.00200
Chloride by EPA 300	Extracted:	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45
	Analyzed:	07.21.2020 01:37	07.21.2020 01:53	07.21.2020 01:58	07.21.2020 02:03	07.21.2020 02:08	07.21.2020 02:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		44.1 4.99	14.1 4.97	24.3 4.96	229 5.04	927 5.03	227 5.00
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.15.2020 17:33	07.15.2020 17:55	07.15.2020 18:17	07.15.2020 18:38	07.15.2020 19:00	07.15.2020 19:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

elease Seurofins Environment Testing Xenco		Certifica Larso	ate of Analy son and Associat	te of Analysis Summary 667044 on and Associates, Inc., Midland, TX	y 667044 nd, TX		Receive 82 ages
			Project Nam	Project Name: EBDU #37			
Project Id: 19-0112-49					Date Received in Lab:	in Lab: Mon 07.13.2020 16:43	
Contact: Mark Larson					Repor	Report Date: 07.24.2020 13:02	13:02
Project Location:					Project M	Project Manager: Holly Taylor	L
	Lab Id:	667044-019	667044-020	667044-021	667044-022	667044-023	667044-024
Analysis Requested	Field Id:	C-19	C-20	C-21	C-22	C-23	C-24
		SOIL	SOIL	SOIL	SOIL	Nos	NOS
	Sampled:	07.13.2020 10:10	07.13.2020 10:04	07.13.2020 10:08	07.13.2020 10:12	07.13.2020 10:18	07.13.2020 10:22
BTEX by EPA 8021B	Extracted:	07.22.2020 08:00	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00	07.21.2020 16:00
	Analyzed:	07.22.2020 09:17	07.22.2020 04:51	07.22.2020 05:11	07.22.2020 05:32	07.22.2020 05:52	07.22.2020 06:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		0.00557 0.00199	0.00968 0.00200	0.00705 0.00200	0.00493 0.00200	0.00339 0.00200	0.00732 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		0.00557 0.00199	0.00968 0.00200	0.00705 0.00200	0.00493 0.00200	0.00339 0.00200	0.00732 0.00200
Chloride by EPA 300	Extracted:	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45
	Analyzed:	07.21.2020 02:19	07.21.2020 02:34	07.21.2020 02:40	07.21.2020 02:55	07.21.2020 03:00	07.21.2020 03:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		60.6 4.98	44.3 5.03	1290 4.96	704 4.99	6200 49.5	1110 4.97
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.15.2020 19:43	07.15.2020 20:04	07.15.2020 20:26	07.15.2020 20:47	07.15.2020 12:50	07.15.2020 13:55
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	6.64 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	6.64 6.64>	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		0.05	0 07 0 07>	0.05 0.05/	0.05	0 04 0 040 0	0.05

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Page 4 of 100

Seurofing Environment Testing Kenco		Certifica Larse	ate of Analy	te of Analysis Summary 667044 on and Associates, Inc., Midland, TX	y 667044 nd, TX		Receive Receive 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
			Project Nam	Project Name: EBDU #37			
Project Id: 19-0112-49					Date Received in Lab:	in Lab: Mon 07.13.2020 16:43	
Contact: Mark Larson					Repo	Report Date: 07.24.2020 13:02	13:02
Project Location:					Project M	Project Manager: Holly Taylor	<u>.</u>
	Lab Id:	667044-025	667044-026	667044-027	667044-028	667044-029	667044-030
Analysis Reanested	Field Id:	C-25	C-26	C-27	C-28	C-29	C-30
massa traduction	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.13.2020 10:26	07.13.2020 10:32	07.13.2020 10:36	07.13.2020 10:40	07.13.2020 10:44	07.13.2020 10:48
BTEX by EPA 8021B	Extracted:	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30
	Analyzed:	07.22.2020 21:47	07.22.2020 22:08	07.22.2020 22:28	07.22.2020 22:49	07.22.2020 23:09	07.22.2020 23:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Toluene		0.00464 0.00201	<0.00200 0.00200	0.00482 0.00200	<0.00200 0.00200	0.00906 0.00199	0.00556 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	<0.00401 0.00401	<0.00401 0.00401	<0.00398 0.00398	<0.00396 0.00396
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		0.00464 0.00201	<0.00200 0.00200	0.00482 0.00200	<0.00200 0.00200	0.00906 0.00199	0.00556 0.00198
Chloride by EPA 300	Extracted:	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.20.2020 12:45	07.16.2020 15:20	07.16.2020 15:20
	Analyzed:	07.21.2020 03:11	07.21.2020 03:16	07.21.2020 03:21	07.21.2020 03:27	07.16.2020 18:23	07.16.2020 18:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		254 5.02	5280 25.0	1210 4.99	8280 49.7	197 5.03	264 X 4.96
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.15.2020 14:17	07.15.2020 14:38	07.15.2020 15:00	07.15.2020 15:22	07.15.2020 15:44	07.15.2020 16:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0
Total TPH		<49.9 49.9	0.05 0.05>	700 700	801/ 801/	0.05 0.05>	0.05

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Final 1,000

Page 6 of 100

Certificate of Analysis Summary 667044 Larson and Associates, Inc., Midland, TX

Secretary of the second of the		Certifica Larse	ate of Analy son and Associat	te of Analysis Summary 667044 on and Associates, Inc., Midland, TX	y 667044 nd, TX		Received for 17 and 18
			Project Nam	Project Name: EBDU #37			
Project Id: 19-0112-49					Date Received in Lab:	in Lab: Mon 07.13.2020 16:43	
Contact: Mark Larson					Repor	Report Date: 07.24.2020 13:02	
Project Location:					Project M	Project Manager: Holly Taylor	
	Lab Id:	667044-031	667044-032	667044-033	667044-034	667044-035	667044-036
Analysis Reanested	Field Id:	C-31	C-32	C-33	C-34	C-35	C-36
massambas sistinus	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.13.2020 10:52	07.13.2020 10:56	07.13.2020 11:00	07.13.2020 11:05	07.13.2020 11:01	07.13.2020 10:52
BTEX by EPA 8021B	Extracted:	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30	07.22.2020 16:30
	Analyzed:	07.22.2020 23:50	07.23.2020 00:11	07.23.2020 00:31	07.23.2020 00:52	07.23.2020 02:14	07.23.2020 02:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	0.00325 0.00199	0.00712 0.00199	0.00781 0.00199	0.00876 0.00198	0.00478 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398	<0.00397 0.00397	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	0.00325 0.00199	0.00712 0.00199	0.00781 0.00199	0.00876 0.00198	0.00478 0.00200
Chloride by EPA 300	Extracted:	07.16.2020 15:20	07.16.2020 15:20	07.16.2020 15:20	07.16.2020 15:20	07.16.2020 15:20	07.16.2020 15:20
	Analyzed:	07.16.2020 18:29	07.16.2020 18:35	07.16.2020 18:41	07.16.2020 18:59	07.16.2020 19:06	07.16.2020 19:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		42.1 4.99	867 4.97	553 4.99	242 5.00	9.23 5.03	64.4 5.05
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30	07.15.2020 08:30
	Analyzed:	07.15.2020 16:27	07.15.2020 16:49	07.15.2020 17:33	07.15.2020 17:55	07.15.2020 18:17	07.15.2020 18:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.0 50.0
Total TPH		<49.9 49.9	0.05 0.05>	001/00//	0.05 0.05/	0.05 0.05>	0.03

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Page 7 of 100

Certificate of Analysis Summary 667044 Larson and Associates, Inc., Midland, TX

ease Environment Testing Xenco		Lar	Larson and Associates, Inc., Midland, TX	Midland, TX
			Project Name: EBDU #37	
Project Id: 19-0112-49				Date Received in Lab: Mon 07.13.2020 16:43
Contact: Mark Larson				Report Date: 07.24.2020 13:02
Project Location:				Project Manager: Holly Taylor
	Lab Id:	667044-037	667044-038	
Andlesic Dogwood	Field Id:	C-37	C-38	
Analysis Nequesieu	Depth:			
	Matrix:	SOIL	TIOS	
	Sampled:	07.13.2020 10:52	07.13.2020 10:48	
BTEX by EPA 8021B	Extracted:	07.22.2020 16:30	07.22.2020 16:30	
	Analyzed:	07.23.2020 02:55	07.23.2020 03:15	
	Units/RL:	mg/kg RL	mg/kg RL	
Benzene	-	<0.00200 0.00200	<0.00199 0.00199	
Toluene		0.00502 0.00200	0.00857 0.00199	
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	
m,p-Xylenes		<0.00401 0.00401	<0.00398 0.00398	
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	
Total BTEX		0.00502 0.00200	0.00857 0.00199	
Chloride by EPA 300	Extracted:	07.16.2020 15:20	07.16.2020 15:20	
	Analyzed:	07.16.2020 19:30	07.16.2020 19:49	
	Units/RL:	mg/kg RL	mg/kg RL	
Chloride		14.6 X 4.99	28.7 5.04	
TPH by SW8015 Mod	Extracted:	07.15.2020 08:30	07.15.2020 08:30	
	Analyzed:	07.15.2020 19:00	07.15.2020 19:22	
	Units/RL:	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.9 49.9	
Diesel Range Organics (DRO)		<49.9 49.9	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.9 49.9	
TARKET I				-

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 667044

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBDU #37 19-0112-49 07.24.2020

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.24.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 667044

EBDU #37
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 667044. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 667044 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 667044

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
C-1	S	07.13.2020 10:45		667044-001
C-2	S	07.13.2020 10:35		667044-002
C-3	S	07.13.2020 10:30		667044-003
C-4	S	07.13.2020 10:27		667044-004
C-5	S	07.13.2020 10:23		667044-005
C-6	S	07.13.2020 10:20		667044-006
C-7	S	07.13.2020 10:15		667044-007
C-8	S	07.13.2020 10:10		667044-008
C-9	S	07.13.2020 10:05		667044-009
C-10	S	07.13.2020 10:00		667044-010
C-11	S	07.13.2020 09:58		667044-011
C-12	S	07.13.2020 09:55		667044-012
C-13	S	07.13.2020 09:51		667044-013
C-14	S	07.13.2020 09:48		667044-014
C-15	S	07.13.2020 09:45		667044-015
C-16	S	07.13.2020 09:48		667044-016
C-17	S	07.13.2020 09:52		667044-017
C-18	S	07.13.2020 09:56		667044-018
C-19	S	07.13.2020 10:10		667044-019
C-20	S	07.13.2020 10:04		667044-020
C-21	S	07.13.2020 10:08		667044-021
C-22	S	07.13.2020 10:12		667044-022
C-23	S	07.13.2020 10:18		667044-023
C-24	S	07.13.2020 10:22		667044-024
C-25	S	07.13.2020 10:26		667044-025
C-26	S	07.13.2020 10:32		667044-026
C-27	S	07.13.2020 10:36		667044-027
C-28	S	07.13.2020 10:40		667044-028
C-29	S	07.13.2020 10:44		667044-029
C-30	S	07.13.2020 10:48		667044-030
C-31	S	07.13.2020 10:52		667044-031
C-32	S	07.13.2020 10:56		667044-032
C-33	S	07.13.2020 11:00		667044-033
C-34	S	07.13.2020 11:05		667044-034
C-35	S	07.13.2020 11:01		667044-035
C-36	S	07.13.2020 10:52		667044-036
C-37	S	07.13.2020 10:52		667044-037
C-38	S	07.13.2020 10:48		667044-038

Page 216 of 515

CASE NARRATIVE

eurofins
Environment Testing
Xenco

Client Name: Larson and Associates, Inc. Project Name: EBDU #37

 Project ID:
 19-0112-49
 Report Date:
 07.24.2020

 Work Order Number(s):
 667044
 Date Received:
 07.13.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3131896 Chloride by EPA 300

Lab Sample ID 667044-037 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667044-029, -030, -031, -032, -033, -034, -035, -036, -037, -038.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3132080 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 667044-013.

Lab Sample ID 667044-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667044-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013. The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3132276 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 667044-017,667044-018,667044-024,667044-022,667044-023,667044-020.

Batch: LBA-3132394 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 667044-019.

Page 217 of 515

CASE NARRATIVE

eurofins

Environment Testing
Xenco

Client Name: Larson and Associates, Inc. Project Name: EBDU #37

Project ID: 19-0112-49 Report Date: 07.24.2020 Work Order Number(s): 667044 Date Received: 07.13.2020

Batch: LBA-3132400 BTEX by EPA 8021B

Lab Sample ID 667044-031 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene, Toluene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667044-025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Ethylbenzene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 667044-025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-1

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-001

Date Collected: 07.13.2020 10:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep:

07.16.2020 11:30

Basis:

Wet Weight

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.96	mg/kg	07.16.2020 16:26		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

07.16.2020 14:05

Tech: Analyst: DVM ARM

Date Prep:

84-15-1

07.16.2020 12:00

Basis:

70-130

% Moisture:

Wet Weight

Seq Number: 3131955

o-Terphenyl

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.16.2020 14:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.3	49.8		mg/kg	07.16.2020 14:05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.16.2020 14:05	U	1
Total TPH	PHC635	83.3	49.8		mg/kg	07.16.2020 14:05		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-130	07.16.2020 14:05		

106

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-1**

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-001

Date Collected: 07.13.2020 10:45

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

% Moisture:

Tech: Analyst: KTL KTL

Date Prep: 07.17.2020 14:30 Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201	mg/kg	07.18.2020 02:55	UX	1
Toluene	108-88-3	< 0.00201	0.00201	mg/kg	07.18.2020 02:55	UX	1
Ethylbenzene	100-41-4	< 0.00201	0.00201	mg/kg	07.18.2020 02:55	UX	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402	mg/kg	07.18.2020 02:55	UX	1
o-Xylene	95-47-6	< 0.00201	0.00201	mg/kg	07.18.2020 02:55	UX	1
Total Xylenes	1330-20-7	< 0.00201	0.00201	mg/kg	07.18.2020 02:55	U	1
Total BTEX		< 0.00201	0.00201	mg/kg	07.18.2020 02:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.18.2020 02:55	
1,4-Difluorobenzene	540-36-3	115	%	70-130	07.18.2020 02:55	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-2 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-002

Soil Date Collected: 07.13.2020 10:35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE Tech:

% Moisture:

Analyst:

CHE

Date Prep: 07.16.2020 11:30 Basis:

Wet Weight

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3570	24.9	mg/kg	07.16.2020 16:32		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

07.16.2020 12:00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.16.2020 14:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.16.2020 14:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.16.2020 14:26	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.16.2020 14:26	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	97	%	70-130	07.16.2020 14:26
o-Terphenyl	84-15-1	102	%	70-130	07.16.2020 14:26

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-2

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-002

Date Collected: 07.13.2020 10:35

Prep Method: SW5035A

% Moisture:

Tech: Analyst: KTL KTL

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	07.18.2020 03:15	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	07.18.2020 03:15	U	1
Surrogate	Ca	ıs Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	07.18.2020 03:15	
4-Bromofluorobenzene	460-00-4	120	%	70-130	07.18.2020 03:15	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-3 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-003

Date Collected: 07.13.2020 10:30

Prep Method: E300P

CHE Tech:

% Moisture:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.16.2020 11:30 Basis: Wet Weight

Seq Number: 3131895

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1990	25.0	mg/kg	07.16.2020 16:50		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Seq Number: 3131823 Date Prep: 07.15.2020 08:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 12:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 12:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 12:50	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 12:50	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

111-85-3 1-Chlorooctane 90 70-130 07.15.2020 12:50 o-Terphenyl 84-15-1 95 % 70-130 07.15.2020 12:50

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-3

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-003

Date Collected: 07.13.2020 10:30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

% Moisture:

Tech:

KTL

Analyst:

KTL

Date Prep:

07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	07.18.2020 03:36	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	07.18.2020 03:36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	115	%	70-130	07.18.2020 03:36		
4-Bromofluorobenzene		460-00-4	116	%	70-130	07.18.2020 03:36		

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-4

Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-004

Soil Date Collected: 07.13.2020 10:27

Prep Method: E300P

Tech:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.16.2020 11:30

Basis:

% Moisture:

Wet Weight

Seq Number: 3131895

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3060	25.2	mg/kg	07.16.2020 16:57		5

Analytical Method: TPH by SW8015 Mod

DVM

Analyst: **ARM**

Tech:

Date Prep:

 $07.15.2020\ 08:30$

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.15.2020 13:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.15.2020 13:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.15.2020 13:55	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.15.2020 13:55	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	94	%	70-130	07.15.2020 13:55
o-Terphenyl	84-15-1	99	%	70-130	07.15.2020 13:55

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-4

C-4

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-004

Date Collected: 07.13.2020 10:27

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

KTL

Date Prep: 07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.18.2020 03:56	U	1
Toluene	108-88-3	0.00262	0.00199		mg/kg	07.18.2020 03:56		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.18.2020 03:56	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.18.2020 03:56	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.18.2020 03:56	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.18.2020 03:56	U	1
Total BTEX		0.00262	0.00199		mg/kg	07.18.2020 03:56		1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4.50		460.00.4	110	0.7	5 0 130	07.10.2020.02.56		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	07.18.2020 03:56	
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.18.2020 03:56	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-5 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-005

Date Collected: 07.13.2020 10:23

Prep Method: E300P

% Moisture:

Tech:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.16.2020 11:30 Basis:

Wet Weight

Seq Number: 3131895

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	650	4.96	mg/kg	07.16.2020 17:03		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 14:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 14:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 14:17	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 14:17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1-Chlorooctane	111-85-3	92	%	70-130	07.15.2020 14:17	
o-Terphenyl	84-15-1	98	%	70-130	07.15.2020 14:17	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-5

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-005

Date Collected: 07.13.2020 10:23

Prep Method: SW5035A

% Moisture:

Tech: Analyst: KTL KTL

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.18.2020 04:17	U	1
Toluene	108-88-3	0.00205	0.00200		mg/kg	07.18.2020 04:17		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.18.2020 04:17	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	07.18.2020 04:17	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.18.2020 04:17	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.18.2020 04:17	U	1
Total BTEX		0.00205	0.00200		mg/kg	07.18.2020 04:17		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4.00:0		540.26.2	112	0.7	70 130	07 10 2020 04 17		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Fla
1,4-Difluorobenzene	540-36-3	113	%	70-130	07.18.2020 04:17	
4-Bromofluorobenzene	460-00-4	120	%	70-130	07.18.2020 04:17	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-6

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-006

Date Collected: 07.13.2020 10:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

CHE

07.16.2020 11:30

Wet Weight

Analyst:

CHE

Date Prep:

Basis:

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1060	4.99	mg/kg	07.16.2020 17:09		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM **ARM**

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 14:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 14:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 14:38	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 14:38	U	1
Surrogate	1	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	91	%	70-130	07.15.2020 14:38
o-Terphenyl	84-15-1	94	%	70-130	07.15.2020 14:38

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-6

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-006

Date Collected: 07.13.2020 10:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech:

KTL

% Moisture:

Analyst:

KTL

Date Prep:

07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	07.18.2020 04:37	U	1
Toluene	108-88-3	0.00262	0.00200	mg/kg	07.18.2020 04:37		1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	07.18.2020 04:37	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399	mg/kg	07.18.2020 04:37	U	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	07.18.2020 04:37	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	07.18.2020 04:37	U	1
Total BTEX		0.00262	0.00200	mg/kg	07.18.2020 04:37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	07.18.2020 04:37	
1,4-Difluorobenzene	540-36-3	114	%	70-130	07.18.2020 04:37	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-7

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-007

Date Collected: 07.13.2020 10:15

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.16.2020 11:30

Basis:

Wet Weight

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12100	101	mg/kg	07.16.2020 17:15		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.15.2020 15:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.15.2020 15:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.15.2020 15:00	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.15.2020 15:00	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	95	%	70-130	07.15.2020 15:00
o-Terphenyl	84-15-1	101	%	70-130	07.15.2020 15:00

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-7

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-007

Date Collected: 07.13.2020 10:15

Prep Method: SW5035A

KTL

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.17.2020 14:30

% Moisture: Basis:

Wet Weight

Seq Number: 3132080

Tech:

Analyst:

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.18.2020 04:57	U	1
Toluene	108-88-3	0.00378	0.00200		mg/kg	07.18.2020 04:57		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.18.2020 04:57	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.18.2020 04:57	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.18.2020 04:57	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.18.2020 04:57	U	1
Total BTEX		0.00378	0.00200		mg/kg	07.18.2020 04:57		1
Surrogate	Ca	ıs Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	126	%	70-130	07.18.2020 04:57	
1,4-Difluorobenzene	540-36-3	118	%	70-130	07.18.2020 04:57	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-8

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-008

Date Collected: 07.13.2020 10:10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst: CHE

Date Prep: 07.16.2020 11:30

Basis:

Wet Weight

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24800	250	mg/kg	07.16.2020 17:21		50

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Seq Number: 3131823 Date Prep: 07.15.2020 08:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 15:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 15:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 15:22	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 15:22	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	99	%	70-130	07.15.2020 15:22
o-Terphenyl	84-15-1	106	%	70-130	07.15.2020 15:22

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-8

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-008

Date Collected: 07.13.2020 10:10

Prep Method: SW5035A % Moisture:

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
Toluene	108-88-3	< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397	mg/kg	07.18.2020 05:18	U	1
o-Xylene	95-47-6	< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
Total BTEX		< 0.00198	0.00198	mg/kg	07.18.2020 05:18	U	1
a .			V D	T		***	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	07.18.2020 05:18	
4-Bromofluorobenzene	460-00-4	127	%	70-130	07.18.2020 05:18	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-9

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-009

Date Collected: 07.13.2020 10:05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst:

CHE

Date Prep: 07.16.2020 11:30 Basis:

Wet Weight

Seq Number: 3131895

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4160	25.0	mg/kg	07.16.2020 17:27		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 15:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 15:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 15:44	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 15:44	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	90	%	70-130	07.15.2020 15:44
o-Terphenyl	84-15-1	96	%	70-130	07.15.2020 15:44

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-9

)

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-009

Date Collected: 07.13.2020 10:05

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.18.2020 05:38	U	1
Toluene	108-88-3	0.00438	0.00199		mg/kg	07.18.2020 05:38		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.18.2020 05:38	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.18.2020 05:38	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.18.2020 05:38	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.18.2020 05:38	U	1
Total BTEX		0.00438	0.00199		mg/kg	07.18.2020 05:38		1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	07.18.2020 05:38	
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.18.2020 05:38	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-10

Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-010

Date Collected: 07.13.2020 10:00

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2190	24.9	mg/kg	07.21.2020 01:05		5

Matrix:

Analytical Method: TPH by SW8015 Mod

Analytical Method: Chloride by EPA 300

CHE

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM

ARM

Date Prep: $07.15.2020\ 08:30$ Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.15.2020 16:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.15.2020 16:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.15.2020 16:06	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.15.2020 16:06	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	93	%	70-130	07.15.2020 16:06
o-Terphenyl	84-15-1	98	%	70-130	07.15.2020 16:06

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-10

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-010

Date Collected: 07.13.2020 10:00

Matrix:

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

KTL

% Moisture:

Tech:

Analyst:

KTL Date Prep: 07.17.2020 14:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	07.18.2020 05:59	U	1
Toluene	108-88-3	0.00336	0.00201		mg/kg	07.18.2020 05:59		1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	07.18.2020 05:59	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	07.18.2020 05:59	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	07.18.2020 05:59	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	07.18.2020 05:59	U	1
Total BTEX		0.00336	0.00201		mg/kg	07.18.2020 05:59		1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	128	%	70-130	07.18.2020 05:59	
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.18.2020 05:59	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-11

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-011

Date Collected: 07.13.2020 09:58

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.8	5.01	mg/kg	07.21.2020 01:26		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM

ARM Seq Number: 3131823 Date Prep: $07.15.2020\ 08:30$ Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 16:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 16:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 16:27	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 16:27	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1-Chlorooctane	111-85-3	88	%	70-130	07.15.2020 16:27	
o-Terphenyl	84-15-1	92	%	70-130	07.15.2020 16:27	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-11 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-011

Soil Date Collected: 07.13.2020 09:58

Prep Method: SW5035A

Tech:

KTL

Analytical Method: BTEX by EPA 8021B

% Moisture:

Analyst:

KTL

Date Prep: 07.17.2020 14:30 Basis:

Wet Weight

Seq Number: 3132080

1,4-Difluorobenzene

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.18.2020 11:01	U	1
Toluene	108-88-3	0.00539	0.00200		mg/kg	07.18.2020 11:01		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.18.2020 11:01	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	07.18.2020 11:01	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.18.2020 11:01	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.18.2020 11:01	U	1
Total BTEX		0.00539	0.00200		mg/kg	07.18.2020 11:01		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	113	%	70-130	07.18.2020 11:01		

111

%

70-130

07.18.2020 11:01

540-36-3



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-12

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-012

Soil Date Collected: 07.13.2020 09:55

Prep Method: E300P

% Moisture:

Tech: Analyst:

Tech:

CHE

CHE

Date Prep:

Date Prep:

07.20.2020 12:45

07.15.2020 08:30

Basis:

Wet Weight

Seq Number: 3132156

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 626 5.03 mg/kg 07.21.2020 01:32 1

Analytical Method: TPH by SW8015 Mod

DVM

ARM Analyst: Seq Number: 3131823 Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

1-Chlorooctane 111-85-3 92 70-130 07.15.2020 16:49 o-Terphenyl 84-15-1 97 % 70-130 07.15.2020 16:49

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-12 Matrix:

Date Received:07.13.2020 16:43

Basis:

Lab Sample Id: 667044-012

Analytical Method: BTEX by EPA 8021B

KTL

Soil Date Collected: 07.13.2020 09:55

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

Date Prep:

07.17.2020 14:30

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198	mg/kg	07.18.2020 11:22	U	1
Toluene	108-88-3	0.00415	0.00198	mg/kg	07.18.2020 11:22		1
Ethylbenzene	100-41-4	< 0.00198	0.00198	mg/kg	07.18.2020 11:22	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396	mg/kg	07.18.2020 11:22	U	1
o-Xylene	95-47-6	< 0.00198	0.00198	mg/kg	07.18.2020 11:22	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198	mg/kg	07.18.2020 11:22	U	1
Total BTEX		0.00415	0.00198	mg/kg	07.18.2020 11:22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	127	%	70-130	07.18.2020 11:22	
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.18.2020 11:22	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-13

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-013

Date Collected: 07.13.2020 09:51

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst:

CHE

Date Prep: 07.20.2020 12:45 Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.1	4.99	mg/kg	07.21.2020.01:37		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: **ARM** Date Prep: $07.15.2020\ 08:30$ Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 17:33	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 17:33	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	99	%	70-130	07.15.2020 17:33
o-Terphenyl	84-15-1	106	%	70-130	07.15.2020 17:33

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-13

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-013

Date Collected: 07.13.2020 09:51

Prep Method: SW5035A

Trep Memod. 3

% Moisture:

Tech: Analyst: KTL KTL

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.17.2020 14:30

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	07.18.2020 11:42	U	1
Toluene	108-88-3	0.00252	0.00198		mg/kg	07.18.2020 11:42		1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	07.18.2020 11:42	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	07.18.2020 11:42	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	07.18.2020 11:42	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	07.18.2020 11:42	U	1
Total BTEX		0.00252	0.00198		mg/kg	07.18.2020 11:42		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.470.00 1	_			0.7	50.130	07.10.0000.11.10		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	70-130	07.18.2020 11:42	
4-Bromofluorobenzene	460-00-4	137	%	70-130	07.18.2020 11:42	**

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-14 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-014

Soil Date Collected: 07.13.2020 09:48

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.1	4.97	mg/kg	07.21.2020 01:53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 17:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 17:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 17:55	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 17:55	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	95	%	70-130	07.15.2020 17:55
o-Terphenyl	84-15-1	101	%	70-130	07.15.2020 17:55

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-14

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-014

Date Collected: 07.13.2020 09:48

Prep Method: SW5035A

% Moisture:

Tech: Analyst: AMF **AMF**

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.21.2020 16:00

Basis:

Wet Weight

Parameter	Cas Numbe	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 03:09	U	1
Toluene	108-88-3	0.00570	0.00200		mg/kg	07.22.2020 03:09		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 03:09	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 03:09	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 03:09	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 03:09	U	1
Total BTEX		0.00570	0.00200		mg/kg	07.22.2020 03:09		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	100	%	70-130	07.22.2020 03:09		
4-Bromofluorobenzene		460-00-4	117	%	70-130	07.22.2020 03:09		

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-15

Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-015

Soil Date Collected: 07.13.2020 09:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst:

CHE

Date Prep: 07.20.2020 12:45 Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.3	4.96	mg/kg	07.21.2020.01:58		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Date Prep: $07.15.2020\ 08:30$ Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 18:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 18:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 18:17	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 18:17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	93	%	70-130	07.15.2020 18:17
o-Terphenyl	84-15-1	99	%	70-130	07.15.2020 18:17

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-15 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-015

Date Collected: 07.13.2020 09:45

Prep Method: SW5035A

% Moisture:

Tech: Analyst: AMF **AMF**

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.21.2020 16:00

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 03:29	U	1
Toluene	108-88-3	0.00254	0.00200		mg/kg	07.22.2020 03:29		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 03:29	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 03:29	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 03:29	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 03:29	U	1
Total BTEX		0.00254	0.00200		mg/kg	07.22.2020 03:29		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4 Difluorobenzene		540-36-3	101	0/2	70 130	07 22 2020 03:20		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.22.2020 03:29	
4-Bromofluorobenzene	460-00-4	121	%	70-130	07.22.2020 03:29	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-16 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-016

Date Collected: 07.13.2020 09:48

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: CHE CHE

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 229 5.04 mg/kg 07.21.2020 02:03 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	98	%	70-130	07.15.2020 18:38
o-Terphenyl	84-15-1	104	%	70-130	07.15.2020 18:38

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-16

Matrix:

540-36-3

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-016

Date Collected: 07.13.2020 09:48

Prep Method: SW5035A

07.22.2020 03:50

% Moisture:

Tech: Analyst: AMF AMF

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.21.2020 16:00

%

70-130

Basis:

Wet Weight

Seq Number: 3132276

1,4-Difluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 03:50	U	1
Toluene	108-88-3	0.00552	0.00200		mg/kg	07.22.2020 03:50		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 03:50	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 03:50	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 03:50	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 03:50	U	1
Total BTEX		0.00552	0.00200		mg/kg	07.22.2020 03:50		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	130	%	70-130	07.22.2020 03:50		

105



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-17

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-017

Date Collected: 07.13.2020 09:52

% Moisture:

Prep Method: E300P

Tech:

CHE

CHE

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Analyst:

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	927	5.03	mg/kg	07.21.2020 02:08		1

Analytical Method: TPH by SW8015 Mod

DVM

Analyst: ARM

Tech:

Date Prep: Seq Number: 3131823

 $07.15.2020\ 08:30$

% Moisture:

Prep Method: SW8015P

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Surrogate	Ca	ıs Number 0	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	94	%	70-130	07.15.2020 19:00
o-Terphenyl	84-15-1	100	%	70-130	07.15.2020 19:00

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-17

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-017

Date Collected: 07.13.2020 09:52

Prep Method: SW5035A

% Moisture:

Tech: AMF

Analyst:

AMF AMF

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.21.2020 16:00

Basis:

Wet Weight

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 04:10	U	1
Toluene	108-88-3	0.00275	0.00200		mg/kg	07.22.2020 04:10		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 04:10	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 04:10	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 04:10	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 04:10	U	1
Total BTEX		0.00275	0.00200		mg/kg	07.22.2020 04:10		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	07.22.2020 04:10		
4-Bromofluorobenzene		460-00-4	136	%	70-130	07.22.2020 04:10	**	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-18

Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-018

Date Collected: 07.13.2020 09:56

07.20.2020 12:45

07.15.2020 08:30

%

70-130

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE Tech:

Analyst:

Tech:

CHE

Date Prep:

% Moisture: Basis:

Wet Weight

Seq Number: 3132156

Parameter Cas Number Result RLUnits Dil **Analysis Date** Flag Chloride 16887-00-6 227 5.00 mg/kg 07.21.2020 02:13 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DVM

% Moisture:

ARM Analyst:

Basis: Wet Weight

07.15.2020 19:22

Seq Number: 3131823

o-Terphenyl

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 19:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 19:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 19:22	U	1
Total TPH	PHC635	<50.0	50.0		mg/kg	07.15.2020 19:22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	90	%	70-130	07.15.2020 19:22		

93

Date Prep:

84-15-1

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-18

18

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-018

Date Collected: 07.13.2020 09:56

Prep Method: SW5035A

% Moisture:

Tech: AMF

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis:

Wet Weight

Parameter	Cas Numbe	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 04:30	U	1
Toluene	108-88-3	0.00722	0.00200		mg/kg	07.22.2020 04:30		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 04:30	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 04:30	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 04:30	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 04:30	U	1
Total BTEX		0.00722	0.00200		mg/kg	07.22.2020 04:30		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	07.22.2020 04:30		
4-Bromofluorobenzene		460-00-4	132	%	70-130	07.22.2020 04:30	**	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-19 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-019

Date Collected: 07.13.2020 10:10

Prep Method: E300P

% Moisture:

Tech:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Analyst:

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.6	4.98	mg/kg	07.21.2020 02:19		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DVM **ARM**

Date Prep:

 $07.15.2020\ 08:30$

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 19:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 19:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 19:43	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 19:43	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1-Chlorooctane	111-85-3	89	%	70-130	07.15.2020 19:43	
o-Terphenyl	84-15-1	95	%	70-130	07.15.2020 19:43	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-19

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-019

Date Collected: 07.13.2020 10:10

Prep Method: SW5035A

07.22.2020 09:17

Prep M

70-130

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.22.2020 08:00

Basis:

% Moisture:

Wet Weight

Seq Number: 3132394

1,4-Difluorobenzene

Parameter	Cas Numbe	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.22.2020 09:17	U	1
Toluene	108-88-3	0.00557	0.00199		mg/kg	07.22.2020 09:17		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.22.2020 09:17	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.22.2020 09:17	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.22.2020 09:17	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.22.2020 09:17	U	1
Total BTEX		0.00557	0.00199		mg/kg	07.22.2020 09:17		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	131	%	70-130	07.22.2020 09:17	**	

105

%

540-36-3

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-20 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-020

Date Collected: 07.13.2020 10:04

Prep Method: E300P

Tech:

CHE

Analytical Method: Chloride by EPA 300

Basis:

% Moisture:

Wet Weight

Analyst:

CHE

Date Prep: 07.20.2020 12:45

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.3	5.03	mg/kg	07.21.2020 02:34		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:

DVM

Analyst: **ARM** Date Prep: $07.15.2020\ 08:30$ Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 20:04	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 20:04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	91	%	70-130	07.15.2020 20:04
o-Terphenyl	84-15-1	95	%	70-130	07.15.2020 20:04

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-20 Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-020

Date Collected: 07.13.2020 10:04

Prep Method: SW5035A

% Moisture:

AMF Tech:

Analyst:

AMF

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.21.2020 16:00 Basis:

Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 04:51	U	1
Toluene	108-88-3	0.00968	0.00200		mg/kg	07.22.2020 04:51		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 04:51	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 04:51	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 04:51	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 04:51	U	1
Total BTEX		0.00968	0.00200		mg/kg	07.22.2020 04:51		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	07.22.2020 04:51		
4 D C 1		460.00.4	126	0.7	70 120	07.22.2020.04.51	**	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-21 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-021

Soil Date Collected: 07.13.2020 10:08

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE Tech:

% Moisture:

CHE Analyst:

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1290	4.96	mg/kg	07.21.2020 02:40		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

% Moisture:

Analyst: ARM Seq Number: 3131823 Date Prep: 07.15.2020 08:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 20:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 20:26	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 20:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

111-85-3 1-Chlorooctane 93 70-130 07.15.2020 20:26 o-Terphenyl 84-15-1 97 % 70-130 07.15.2020 20:26

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-21

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-021

Date Collected: 07.13.2020 10:08

Analytical Method: BTEX by EPA 8021B

AMF

Prep Method: SW5035A

% Moisture:

Tech: AMF

Analyst:

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 05:11	U	1
Toluene	108-88-3	0.00705	0.00200		mg/kg	07.22.2020 05:11		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 05:11	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 05:11	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 05:11	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 05:11	U	1
Total BTEX		0.00705	0.00200		mg/kg	07.22.2020 05:11		1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	129	%	70-130	07.22.2020 05:11	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.22.2020 05:11	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-22

Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-022

Analytical Method: Chloride by EPA 300

Date Collected: 07.13.2020 10:12

Prep Method: E300P

% Moisture:

CHE Tech:

CHE Analyst:

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter Cas Number Result RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 704 4.99 mg/kg 07.21.2020 02:55 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DVM ARM

Date Prep:

07.15.2020 08:30

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 20:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 20:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 20:47	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 20:47	U	1
Surrogate	C	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	91	%	70-130	07.15.2020 20:47
o-Terphenyl	84-15-1	95	%	70-130	07.15.2020 20:47

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-22

Analytical Method: BTEX by EPA 8021B

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-022

Date Collected: 07.13.2020 10:12

Prep Method: SW5035A

07.22.2020 05:32

% Moisture:

Tech: Analyst: AMF **AMF**

Date Prep:

07.21.2020 16:00

%

70-130

Basis:

Wet Weight

Seq Number: 3132276

1,4-Difluorobenzene

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 05:32	U	1
Toluene	108-88-3	0.00493	0.00200		mg/kg	07.22.2020 05:32		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 05:32	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 05:32	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 05:32	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 05:32	U	1
Total BTEX		0.00493	0.00200		mg/kg	07.22.2020 05:32		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	137	%	70-130	07.22.2020 05:32	**	

103

540-36-3



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-23 Matrix:

Result

6200

Date Prep:

Cas Number

16887-00-6

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-023

Date Collected: 07.13.2020 10:18

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analysis Date

07.21.2020 03:00

% Moisture:

Tech:

CHE

Basis:

Wet Weight

Analyst: Seq Number: 3132156

Parameter

Chloride

CHE

Date Prep: 07.20.2020 12:45

RL

49.5

Flag

Dil

10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DVM

07.15.2020 08:30

Units

mg/kg

% Moisture:

Basis:

Wet Weight

Analyst: ARM Seq Number: 3131827

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 12:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 12:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 12:50	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 12:50	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Fl
1-Chlorooctane	111-85-3	88	%	70-130	07.15.2020 12:50	
o-Terphenyl	84-15-1	85	%	70-130	07.15.2020 12:50	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-23

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-023

Date Collected: 07.13.2020 10:18

Prep Method: SW5035A

07.22.2020 05:52

% Moisture:

Tech: Analyst: AMF AMF

Analytical Method: BTEX by EPA 8021B

Date Prep:

540-36-3

07.21.2020 16:00

%

70-130

Basis:

Wet Weight

Seq Number: 3132276

1,4-Difluorobenzene

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 05:52	U	1
Toluene	108-88-3	0.00339	0.00200		mg/kg	07.22.2020 05:52		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 05:52	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 05:52	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 05:52	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 05:52	U	1
Total BTEX		0.00339	0.00200		mg/kg	07.22.2020 05:52		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	134	%	70-130	07.22.2020 05:52	**	

103

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-24 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-024

Date Collected: 07.13.2020 10:22

Prep Method: E300P

Tech:

CHE

Analytical Method: Chloride by EPA 300

% Moisture:

CHE Analyst:

Date Prep:

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1110	4.97	mg/kg	07.21.2020.03:06		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep: 07.15.2020 08:30 Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 13:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 13:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 13:55	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 13:55	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-24 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-024

Soil Date Collected: 07.13.2020 10:22

07.21.2020 16:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

AMF

Analyst:

Date Prep:

Basis:

Wet Weight

Parameter	Cas Numbe	er Result	\mathbf{R} L		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 06:13	U	1
Toluene	108-88-3	0.00732	0.00200		mg/kg	07.22.2020 06:13		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 06:13	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.22.2020 06:13	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 06:13	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 06:13	U	1
Total BTEX		0.00732	0.00200		mg/kg	07.22.2020 06:13		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	133	%	70-130	07.22.2020 06:13	**	
1,4-Difluorobenzene		540-36-3	103	%	70-130	07.22.2020 06:13		

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-25 Matrix:

Result

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-025

Date Collected: 07.13.2020 10:26

Cas Number

16887-00-6

Prep Method: E300P

Tech:

CHE

Analytical Method: Chloride by EPA 300

% Moisture:

Units

Wet Weight

Analyst: Seq Number: 3132156

Parameter

Chloride

Tech: Analyst: CHE

Date Prep:

254

07.20.2020 12:45

Basis:

RL5.02

mg/kg 07.21.2020 03:11

Analysis Date

Prep Method: SW8015P

Dil Flag 1

Analytical Method: TPH by SW8015 Mod

DVM

ARM

Date Prep:

07.15.2020 08:30

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.15.2020 14:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	07.15.2020 14:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.15.2020 14:17	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.15.2020 14:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	07.15.2020 14:17	
o-Terphenyl	84-15-1	80	%	70-130	07.15.2020 14:17	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-25 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-025

Date Collected: 07.13.2020 10:26

Analytical Method: BTEX by EPA 8021B

KTL

Prep Method: SW5035A

KTL Tech:

% Moisture:

Analyst:

Date Prep: 07.22.2020 16:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	07.22.2020 21:47	U	1
Toluene	108-88-3	0.00464	0.00201		mg/kg	07.22.2020 21:47		1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	07.22.2020 21:47	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	07.22.2020 21:47	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	07.22.2020 21:47	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	07.22.2020 21:47	U	1
Total BTEX		0.00464	0.00201		mg/kg	07.22.2020 21:47		1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flaσ	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	07.22.2020 21:47	
4-Bromofluorobenzene	460-00-4	98	%	70-130	07.22.2020 21:47	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-26 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-026

Soil Date Collected: 07.13.2020 10:32

Prep Method: E300P

CHE

Analytical Method: Chloride by EPA 300

% Moisture:

Tech:

Analyst:

Tech:

Total TPH

CHE

Date Prep: 07.20.2020 12:45 Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	5280	25.0	mg/kg	07.21.2020 03:16		5	

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DVM

% Moisture:

mg/kg

ARM Analyst: Seq Number: 3131827 Date Prep: 07.15.2020 08:30

50.0

Basis:

07.15.2020 14:38

Wet Weight

U

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Gasoline Range Hydrocarbons (GRO) PHC610 07.15.2020 14:38 U < 50.0 50.0 mg/kg 1 Diesel Range Organics (DRO) C10C28DRO 50.0 07.15.2020 14:38 U < 50.0 mg/kg 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 < 50.0 50.0 mg/kg 07.15.2020 14:38 U

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-130	07.15.2020 14:38	
o-Terphenyl	84-15-1	91	%	70-130	07.15.2020 14:38	

< 50.0

PHC635

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-26

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-026

Analytical Method: BTEX by EPA 8021B

Date Collected: 07.13.2020 10:32

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst: KTL

Date Prep: 0

Matrix:

07.22.2020 16:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	07.22.2020 22:08	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	07.22.2020 22:08	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.22.2020 22:08	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.22.2020 22:08	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-27 Matrix:

Soil

07.20.2020 12:45

 $07.15.2020\ 08:30$

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-027

Date Collected: 07.13.2020 10:36

Analytical Method: Chloride by EPA 300

CHE

Tech: CHE Analyst:

Date Prep:

% Moisture:

Prep Method: E300P

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1210	4.99	mg/kg	07.21.2020 03:21		1

Analytical Method: TPH by SW8015 Mod

DVM

Analyst: ARM Seq Number: 3131827

Tech:

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 15:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 15:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 15:00	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 15:00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	87	%	70-130	07.15.2020 15:00
o-Terphenyl	84-15-1	90	%	70-130	07.15.2020 15:00

Date Prep:

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-27

Analytical Method: BTEX by EPA 8021B

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-027

Date Collected: 07.13.2020 10:36

Prep Method: SW5035A

 $07.22.2020\ 22:28$

KTL

KTL

Date Prep:

07.22.2020 16:30

%

70-130

Basis:

% Moisture:

Wet Weight

Seq Number: 3132400

1,4-Difluorobenzene

Tech:

Analyst:

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 22:28	U	1
Toluene	108-88-3	0.00482	0.00200		mg/kg	07.22.2020 22:28		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 22:28	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	07.22.2020 22:28	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 22:28	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 22:28	U	1
Total BTEX		0.00482	0.00200		mg/kg	07.22.2020 22:28		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	107	%	70-130	07.22.2020 22:28		

111

540-36-3

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-28 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-028

Soil Date Collected: 07.13.2020 10:40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE Tech:

Date Prep:

% Moisture:

Analyst:

CHE

07.20.2020 12:45

Basis:

Wet Weight

Seq Number: 3132156

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8280	49.7	mg/kg	07.21.2020.03:27		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DVM

% Moisture:

Analyst: ARM

Seq Number: 3131827

Tech:

Date Prep: 07.15.2020 08:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.15.2020 15:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.15.2020 15:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.15.2020 15:22	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.15.2020 15:22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

111-85-3 1-Chlorooctane 91 70-130 07.15.2020 15:22 o-Terphenyl 84-15-1 % 70-130 07.15.2020 15:22

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-28 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-028

Analytical Method: BTEX by EPA 8021B

Soil Date Collected: 07.13.2020 10:40

07.22.2020 16:30

Prep Method: SW5035A

KTL Tech:

Analyst:

KTL Date Prep: % Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	07.22.2020 22:49	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	07.22.2020 22:49	U	1
Surrogate	Ca	s Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.22.2020 22:49	
4-Bromofluorobenzene	460-00-4	108	%	70-130	07.22.2020 22:49	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-29 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-029

Date Collected: 07.13.2020 10:44

Prep Method: E300P % Moisture:

Tech: Analyst: CHE

Analytical Method: Chloride by EPA 300

CHE

Date Prep:

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter Cas Number Result RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 197 5.03 mg/kg 07.16.2020 18:23 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DVM

ARM

Date Prep: 07.15.2020 08:30 Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 15:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 15:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 15:44	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 15:44	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	88	%	70-130	07.15.2020 15:44
o-Terphenyl	84-15-1	85	%	70-130	07.15.2020 15:44

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-29 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-029

Date Collected: 07.13.2020 10:44

Prep Method: SW5035A

% Moisture:

KTL Tech:

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.22.2020 16:30 Basis:

Wet Weight

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.22.2020 23:09	U	1
Toluene	108-88-3	0.00906	0.00199		mg/kg	07.22.2020 23:09		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.22.2020 23:09	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.22.2020 23:09	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.22.2020 23:09	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.22.2020 23:09	U	1
Total BTEX		0.00906	0.00199		mg/kg	07.22.2020 23:09		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4 D		160.00.4	112	0.7	70 120	07 22 2020 22 00		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Fla
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.22.2020 23:09	
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.22.2020 23:09	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-30 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-030

Soil Date Collected: 07.13.2020 10:48

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Analyst:

CHE

% Moisture:

CHE

Date Prep:

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	264	4.96	mg/kg	07.16.2020 18:04	X	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

07.15.2020 16:06

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

07.15.2020 08:30

%

70-130

Basis:

Wet Weight

Seq Number: 3131827

o-Terphenyl

Parameter	Cas Numbe	r Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 16:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 16:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 16:06	U	1
Total TPH	PHC635	<50.0	50.0		mg/kg	07.15.2020 16:06	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	82	%	70-130	07.15.2020 16:06		

84

84-15-1

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-30 Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-030

Date Collected: 07.13.2020 10:48

Analytical Method: BTEX by EPA 8021B

KTL

Prep Method: SW5035A

KTL Tech:

% Moisture:

Analyst:

Date Prep: 07.22.2020 16:30 Basis: Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	07.22.2020 23:30	U	1
Toluene	108-88-3	0.00556	0.00198		mg/kg	07.22.2020 23:30		1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	07.22.2020 23:30	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	07.22.2020 23:30	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	07.22.2020 23:30	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	07.22.2020 23:30	U	1
Total BTEX		0.00556	0.00198		mg/kg	07.22.2020 23:30		1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Fla
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.22.2020 23:30	
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.22.2020 23:30	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-31 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-031

Soil Date Collected: 07.13.2020 10:52

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE Tech:

% Moisture:

CHE Analyst:

Date Prep:

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.1	4.99	mg/kg	07.16.2020 18:29		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DVM

% Moisture:

Analyst: ARM Seq Number: 3131827

Tech:

Basis: Date Prep: $07.15.2020\ 08:30$

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 16:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 16:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 16:27	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 16:27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	84	%	70-130	07.15.2020 16:27
o-Terphenyl	84-15-1	84	%	70-130	07.15.2020 16:27

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-31 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-031

Date Collected: 07.13.2020 10:52

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL % Moisture:

KTL

Analyst:

Date Prep: 07.22.2020 16:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	07.22.2020 23:50	U	1
Toluene	108-88-3	< 0.00200	0.00200	mg/kg	07.22.2020 23:50	UX	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	07.22.2020 23:50	UXF	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400	mg/kg	07.22.2020 23:50	UX	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	07.22.2020 23:50	UX	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	07.22.2020 23:50	U	1
Total BTEX		< 0.00200	0.00200	mg/kg	07.22.2020 23:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.22.2020 23:50	
1,4-Difluorobenzene	540-36-3	106	%	70-130	07.22.2020 23:50	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-32

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-032

Date Collected: 07.13.2020 10:56

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE

CHE

Date Prep:

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter Cas Number Result RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 867 4.97 mg/kg 07.16.2020 18:35 1

Analytical Method: TPH by SW8015 Mod

DVM

Analyst: ARM

Tech:

Seq Number: 3131827

Date Prep:

07.15.2020 08:30

% Moisture:

Prep Method: SW8015P

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 16:49	U	1
Surrogate	(Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	89	%	70-130	07.15.2020 16:49
o-Terphenyl	84-15-1	86	%	70-130	07.15.2020 16:49

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-32

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-032

Date Collected: 07.13.2020 10:56

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.22.2020 16:30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199	mg/kg	07.23.2020 00:11	U	1
Toluene	108-88-3	0.00325	0.00199	mg/kg	07.23.2020 00:11		1
Ethylbenzene	100-41-4	< 0.00199	0.00199	mg/kg	07.23.2020 00:11	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398	mg/kg	07.23.2020 00:11	U	1
o-Xylene	95-47-6	< 0.00199	0.00199	mg/kg	07.23.2020 00:11	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199	mg/kg	07.23.2020 00:11	U	1
Total BTEX		0.00325	0.00199	mg/kg	07.23.2020 00:11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.23.2020 00:11	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.23.2020 00:11	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-33 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-033

Date Collected: 07.13.2020 11:00

% Moisture:

Prep Method: E300P

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	553	4.99	mg/kg	07.16.2020 18:41		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep: $07.15.2020\ 08:30$ Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	07.15.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	07.15.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	07.15.2020 17:33	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	07.15.2020 17:33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	F
1-Chlorooctane	111-85-3	85	%	70-130	07.15.2020 17:33	
o-Terphenyl	84-15-1	88	%	70-130	07.15.2020 17:33	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-33 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-033

Soil Date Collected: 07.13.2020 11:00

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.22.2020 16:30 Basis:

Wet Weight

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.23.2020 00:31	U	1
Toluene	108-88-3	0.00712	0.00199		mg/kg	07.23.2020 00:31		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.23.2020 00:31	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.23.2020 00:31	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.23.2020 00:31	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.23.2020 00:31	U	1
Total BTEX		0.00712	0.00199		mg/kg	07.23.2020 00:31		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4 D 0 1		160.00.4	110	0.7	70 120	07.22.2020.00.21		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.23.2020 00:31	
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.23.2020 00:31	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-34 Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-034

Date Collected: 07.13.2020 11:05

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.16.2020 15:20 Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	242	5.00	mg/kg	07.16.2020 18:59		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 17:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 17:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 17:55	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 17:55	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	88	%	70-130	07.15.2020 17:55
o-Terphenyl	84-15-1	88	%	70-130	07.15.2020 17:55

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-34

Analytical Method: BTEX by EPA 8021B

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-034

Date Collected: 07.13.2020 11:05

Prep Method: SW5035A

Tech:

KTL

% Moisture:

Analyst:

KTL

Date Prep:

07.22.2020 16:30

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.23.2020 00:52	U	1
Toluene	108-88-3	0.00781	0.00199		mg/kg	07.23.2020 00:52		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.23.2020 00:52	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.23.2020 00:52	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.23.2020 00:52	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.23.2020 00:52	U	1
Total BTEX		0.00781	0.00199		mg/kg	07.23.2020 00:52		1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123	%	70-130	07.23.2020 00:52	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.23.2020 00:52	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-35

Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-035

Soil Date Collected: 07.13.2020 11:01

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Date Prep: 07.16.2020 15:20 Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.23	5.03	mg/kg	07.16.2020 19:06		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	07.15.2020 18:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 18:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 18:17	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 18:17	U	1
Surrogate	,	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	95	%	70-130	07.15.2020 18:17
o-Terphenyl	84-15-1	93	%	70-130	07.15.2020 18:17

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-35 Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-035

Date Collected: 07.13.2020 11:01

Prep Method: SW5035A

KTL Tech:

% Moisture:

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep:

07.22.2020 16:30

Basis:

Wet Weight

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	07.23.2020 02:14	U	1
Toluene	108-88-3	0.00876	0.00198		mg/kg	07.23.2020 02:14		1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	07.23.2020 02:14	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	07.23.2020 02:14	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	07.23.2020 02:14	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	07.23.2020 02:14	U	1
Total BTEX		0.00876	0.00198		mg/kg	07.23.2020 02:14		1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.23.2020 02:14	
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.23.2020 02:14	



Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-36 Matrix:

Date Prep:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-036

Soil Date Collected: 07.13.2020 10:52

Prep Method: E300P % Moisture:

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

07.16.2020 15:20

Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.4	5.05	mg/kg	07.16.2020 19:12		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep: $07.15.2020\ 08:30$ Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	07.15.2020 18:38	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	84	%	70-130	07.15.2020 18:38
o-Terphenyl	84-15-1	89	%	70-130	07.15.2020 18:38

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-36

Matrix: Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-036

Date Collected: 07.13.2020 10:52

Prep Method: SW5035A

% Moisture:

Tech: KTL

Analyst:

KTL

Analytical Method: BTEX by EPA 8021B

Date Prep: 07.22.2020 16:30

Basis:

Wet Weight

Seq Number: 3132400

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.23.2020 02:34	U	1
Toluene	108-88-3	0.00478	0.00200		mg/kg	07.23.2020 02:34		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.23.2020 02:34	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	07.23.2020 02:34	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.23.2020 02:34	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.23.2020 02:34	U	1
Total BTEX		0.00478	0.00200		mg/kg	07.23.2020 02:34		1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	07.23.2020 02:34	
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.23.2020 02:34	

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-37

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-037

Date Collected: 07.13.2020 10:52

Prep Method: E300P

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.16.2020 15:20

Basis:

% Moisture:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.6	4.99	mg/kg	07.16.2020 19:30	X	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DVM ARM

Date Prep:

07.15.2020 08:30

Basis:

Wet Weight

Seq Number: 3131827

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 19:00	U	1
Surrogate	•	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	84	%	70-130	07.15.2020 19:00
o-Terphenyl	84-15-1	86	%	70-130	07.15.2020 19:00

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-37

Matrix:

Soil

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-037

Date Collected: 07.13.2020 10:52

Prep Method: SW5035A

Analytical Method: BTEX by EPA 8021B

% Moisture:

Tech:

KTL

Date Prep: 07.22.2020 16:30 Basis:

Wet Weight

KTL Analyst: Seq Number: 3132400

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	07.23.2020 02:55	U	1
Toluene	108-88-3	0.00502	0.00200		mg/kg	07.23.2020 02:55		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	07.23.2020 02:55	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	07.23.2020 02:55	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	07.23.2020 02:55	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	07.23.2020 02:55	U	1
Total BTEX		0.00502	0.00200		mg/kg	07.23.2020 02:55		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	119	%	70-130	07.23.2020 02:55		
1,4-Difluorobenzene		540-36-3	106	%	70-130	07.23.2020 02:55		

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-38

Matrix: Soil Date Received:07.13.2020 16:43

Lab Sample Id: 667044-038

Date Collected: 07.13.2020 10:48

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.16.2020 15:20 Basis:

Wet Weight

Seq Number: 3131896

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.7	5.04	mg/kg	07.16.2020 19:49		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DVM ARM

Date Prep:

 $07.15.2020\ 08:30$

Basis:

Wet Weight

Seq Number: 3131827

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	07.15.2020 19:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	07.15.2020 19:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	07.15.2020 19:22	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	07.15.2020 19:22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	89	%	70-130	07.15.2020 19:22
o-Terphenyl	84-15-1	93	%	70-130	07.15.2020 19:22

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-38 Matrix:

Date Received:07.13.2020 16:43

Lab Sample Id: 667044-038

Soil Date Collected: 07.13.2020 10:48

Analytical Method: BTEX by EPA 8021B

KTL

Prep Method: SW5035A

KTL Tech:

Analyst:

% Moisture:

Date Prep:

07.22.2020 16:30

%

70-130

Basis:

07.23.2020 03:15

Wet Weight

Seq Number: 3132400

4-Bromofluorobenzene

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	07.23.2020 03:15	U	1
Toluene	108-88-3	0.00857	0.00199		mg/kg	07.23.2020 03:15		1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	07.23.2020 03:15	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	07.23.2020 03:15	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	07.23.2020 03:15	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	07.23.2020 03:15	U	1
Total BTEX		0.00857	0.00199		mg/kg	07.23.2020 03:15		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	108	%	70-130	07.23.2020 03:15		

115

460-00-4



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Analysis

Analysis

Flag

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

LCSD

LCSD

Limits

Limits

%RPD

Analytical Method: Chloride by EPA 300

Seq Number: 3131895 Matrix: Solid

E300P Prep Method:

RPD

Date Prep: 07.16.2020

7707476-1-BLK LCS Sample Id: 7707476-1-BKS MB Sample Id:

Spike

LCS

MB

MR

LCSD Sample Id: 7707476-1-BSD

Units

Parameter Result Amount Result %Rec %Rec Limit Date Result 104 90-110 20 07.16.2020 14:29 Chloride < 5.00 250 260 261 104 0 mg/kg

LCS

Analytical Method: Chloride by EPA 300 3131896

Matrix: Solid

Prep Method: E300P

Date Prep:

Seq Number: MB Sample Id: 7707518-1-BLK

LCS Sample Id: 7707518-1-BKS

LCSD Sample Id: 7707518-1-BSD

07.16.2020

MB Spike LCS LCS Limits %RPD RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec

07.16.2020 17:52 Chloride < 5.00 250 263 105 263 105 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

LCS

Prep Method: E300P

Units

Seq Number: 3132156 Matrix: Solid Date Prep: 07.20.2020

LCS

LCS Sample Id: 7707611-1-BKS LCSD Sample Id: 7707611-1-BSD MB Sample Id: 7707611-1-BLK

%RPD Spike LCSD LCSD Flag **Parameter** Result Limit Result %Rec Date Amount Result %Rec 20 07.21.2020 00:55 Chloride < 5.00 250 232 93 238 95 90-110 3 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3131895 Matrix: Soil

E300P Prep Method:

RPD

Date Prep: 07.16.2020

MS Sample Id: 667048-075 S MSD Sample Id: 667048-075 SD Parent Sample Id: 667048-075

Parent Spike MS MS MSD Limits %RPD **RPD** Units Analysis MSD Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec 90-110 07.16.2020 14:47 Chloride 73.9 249 364 117 345 109 5 20 mg/kg X

Analytical Method: Chloride by EPA 300

Seq Number: 3131895 Matrix: Soil

Prep Method: E300P

07.16.2020 Date Prep:

MSD Sample Id: 667048-085 SD Parent Sample Id: 667048-085 MS Sample Id: 667048-085 S

Spike MS MS %RPD RPD Parent Limits MSD MSD Units Analysis Flag **Parameter** Result Amount Result %Rec %Rec Limit Date Result 07.16.2020 16:14 Chloride 424 250 703 112 702 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3131896 Matrix: Soil Prep Method:

E300P

Date Prep: 07.16.2020 667044-030 S MSD Sample Id: 667044-030 SD Parent Sample Id: 667044-030 MS Sample Id:

Parent Spike MS MS MSD Limits %RPD RPD Units Analysis MSD Flag **Parameter** Limit Result Result %Rec Date Amount Result %Rec 07.16.2020 18:10 Chloride 264 248 544 113 524 105 90-110 4 20 mg/kg Х

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec **Parameter**

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

MSD

Limits

MSD

%RPD

RPD

Units

SW8015P

Prep Method:

Analysis

Flag

Flag

Flag

E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3131896 Matrix: Soil Date Prep: 07.16.2020

MS Sample Id: 667044-037 S MSD Sample Id: 667044-037 SD Parent Sample Id: 667044-037 MS

MS

Result Amount Result %Rec Result %Rec Limit Date 292 20 07.16.2020 19:36 Chloride 14 6 250 111 281 90-110 mg/kg 107 4 X

Analytical Method: Chloride by EPA 300

Parent

Spike

Prep Method: E300P 07.20.2020 Seq Number: 3132156 Matrix: Soil Date Prep: MS Sample Id: 667044-010 S MSD Sample Id: 667044-010 SD Parent Sample Id: 667044-010

Parent Spike MS MS Limits %RPD RPD Units Analysis MSD MSD **Parameter** Flag Limit Result Amount Result %Rec Date Result %Rec

07.21.2020 01:11 Chloride 2190 1240 3340 93 3510 106 90-110 5 20 mg/kg

Analytical Method: Chloride by EPA 300

Prep Method: E300P Seq Number: 3132156 Matrix: Soil Date Prep: 07.20.2020 MS Sample Id: 667044-019 S MSD Sample Id: 667044-019 SD Parent Sample Id: 667044-019

RPD MS MS Parent Spike MSD MSD Limits %RPD Units Analysis Flag **Parameter** Result Limit Result Date Amount %Rec Result %Rec 07.21.2020 02:24 Chloride 60.6 249 295 94 315 102 90-110 7 20 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3131823 Matrix: Solid Date Prep: 07.15.2020

LCS Sample Id: 7707429-1-BKS LCSD Sample Id: 7707429-1-BSD MB Sample Id: 7707429-1-BLK

MB Spike LCS LCS Limits %RPD **RPD** Units Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Limit Date Result %Rec Gasoline Range Hydrocarbons (GRO) 07.15.2020 12:07 < 50.0 1000 1100 110 1100 70-130 0 20 110 mg/kg 07.15.2020 12:07 Diesel Range Organics (DRO) < 50.0 1000 1090 109 1110 111 70-130 2 20 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 101 106 109 70-130 % 07.15.2020 12:07 07.15.2020 12:07 o-Terphenyl 113 111 113 70 - 130%

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

1010

Seq Number: 3131827 Matrix: Solid Date Prep: 07.15.2020 7707430-1-BKS LCS Sample Id: LCSD Sample Id: 7707430-1-BSD MB Sample Id: 7707430-1-BLK

Spike MB LCS LCS Limits %RPD RPD LCSD LCSD Units **Analysis Parameter** Limit Date Result Amount Result %Rec Result %Rec Gasoline Range Hydrocarbons (GRO) 07.15.2020 12:07 20 < 50.0 1000 958 96 888 89 70-130 8 mg/kg

904

90

70-130

101

Diesel Range Organics (DRO) < 50.0 mg/kg MR MB LCS LCS LCSD Limits Units Analysis LCSD Surrogate Flag %Rec Flag Flag Date %Rec %Rec 87 97 89 70-130 % 07.15.2020 12:07 1-Chlorooctane 96 105 95 % 07.15.2020 12:07 70-130 o-Terphenyl

MS/MSD Percent Recovery [D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |Relative Percent Difference LCS/LCSD Recovery [D] = 100 * (C) / [B]

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

1000

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result

= MSD/LCSD Result

11

20

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

07.15.2020 12:07

D = MSD/LCSD % Rec

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

Analytical Method: TPH by SW8015 Mod SW8015P Prep Method: Seq Number: 3131955 Matrix: Solid Date Prep: 07.16.2020 7707520-1-BLK LCS Sample Id: 7707520-1-BKS LCSD Sample Id: 7707520-1-BSD MB Sample Id:

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.0	1000	885	89	939	94	70-130	6	20	mg/kg	07.16.2020 11:54	
Diesel Range Organics (DRO)	< 50.0	1000	981	98	1000	100	70-130	2	20	mg/kg	07.16.2020 11:54	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSE %Red			imits	Units	Analysis Date	
1-Chlorooctane	102		9	99		102		70)-130	%	07.16.2020 11:54	
o-Terphenyl	111		1	00		105		70)-130	%	07.16.2020 11:54	

Analytical Method: TPH by SW8015 Mod SW8015P Prep Method:

Matrix: Solid Seq Number: 3131823 Date Prep: 07.15.2020

MB Sample Id: 7707429-1-BLK

MB Units Analysis Flag **Parameter** Result Date Motor Oil Range Hydrocarbons (MRO) < 50.0 07.15.2020 11:46 mg/kg

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

Date Prep: Seq Number: 3131827 Matrix: Solid 07.15.2020

MB Sample Id: 7707430-1-BLK

MB Units Analysis Flag **Parameter** Result Date Motor Oil Range Hydrocarbons (MRO) < 50.0 07.15.2020 11:46 mg/kg

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

Seq Number: 3131955 Matrix: Solid Date Prep: 07.16.2020

MB Sample Id: 7707520-1-BLK

MB Units Analysis Flag **Parameter** Result Date Motor Oil Range Hydrocarbons (MRO) 07.16.2020 11:33 < 50.0 mg/kg

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method: Seq Number: 3131823 Matrix: Soil Date Prep: 07.15.2020

MS Sample Id: 667044-003 S MSD Sample Id: 667044-003 SD 667044-003 Parent Sample Id:

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Gasoline Range Hydrocarbons (GRO)	<49.9	997	959	96	862	86	70-130	11	20	mg/kg	07.15.2020 13:12
Diesel Range Organics (DRO)	<49.9	997	926	93	856	86	70-130	8	20	mg/kg	07.15.2020 13:12

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		85		70-130	%	07.15.2020 13:12
o-Terphenyl	92		85		70-130	%	07.15.2020 13:12

[D] = 100*(C-A) / BMS/MSD Percent Recovery LCS = Laboratory Control Sample MS = Matrix Spike Relative Percent Difference A = Parent Result B = Spike Added

RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] C = MS/LCS Result E = MSD/LCSD Result LCS/LCSD Recovery Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

Flag

Flag

Parent Sample Id:

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3131827

667044-023

Matrix: Soil MS Sample Id: 667044-023 S

SW8015P Prep Method:

Date Prep: 07.15.2020

MSD Sample Id: 667044-023 SD

RPD Parent Spike MS MS Limits %RPD Units Analysis MSD MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) <49.9 997 911 91 20 07.15.2020 13:12 884 70-130 3 89 mg/kg 07.15.2020 13:12 Diesel Range Organics (DRO) <49.9 997 948 95 943 70-130 1 20 95 mg/kg

MS MS MSD Limits Units Analysis MSD Surrogate Flag Flag Date %Rec %Rec 07.15.2020 13:12 1-Chlorooctane 92 91 70-130 % 91 07.15.2020 13:12 o-Terphenyl 95 70-130 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3131955

Parent Sample Id:

667184-001

Matrix: Soil

MS Sample Id: 667184-001 S Prep Method:

SW8015P

Date Prep: 07.16.2020

MSD Sample Id: 667184-001 SD

Parent Spike MS MS MSD Limits %RPD **RPD** Units Analysis MSD **Parameter** Result Amount Result %Rec Result %Rec Limit Date Gasoline Range Hydrocarbons (GRO) 96 20 07.16.2020 13:00 <49.9 997 959 949 95 70-130 mg/kg 07.16.2020 13:00 Diesel Range Organics (DRO) <49.9 997 1050 105 1040 104 70-130 20 mg/kg

MSD MS MS MSD Limits Units Analysis Surrogate %Rec Flag Flag Date %Rec 1-Chlorooctane 106 104 70-130 % 07.16.2020 13:00 07.16.2020 13:00 o-Terphenyl 103 101 70-130 0/6

Analytical Method: BTEX by EPA 8021B

3132080 Seq Number:

MB Sample Id:

7707661-1-BLK

Matrix: Solid

LCS Sample Id: 7707661-1-BKS

Prep Method:

SW5035A

07.17.2020

Date Prep: LCSD Sample Id: 7707661-1-BSD

RPD MB LCS LCS %RPD Units Spike LCSD LCSD Limits Analysis **Parameter** Result Amount Result %Rec %Rec Limit Date Result 07.18.2020 10:00 Benzene < 0.00200 0.100 0.0911 91 0.0799 80 70-130 13 35 mg/kg 07.18.2020 10:00 Toluene < 0.00200 0.100 0.0962 96 0.0848 85 70-130 13 35 mg/kg 07.18.2020 10:00 Ethylbenzene < 0.00200 0.100 0.0998 100 0.0861 86 70-130 15 35 mg/kg 97 15 07.18.2020 10:00 < 0.00400 0.200 0.194 0.167 70-130 35 mg/kg m,p-Xylenes 84 07.18.2020 10:00 o-Xylene < 0.00200 0.100 0.0984 98 0.0852 85 70-130 14 35 mg/kg

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		95		94		70-130	%	07.18.2020 10:00
4-Bromofluorobenzene	108		103		98		70-130	%	07.18.2020 10:00

Flag

Flag

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: 3132276 Matrix: Solid 07.21.2020 Seq Number: Date Prep: LCS Sample Id: 7707803-1-BKS MB Sample Id: 7707803-1-BLK LCSD Sample Id: 7707803-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.107	107	0.106	106	70-130	1	35	mg/kg	07.21.2020 20:39
Toluene	< 0.00200	0.100	0.102	102	0.106	106	70-130	4	35	mg/kg	07.21.2020 20:39
Ethylbenzene	< 0.00200	0.100	0.0995	100	0.104	104	70-130	4	35	mg/kg	07.21.2020 20:39
m,p-Xylenes	< 0.00400	0.200	0.193	97	0.205	103	70-130	6	35	mg/kg	07.21.2020 20:39
o-Xylene	< 0.00200	0.100	0.0934	93	0.0998	100	70-130	7	35	mg/kg	07.21.2020 20:39
Surrogate	MB	MB		CS	LCS	LCSI			imits	Units	Analysis

%Rec %Rec %Rec 07.21.2020 20:39 97 95 % 1,4-Difluorobenzene 101 70-130 07.21.2020 20:39 4-Bromofluorobenzene 109 95 102 70-130 %

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seq Number: 3132394 Matrix: Solid Date Prep: 07.22.2020 LCS Sample Id: 7707874-1-BKS LCSD Sample Id: 7707874-1-BSD MB Sample Id: 7707874-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0974	97	0.0961	96	70-130	1	35	mg/kg	07.22.2020 07:14
Toluene	< 0.00200	0.100	0.108	108	0.106	106	70-130	2	35	mg/kg	07.22.2020 07:14
Ethylbenzene	< 0.00200	0.100	0.110	110	0.107	107	70-130	3	35	mg/kg	07.22.2020 07:14
m,p-Xylenes	< 0.00400	0.200	0.222	111	0.216	108	70-130	3	35	mg/kg	07.22.2020 07:14
o-Xylene	< 0.00200	0.100	0.109	109	0.107	107	70-130	2	35	mg/kg	07.22.2020 07:14

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		92		93		70-130	%	07.22.2020 07:14
4-Bromofluorobenzene	115		115		114		70-130	%	07.22.2020 07:14

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seq Number: 3132400 Matrix: Solid Date Prep: 07.22.2020

LCS Sample Id: 7707878-1-BKS LCSD Sample Id: 7707878-1-BSD MB Sample Id: 7707878-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.119	119	0.109	109	70-130	9	35	mg/kg	07.22.2020 19:44
Toluene	< 0.00200	0.100	0.0981	98	0.0973	97	70-130	1	35	mg/kg	07.22.2020 19:44
Ethylbenzene	< 0.00200	0.100	0.0922	92	0.0927	93	70-130	1	35	mg/kg	07.22.2020 19:44
m,p-Xylenes	< 0.00400	0.200	0.174	87	0.178	89	70-130	2	35	mg/kg	07.22.2020 19:44
o-Xylene	< 0.00200	0.100	0.0859	86	0.0877	88	70-130	2	35	mg/kg	07.22.2020 19:44

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		108		102		70-130	%	07.22.2020 19:44
4-Bromofluorobenzene	89		93		96		70-130	%	07.22.2020 19:44

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Flag

QC Summary 667044

Larson and Associates, Inc.

EBDU #37

 Analytical Method:
 BTEX by EPA 8021B
 Prep Method:
 SW 5035A

 Seq Number:
 3132080
 Matrix:
 Soil
 Date Prep:
 07.17.2020

 Parent Sample Id:
 667044-001
 MS Sample Id:
 667044-001 S
 MSD Sample Id:
 667044-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0480	48	0.0513	52	70-130	7	35	mg/kg	07.18.2020 01:32	X
Toluene	< 0.00200	0.100	0.0475	48	0.0550	55	70-130	15	35	mg/kg	07.18.2020 01:32	X
Ethylbenzene	< 0.00200	0.100	0.0392	39	0.0515	52	70-130	27	35	mg/kg	07.18.2020 01:32	X
m,p-Xylenes	< 0.00400	0.200	0.0735	37	0.0983	49	70-130	29	35	mg/kg	07.18.2020 01:32	X
o-Xylene	< 0.00200	0.100	0.0385	39	0.0509	51	70-130	28	35	mg/kg	07.18.2020 01:32	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		110		70-130	%	07.18.2020 01:32
4-Bromofluorobenzene	101		101		70-130	%	07.18.2020 01:32

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3132276
 Matrix:
 Soil
 Date Prep:
 07.21.2020

 Parent Sample Id:
 667748-001
 MS Sample Id:
 667748-001 S
 MSD Sample Id:
 667748-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	F
Benzene	< 0.00200	0.100	0.0779	78	0.0737	74	70-130	6	35	mg/kg	07.21.2020 21:20	
Toluene	< 0.00200	0.100	0.0837	84	0.0843	84	70-130	1	35	mg/kg	07.21.2020 21:20	
Ethylbenzene	< 0.00200	0.100	0.0828	83	0.0848	85	70-130	2	35	mg/kg	07.21.2020 21:20	
m,p-Xylenes	< 0.00400	0.200	0.165	83	0.171	86	70-130	4	35	mg/kg	07.21.2020 21:20	
o-Xylene	< 0.00200	0.100	0.0812	81	0.0832	83	70-130	2	35	mg/kg	07.21.2020 21:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		90		70-130	%	07.21.2020 21:20
4-Bromofluorobenzene	104		105		70-130	%	07.21.2020 21:20

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

 Seq Number:
 3132394
 Matrix:
 Soil
 Date Prep:
 07.22.2020

 Parent Sample Id:
 667044-019
 MS Sample Id:
 667044-019 S
 MSD Sample Id:
 667044-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0750	75	0.0767	77	70-130	2	35	mg/kg	07.22.2020 07:55
Toluene	0.00557	0.100	0.0878	82	0.0875	82	70-130	0	35	mg/kg	07.22.2020 07:55
Ethylbenzene	< 0.00200	0.100	0.0829	83	0.0827	83	70-130	0	35	mg/kg	07.22.2020 07:55
m,p-Xylenes	< 0.00400	0.200	0.163	82	0.162	81	70-130	1	35	mg/kg	07.22.2020 07:55
o-Xylene	< 0.00200	0.100	0.0781	78	0.0782	78	70-130	0	35	mg/kg	07.22.2020 07:55

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		96		70-130	%	07.22.2020 07:55
4-Bromofluorobenzene	119		117		70-130	%	07.22.2020 07:55

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference
$$\label{eq:c-A} \begin{split} &[D] = 100*(C-A) \, / \, B \\ &RPD = 200* \mid (C-E) \, / \, (C+E) \mid \\ &[D] = 100*(C) \, / \, [B] \\ &Log \ Diff. = Log(Sample \ Duplicate) \ - \ Log(Original \ Sample) \end{split}$$

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

QC Summary 667044



Larson and Associates, Inc.

EBDU #37

SW5035A Analytical Method: BTEX by EPA 8021B Prep Method: Seq Number: 3132400 Matrix: Soil Date Prep: 07.22.2020 Parent Sample Id: 667044-031 MS Sample Id: 667044-031 S MSD Sample Id: 667044-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00199	0.0996	0.0959	96	0.0764	77	70-130	23	35	mg/kg	07.22.2020 20:25	
Toluene	< 0.00199	0.0996	0.0793	80	0.0584	59	70-130	30	35	mg/kg	07.22.2020 20:25	X
Ethylbenzene	< 0.00199	0.0996	0.0693	70	0.0484	49	70-130	36	35	mg/kg	07.22.2020 20:25	XF
m,p-Xylenes	< 0.00398	0.199	0.132	66	0.0944	48	70-130	33	35	mg/kg	07.22.2020 20:25	X
o-Xylene	< 0.00199	0.0996	0.0653	66	0.0475	48	70-130	32	35	mg/kg	07.22.2020 20:25	X
				*0 1	MC		. NAC	n r	,	TT .*4		

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		70-130	%	07.22.2020 20:25
4-Bromofluorobenzene	93		100		70-130	%	07.22.2020 20:25

R	eceivo	ed by	00	D:	1/9/2	2025	3:10	1.253	PM	1_	<u> </u>				ī	ı	T	Т	T		TI			Τ	·	Pag	e 302	of 515
LABORATORY: X	, 6		RELINQUISHED BY:(Signature)	RELINQUISHED BY:(Signature)	TOTAL /	6-18	6-14	C-13	6-12	C-11	6-10	C-9	6-8	1-7	5-6	5-7	h-7	(-)	6.2	2	Field Sample I.D.	TIME ZONE: Time zone/State: MST		Data Reported to:	I SSOCIATES, INC. Environmental Consultants	∆arson &		
xc3co	ignature)		ignature)	ignature)																	Lab#		S=SOIL W=WATER A=AIR		es, Inc I Consultants	-		
			,			 -				<u> </u>	- C	and the second			-					1113/20	Date		P=PAINT SL=SLUDGE OT=OTHER					
	DATE/TIME		DATE/TIME	DATE/TIME		1 2 th	846	15	45	851	0003	1005	1010	<i>1015</i>	2001	pr23	1027	8,0	1-35	242	Time		T)DGE HER					
						-										***************************************				5	Matrix					50.		
	RECEN			RECEIVED		H										AWAY DINGS		****		1	# of Con	tainers	· · · · · · · · · · · · · · · · · · ·		MIQI 4:	Z . X		
	ED BY:	- -	Î RY																		HCI HNO ₃		PRESE		didna, 1x /9/ 432-687-0901	arienf		
	RECEIVED BY: (Signature)		Signatur	RECEIVED BY: (Signature)																×	ICE) NaOH [©]			432-687-0901	507 N. Marienfeld, Ste.		
	re)	[6]		(e) // //		-			TO AND ST		e controlicado	MA							_	×	\	SSERVED	Ž		=	e. 200		
			V	7		%		23 4	-,14	4			**	4.74	**	~J*	200	,Δ.ω		* x	ANAI, ROLLAS	SES		 			1	
						<u>f</u>							diametrica de			·		Andreas and the second		XX	COR THE A			N PRC	PROJECT	DATE: _		
	OTHER 🔲	1 DAY 🗔	NORMAL 🔀	TURN,																	1678	1, 2, 18 , 1	(%), \	_AI PROJECT#:		7/13/	1	<u> </u>
	_ '		Ē,	TURN AROUND TIME																	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$			#	ATIO	1/20	0)
				D TIME																	XXX	××× /		9-0	LOCATION OR NAME:	,	7	-
U H	 င	CUS:	REC	LAB																				=				•
☐ HAND DELIVERED	CARRIER BILL #	CUSTODY SEALS -	RECEIVING TEMP.	LABORATORY USE ONLY:							\dashv													1 1	FBOU	-		
LIVERE	BILL#	EALS -	TEMP.5	RY USE											_									7	00		우	
D			S	ONLY:	r										, es van	مبدد حس		/	-	×		EASTON ON MOISTUS		COLLI	# 3			
		OKEN '	ング THERM#:							-											1 138%	$\sqrt{\sqrt{\kappa}}$	\times \times \times	COLLECTOR:	37	1	0	
		☐ BROKEN ☐ INTACT	ERM#:															40	1. A			TOTAL STATE	CRAIN CONTROL OF THE PROPERTY	R: H		PAGE.	F-C	N ⊡
		다. 다.		-) 														4	Ć		FIELD NOTES		ER AND	To		,	SU	Nº 1 96
		NOT USED	(J)														200	A Pack	57		OTES			8		9F W	CHAIN-OF-CUSTODY	ठ
R	eleaso		Imo	agin	g: L	/2/20	025 1	3:59	236 4	RMI)	M				Pag	e 97	of 10	0				Fina	il 1.000	1		-	\	,

A GISON 8		Recei	ived		CD:	i	2025	3.1	01953	3 PA	11_			T]	1	T	T	Т	Т		П	<u> </u>		1		Pag	ge 305	of 51
DATE TURN AROUND TIME RECEIVED BY: (Signature) DATE TURN AROUND TIME CUSTORY SEE CUSTOR		I ABORATORY: V.	RELINQUISHED BY:(S	RELINQUISHED BY:(S	RELINQUISHED BY:(8	TOTAL 15	8		L-28	C-27	6-26	6-25		C-23		1	3	61-7	1	ê		Field Sample I.D.	TIME ZONE: Time zone/State: 757	TRRP report?	Data Reported to:	SSOCIQ†	Aarson &		
SOT N. Morienfeld, Ste. 200 Middand, IX 79701 432-687-0901 PRESERVATION PRESERVATION PRESERVATION PRESERVATION AND STEINE AND STEI			signature)	signature)	Signature)																7/			S=SOIL W=WATER A=AIR		il Consultants			
Midland, IX 79701 A32-687-0901 A32-687-0901 A1 PROJECT LOCATION OR NAME: EBM PROJECT # 19-01/2 - 4/9 ILIU NO, SO, UE DEVELOR (Signature) TIME RECEIVED BY: (Signature) TIME RECEIVED BY: (Signature) DATE: 7/13/2 o PO#: LAB W PROJECT LOCATION OR NAME: EBM PROJECT #: 19-01/2 - 4/9 LAB W PROJECT #: 19-01/2 - 4/9 AND RAMOL ABOUND TIME RECEIVING TE CUSTODY SE CUSTODY SE COARRIER B CARRIER B			DAT	DAT	DAT 7/13			104	104	1-3	103	102	102	101	101	20%	100	101	25	36				P=PAINT SL=SLUDGI OT=OTHER					
Micland, TX 79701 PRESERVATION HCI INC. O.			E/TIME	E/TIME	E/TIME		+	-	6	-	۲	<i>a</i> 7		8	-	8	4	9	6	13				~ m					
ATE: 7/13/20 O#: LAB WORD TIME LABORATORY NORMAL AROUND TIME CUSTODY SEA OTHER DELT OTHER DELT LAB WORD TIME CUSTODY SEA OTHER DELT LAB WORD TIME CUSTODY SEA OTHER DELT LABORATORY RECEIVING TE CUSTODY SEA			RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)		F				Jvv.	A.	****		-1.vd	Ak				4	ゔ	# of Con HCI HNO ₃ H ₂ SO ₄ □ ICE UNPRES	〕NaOH □ SSERVED	PRESERVATION		Midland, TX 79701 432-687-0901			
LAB WO LAB WO RATORY SEVING TE STODY SEA AARRIER B		OTHER []	2 DAY 🗍	1 DAY	TURN AROUND TIME		<i>i</i> -														×		X	<i>\ \ \</i>		ECT	7/13/2	HO10HC	2
	- I HAND DELIVERED	☐ CARRIER BILL#		RECEIVING TEMP: 534 THERM#: 420	-															8,11					COLLECTOR: TJ &		_ PAGE_Z OF	CHAIN-OF-CUSTOD	Nº

Page 304 of 515 Received by OCD: 1/9/2025 3:01:53 PM4 RELINQUISHED BY:(Signature) RELINQUISHED BY Signature) RELINQUISHED BY:(Signature) LABORATORY: TOTAL C-34 6-33 C-32 TIME ZONE:
Time zone/State: Data Reported to: C.38 ☐ Yes 📜 No TRRP report? Field Sample I.D. arson & ssociates, Inc. Environmental Consultants 10000 W=WATER A=AIR S=SOIL Lab# Date SL=SLUDGE OT=OTHER P=PAINT DATE/TIME 104 16.52 052 Q 1100 ---Z DATE/TIME DATE/TIME Time Matrix 507 N. Marienfeld, Ste. 200 REPORTED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) # of Containers Midland, TX 79701 432-687-0901 HCI **PRESERVATION** HNO. H,SO, 🗅 NaOH 🗓 UNPRESSERVED DATE: PROJECT LOCATION OR NAME: LAI PROJECT #: 2 DAY 🗀 1 DAY 🗆 NORMAL 🗷 OTHER [**TURN AROUND TIME** LABORATORY USE ONLY RECEIVING TEMP: 5.3 4.9 THERM#: 1020 HAND DELIVERED CARRIER BILL # CUSTODY SEALS - D BROKEN DINTACT TNOT USED LAB WORK ORDER# F800 #3> COLLECTOR: 73 F _PAGE_**3**_ of **3** 000 0000 FIELD NOTES Arche Released to Imaging: 1/9/2025 3:59:36 PM M Page 99 of 100 Final 1.000

CHAIN-OF-CUSTODY

Nº 1198

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 07.13.2020 04.43.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 667044

Temperature Measuring device used: IR-8

Sa	mple Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		4.9	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping container/	cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquished/	received?	Yes	
#10 Chain of Custody agrees with sample label	s/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	BTEX was in bulk container
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated test	(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headspace	?	N/A	

Analyst:		PH Device/Lot#:	
	Checklist completed by:	Bauta Tuf Brianna Teel	Date: <u>07.14.2020</u>
	Checklist reviewed by:	thely Taylor	Date: 07.16.2020

Holly Taylor

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Final 1,000

Page 1 of 10

Released to Imaging: 8/27/2021 10:20:40 AM

Secreted by OCD: 2/9/2021 11:39:58 AM enables & eurofins Environment Testing Kenco		Certifica Larso	ificate of Analysis Summary 668318 Larson and Associates, Inc., Midland, TX	Receive
			Project Name: EBDU #37	
Project Id: 19-0112-49			Date Received in Lab: Tue 07.28.2020 08:45	
Contact: Mark Larson			Report Date: 07.29.2020 15:48 Parts	2.48 8
Froject Location:			riolect Manager: 110119 1 ay 101	
	Lab Id:	668318-001		
Analysis Pounostod	Field Id:	C-2		
naisanhau sishmuv	Depth:			
	Matrix:	SOIL		
	Sampled:	07.27.2020 14:15		
Chloride by EPA 300	Extracted:	07.29.2020 08:40		
	Analyzed:	07.29.2020 09:58		
	Units/RL:	mg/kg RL		
Chloride		86.5 5.04		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 668318

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBDU #37 19-0112-49 07.29.2020

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.29.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 668318

EBDU #37
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 668318. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 668318 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

John Builes

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 668318

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample IdMatrixDate CollectedSample DepthLab Sample IdC-2S07.27.2020 14:15668318-001

Page 310 of 515

CASE NARRATIVE

eurofins **Environment Testing** Xenco

Client Name: Larson and Associates, Inc. Project Name: EBDU #37

Project ID: Report Date: 07.29.2020 19-0112-49 Work Order Number(s): 668318 Date Received: 07.28.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-2

Matrix:

Soil

Date Received:07.28.2020 08:45

Lab Sample Id: 668318-001

Date Collected: 07.27.2020 14:15

Concetted: 07.27.2020 1 1.13

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE

Analytical Method: Chloride by EPA 300

CHE

Date Prep:

07.29.2020 08:40

Basis:

Wet Weight

Seq Number: 3132893

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	86.5	5.04	mg/kg	07.29.2020 09:58		1



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



MB Sample Id:

Parent Sample Id:

Parent Sample Id:

Larson and Associates, Inc.

668318

EBDU #37

Analytical Method: Chloride by EPA 300

Seq Number:

7708262-1-BLK

Matrix: Solid 3132893

LCS Sample Id: 7708262-1-BKS

E300P Prep Method:

Date Prep:

Prep Method:

07.29.2020

LCSD Sample Id: 7708262-1-BSD

RPD MB Spike LCS LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date

236 94 90-110 20 07.29.2020 09:45 Chloride < 5.00 250 236 94 0 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3132893

668222-009

Matrix: Soil 668222-009 S MS Sample Id:

Date Prep:

E300P

07.29.2020 MSD Sample Id: 668222-009 SD

Spike Parent MS MS Limits %RPD RPD Units Analysis MSD MSD **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result

07.29.2020 11:30 Chloride 1000 253 1210 83 1210 83 90-110 0 20 mg/kg X

Analytical Method: Chloride by EPA 300

Seq Number: 3132893

Matrix: Soil

Prep Method:

E300P

Date Prep: 07.29.2020

MS Sample Id: 668318-001 S MSD Sample Id: 668318-001 SD 668318-001

RPD MS MS %RPD Parent Spike MSD MSD Limits Units Analysis **Parameter** Flag Limit Result Result %Rec Date Amount Result %Rec Chloride 334 20 07.29.2020 10:04 86.5 252 98 330 90-110 1 mg/kg

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Received by OCD: LABORATORY: Xenco RELINQUISHED BY:(Signature) RELINQUISHED BY: (Signature) TOTAL RELINCUISHED BY:(Signature) TIME ZONE:
Time zone/State: Data Reported to: Yes XNo TRRP report? Field Sample I.D. 8 arson & ssociates, Inc. Environmental Consultants 257 W=WATER S=SOIL A=AIR Lab# 7/27/2014:15 Date OT=OTHER SL=SLUDGE P=PAINT DATE/TIME Time DATE/TIME DATE/TIME Matrix RECEIVED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) # of Containers 432-687-0901 PRESERVATION HCI HNO. H,SO, 🗅 NaOH 🗅 **ICE** UNPRESSERVED PROJECT LOCATION OR NAME: LAI PROJECT #: NORMAL []
1 DAY A Rush! 2 DAY 🗔 OTHER [] **TURN AROUND TIME** LABORATORY USE ONLY:

RECEIVING TEMP: 25/47HERM#: HAND DELIVERED CUSTODY SEALS - D BROKEN DINTACT D NOT USED CARRIER BILL # 元のウス ギジン COLLECTOR: FIELD NOTES - Released to Imaging: 1/9/2025 3:59:36 PM M Final 1.000

3168011 DATE: 7/28/2020

507 N. Marienfeld, Ste. 200

Midland, TX 79701

Page 314 of 515

CHAIN-OF-CUSTODY

LAB WORK ORDER#:

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 07.28.2020 08.45.00 AM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 668318

Analyst:

Temperature Measuring device used: IR-8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		27.1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		No	
#4 *Custody Seals intact on shipping contain	ner/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated t	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headsp	ace?	N/A	

* Must be completed	for after-hours	delivery of	samples pr	ior to placii	ng in the refrig	erator

Checklist completed by:	Brince hal	Date: <u>07,28.2020</u>
	Brianna Teel	
Checklist reviewed by:	thely Taylor	Date: 07.28.2020
	Holly Taylor	

PH Device/Lot#:

Certificate of Analysis Summary 668607 Larson and Associates, Inc., Midland, TX

Secered by OCD: 2/9/2021 11:39:38 AM element Perting Environment Testing Xenco		Certific Lar	ate of Analy son and Associal	Certificate of Analysis Summary 668607 Larson and Associates, Inc., Midland, TX	y 668607 nd, TX		Receive fo 751 agn
			Project Nan	Project Name: EBDU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Thu 07.30.2020 09:20	020 09:20
Contact: Mark Larson					Repor	Report Date: 07.31.2020 13:12	3:12
Project Location: NM					Project Ma	Project Manager: Holly Taylor	
	Lab Id:	668607-001	668607-002	668607-003	668607-004	668607-005	900-209899
Amalucie Domoctod	Field Id:	C-3	C-4	C-5	C-6	C-7	C-8
Analysis Neduesica	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.29.2020 09:34	07.29.2020 09:42	07.29.2020 09:47	07.29.2020 09:51	07.29.2020 09:56	07.29.2020 16:35
Chloride by EPA 300	Extracted:	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10
	Analyzed:	07.30.2020 12:39	07.30.2020 12:57	07.30.2020 13:03	07.30.2020 13:10	07.30.2020 13:16	07.30.2020 13:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		39.0 X 5.02	21.8 4.99	5.75 4.97	162 5.04	11.5 4.05	19.0 4.95

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Page 1 of 30

Final 1,000

Final 1,000

Page 2 of 30

Certificate of Analysis Summary 668607 Larson and Associates, Inc., Midland, TX

Secretary OCD: 1/9/2011 11:39:38 AM eurofins Environment Testing Kenco		Certifica Larso	ate of Analy son and Associa	ificate of Analysis Summary 668607 Larson and Associates, Inc., Midland, TX	y 668607 nd, TX		Receive forst again
			Project Nar	Project Name: EBDU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Thu 07.30.2020 09:20	020 09:20
Contact: Mark Larson					Repo	Report Date: 07.31.2020 13:12	3:12
Project Location: NM					Project M	Project Manager: Holly Taylor	
	Lab Id:	200-209899	800-209899	600-209899	668607-010	668607-011	668607-012
Analysis Domostod	Field Id:	C-9	C-10	C-26	C-27	C-28	C-12
Anatysis requested	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.29.2020 16:32	07.29.2020 16:30	07.29.2020 13:10	07.29.2020 12:28	07.29.2020 13:05	07.29.2020 13:23
Chloride by EPA 300	Extracted:	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10
	Analyzed:	07.30.2020 13:40	07.30.2020 13:46	07.30.2020 13:53	07.30.2020 13:59	07.30.2020 14:05	07.30.2020 14:23
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		200 \$ 04	126 501	307 4 96	71 6 4 99	630 5 00	176 503

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Released to Imaging: 8/27/2021 10:20:40 AM

07.31.2020 13:12	
Report Date:	

Secreted by OCD: 2/9/2021 11:39:58 AM selection Environment Testing		Certific Lar	ate of Analy	Certificate of Analysis Summary 668607 Larson and Associates, Inc., Midland, TX	y 668607 1d, TX		Received to the second
and the state of t			Project Nan	Project Name: EBDU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Thu 07.30.2020 09:20	20 09:20
Contact: Mark Larson					Repor	Report Date: 07.31.2020 13:12	3:12
Project Location: NM					Project Ma	Project Manager: Holly Taylor	
	Lab Id:	668607-013	668607-014	668607-015	668607-016	668607-017	668607-018
Analysis Posmostod	Field Id:	C-17	C-32	C-21	C-22	C-23	C-24
naisanhay sistiniiv	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	07.29.2020 14:15	07.29.2020 14:00	07.29.2020 15:23	07.29.2020 16:45	07.29.2020 16:05	07.29.2020 16:00
Chloride by EPA 300	Extracted:	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10	07.30.2020 12:10
	Analyzed:	07.30.2020 14:29	07.30.2020 14:48	07.30.2020 14:54	07.30.2020 15:00	07.30.2020 15:06	07.30.2020 15:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		90 / 82 0	30.8 4.08	237 5.00	PU 3 007	13900	4 00

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000



Analytical Report 668607

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBDU 37 19-0112-49 07.31.2020

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.31.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 668607

EBDU 37

Project Address: NM

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 668607. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 668607 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 668607

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
C-3	S	07.29.2020 09:34		668607-001
C-4	S	07.29.2020 09:42		668607-002
C-5	S	07.29.2020 09:47		668607-003
C-6	S	07.29.2020 09:51		668607-004
C-7	S	07.29.2020 09:56		668607-005
C-8	S	07.29.2020 16:35		668607-006
C-9	S	07.29.2020 16:32		668607-007
C-10	S	07.29.2020 16:30		668607-008
C-26	S	07.29.2020 13:10		668607-009
C-27	S	07.29.2020 12:28		668607-010
C-28	S	07.29.2020 13:05		668607-011
C-12	S	07.29.2020 13:23		668607-012
C-17	S	07.29.2020 14:15		668607-013
C-32	S	07.29.2020 14:00		668607-014
C-21	S	07.29.2020 15:23		668607-015
C-22	S	07.29.2020 16:45		668607-016
C-23	S	07.29.2020 16:05		668607-017
C-24	S	07.29.2020 16:00		668607-018

Page 322 of 515

CASE NARRATIVE

eurofins 🔆 **Environment Testing** Xenco

Client Name: Larson and Associates, Inc. Project Name: EBDU 37

Project ID: Report Date: 07.31.2020 19-0112-49 Work Order Number(s): 668607 Date Received: 07.30.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3133114 Chloride by EPA 300

Lab Sample ID 668607-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 668607-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-3

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-001

Date Collected: 07.29.2020 09:34

Prep Method: E300P

% Moisture:

Tech: C

Analyst:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Seq Number: 3133114

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.0	5.02	mg/kg	07.30.2020 12:39	X	1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-4

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-002

Soil Date Collected: 07.29.2020 09:42

Prep Method: E300P

% Moisture:

Tech:

Analyst:

CHE CHE

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Seq Number: 3133114

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.8	4.99	mg/kg	07.30.2020 12:57		1



Xenco

Certificate of Analytical Results 668607

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-5 Matrix:

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-003

Soil Date Collected: 07.29.2020 09:47

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

CHE Tech:

% Moisture:

Analyst:

Date Prep: 07.30.2020 12:10 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.75	4.97	mg/kg	07.30.2020 13:03		1



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **C-6**

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-004

Date Collected: 07.29.2020 09:51

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	162	5.04	mg/kg	07.30.2020 13:10		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-7

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-005

Date Collected: 07.29.2020 09:56

Prep Method: E300P

ep Method. 1230

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	4.95	mg/kg	07.30.2020 13:16		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-8

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-006

Date Collected: 07.29.2020 16:35

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.0	4.95	mg/kg	07.30.2020 13:34		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-9

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-007

Date Collected: 07.29.2020 16:32

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	200	5.04	mg/kg	07.30.2020 13:40		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-10

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-008

Date Collected: 07.29.2020 16:30

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	126	5.01	mg/kg	07.30.2020 13:46		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-26

Matrix: Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-009

Date Collected: 07.29.2020 13:10

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	307	4.96	mg/kg	07.30.2020 13:53		1



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-27

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-010

Date Collected: 07.29.2020 12:28

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep: 07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.6	4.99	mg/kg	07.30.2020 13:59		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-28

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-011

Date Collected: 07.29.2020 13:05

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	630	5.00	mg/kg	07.30.2020 14:05		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-12 Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-012

Date Collected: 07.29.2020 13:23

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.6	5.03	mg/kg	07.30.2020 14:23		1

Dil

1



Certificate of Analytical Results 668607

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-17 Matrix: Soil Date Received:07.30.2020 09:20

Lab Sample Id: 668607-013

Analytical Method: Chloride by EPA 300

Date Collected: 07.29.2020 14:15

Prep Method: E300P

4.96

07.30.2020 14:29

% Moisture:

CHE Tech: CHE

Seq Number: 3133114

Analyst:

Chloride

Date Prep:

16887-00-6

07.30.2020 12:10

Basis:

mg/kg

Wet Weight

Flag

Parameter	Cas Number	Result	RL	Units	Analysis Date
					v

9.78

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-32 Matrix:

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-014

Soil Date Collected: 07.29.2020 14:00

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.30.2020 12:10 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.8	4.98	mg/kg	07.30.2020 14:48		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-21 Lab Sample Id: 668607-015 Matrix: Soil

Date Received:07.30.2020 09:20

Date Collected: 07.29.2020 15:23

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	237	5.00	mg/kg	07.30.2020 14:54		1



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-22 Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-016

Date Collected: 07.29.2020 16:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: CHE CHE

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	608	5.04	mg/kg	07.30.2020 15:00		1

Xenco

Environment Testing

Certificate of Analytical Results 668607

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-23

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-017

Date Collected: 07.29.2020 16:05

Prep Method: E300P

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

07.30.2020 12:10

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13900	99.2	mg/kg	07.30.2020 15:06		20



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: C-24

-24

Matrix:

Soil

Date Received:07.30.2020 09:20

Lab Sample Id: 668607-018

Analytical Method: Chloride by EPA 300

Date Collected: 07.29.2020 16:00

Prep Method: E300P

% Moisture:

Tech: CH

Analyst:

CHE CHE

Date Prep:

07.30.2020 12:10

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.4	4.98	mg/kg	07.30.2020 15:12		1



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Analysis

Flag

QC Summary 668607

Larson and Associates, Inc.

EBDU 37

LCSD

Analytical Method: Chloride by EPA 300

Seq Number: 3133114

Matrix: Solid

Spike

LCS

E300P Prep Method:

Date Prep: 07.30.2020

MB Sample Id: 7708388-1-BLK LCS Sample Id: 7708388-1-BKS

MB

LCSD Sample Id: 7708388-1-BSD RPD Units

Parameter Result Amount Result %Rec Result %Rec Limit Date < 5.00 98 99 90-110 20 07.30.2020 12:27 Chloride 250 246 247 0 mg/kg

LCS

Analytical Method: Chloride by EPA 300

Seq Number: 3133114 Matrix: Soil

LCSD

Date Prep: 07.30.2020 MSD Sample Id: 668607-001 SD

Prep Method:

668607-001 S MS Sample Id: Parent Sample Id: 668607-001 Spike Parent MS MS MSD MSD

%RPD RPD Units Analysis

E300P

Parameter Flag Result Amount Result %Rec %Rec Limit Date Result 07.30.2020 12:45 Chloride 39.0 251 319 112 315 110 90-110 20 mg/kg X

Analytical Method: Chloride by EPA 300

Seq Number: 3133114 Parent Sample Id: 668607-011

E300P Prep Method: Matrix: Soil Date Prep: 07.30.2020

668607-011 S MS Sample Id: MSD Sample Id: 668607-011 SD

Limits

Limits

%RPD

RPD MS MS %RPD Units Parent Spike MSD MSD Limits Analysis **Parameter** Flag Result Limit Result %Rec Date Amount Result %Rec Chloride 879 0 20 07.30.2020 14:11 630 250 100 876 98 90-110 mg/kg

6121 Nº 1216 CHAIN-OF-CUSTODY

Page 343 of 515

arson &

507 N. Marienfeld, Ste. 200

Midland, TX 79701

P0#:

LAB WORK ORDER#: EBDU 37

PAGE OF 2

DATE:

1/29/20

PROJECT LOCATION OR NAME:

432-687-0901

ssociates, inc **Environmental Consultants**

Page 28 of 30

Final 1.000

666607 Nº 1217

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 07.30.2020 09.20.00 AM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 668607

Temperature Measuring device used: ir8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		25.3	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated t	test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headsp.	ace?	N/A	

Analyst: PH Device/Lot#:

> Checklist completed by:
>
> Jessica Kramer
>
> Jessica Kramer Date: 07.30.2020

Checklist reviewed by: #ely Taylor

Holly Taylor Date: 07.30.2020

seerved by OCD: 2/9/2021 11:39:58 AM Environment Testing Seerved by OCD: 2/9/2021 11:39:58 AM Seerved by OCD: 2/9/2021 11:39:58 AM		Certific Lar	ate of Analy son and Associa	Certificate of Analysis Summary 668986 Larson and Associates, Inc., Midland, TX	y 668986 nd, TX		Receive E fo 791 again
			Project Nan	Project Name: EBDU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Tue 08.04.2020 08:30	020 08:30
Contact: Mark Larson					Repo	Report Date: 08.04.2020 15:48	5:48
Project Location:					Project M	Project Manager: Holly Taylor	
	Lab Id:	668986-001	668986-002	668986-003	668986-004	9089899	900-986899
Analysis Pounostod	Field Id:	BH-1 10'	BH-1 12'	BH-1 14'	BH-1 16'	BH-1 18'	BH-1 20'
Thursday requested	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	08.03.2020 11:40	08.03.2020 11:42	08.03.2020 11:53	08.03.2020 11:55	08.03.2020 11:57	08.03.2020 12:24
Chloride by EPA 300	Extracted:	08.04.2020 10:45	08.04.2020 10:45	08.04.2020 10:45	08.04.2020 10:45	08.04.2020 10:45	08.04.2020 10:45
	Analyzed:	08.04.2020 11:53	08.04.2020 11:58	08.04.2020 12:03	08.04.2020 12:08	08.04.2020 12:14	08.04.2020 12:19
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		116 500	13.3 5.00	13.4 5.03	20 / 0 / 05	34.4 4.99	24.7 X S OS

lession Warren

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Certificate of Analysis Summary 668986

Secenced by OCD: 2/9/2021 11:39:38 AM eurofins Environment Testing Kenco		Certific Lar	Certificate of Analysis Summary 668986 Larson and Associates, Inc., Midland, TX		Page 163 of 3.
			Project Name: EBDU 37		
Project Id: 19-0112-49				3:30	
Contact: Mark Larson				Report Date: 08.04.2020 15:48	
Project Location:				Project Manager: Holly Taylor	
	Lab Id:	200-986899	800-986899		
Andreis Domostod	Field Id:	BH-1 25'	BH-1 30'		
Analysis Neducisica	Depth:				
	Matrix:	SOIL	SOIL		
	Sampled:	08.03.2020 13:30	08.03.2020 13:33		
Chloride by EPA 300	Extracted:	08.04.2020 10:45	08.04.2020 10:45		
	Analyzed:	08.04.2020 12:35	08.04.2020 12:40		
	Units/RL:	mg/kg RL	mg/kg RL		
Chloride		31.0 5.00	315 504		

lession Warren

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Analytical Report 668986

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBDU 37 19-0112-49 08.04.2020

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco-Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.04.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 668986

EBDU 37
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 668986. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 668986 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

fession Weamer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 668986

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 10'	S	08.03.2020 11:40		668986-001
BH-1 12'	S	08.03.2020 11:42		668986-002
BH-1 14'	S	08.03.2020 11:53		668986-003
BH-1 16'	S	08.03.2020 11:55		668986-004
BH-1 18'	S	08.03.2020 11:57		668986-005
BH-1 20'	S	08.03.2020 12:24		668986-006
BH-1 25'	S	08.03.2020 13:30		668986-007
BH-1 30'	S	08.03.2020 13:33		668986-008

Page 351 of 515

CASE NARRATIVE

eurofins

Environment Testing
Xenco

Client Name: Larson and Associates, Inc. Project Name: EBDU 37

Project ID: 19-0112-49 Work Order Number(s): 668986 Report Date: 08.04.2020
Date Received: 08.04.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3133486 Chloride by EPA 300

Lab Sample ID 668986-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 668986-001, -002, -003, -004, -005, -006, -007, -008.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 10' Matrix:

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-001

Soil Date Collected: 08.03.2020 11:40

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

CHE Tech:

Analyst:

CHE

Date Prep: 08.04.2020 10:45 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	5.00	mg/kg	08.04.2020 11:53		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 12' Matrix:

Date Prep:

Soil

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-002

Analytical Method: Chloride by EPA 300

Date Collected: 08.03.2020 11:42

Prep Method: E300P

CHE Tech:

% Moisture:

CHE Analyst:

08.04.2020 10:45

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.3	5.00	mg/kg	08.04.2020 11:58		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 14'

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-003

Soil Date Collected: 08.03.2020 11:53

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep:

08.04.2020 10:45

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	5.03	mg/kg	08.04.2020 12:03		1



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 16'

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-004

Soil Date Collected: 08.03.2020 11:55

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.04.2020 10:45 Basis:

Wet Weight

Seq Number: 3133486

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.9	4.95	mg/kg	08.04.2020 12:08		1

Matrix:



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 18'

Matrix: Soil Date Received:08.04.2020 08:30

Lab Sample Id: 668986-005

Date Collected: 08.03.2020 11:57

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Analyst:

CHE

% Moisture:

CHE

Date Prep: 08.04.2020 10:45 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.4	4.99	mg/kg	08.04.2020 12:14		1

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 20'

Matrix:

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-006

Soil Date Collected: 08.03.2020 12:24

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep: 08.04.2020 10:45 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.7	5.05	mg/kg	08.04.2020 12:19	X	1



Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 25'

Matrix:

Soil

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-007

Date Collected: 08.03.2020 13:30

Prep Method: E300P

Analytical Method: Chloride by EPA 300

CHE

% Moisture:

Tech: CI

Seq Number: 3133486

Analyst:

CHE

Date Prep:

08.04.2020 10:45

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.0	5.00	mg/kg	08.04.2020 12:35		1

Xenco

Certificate of Analytical Results 668986

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: BH-1 30'

Matrix:

Date Received:08.04.2020 08:30

Lab Sample Id: 668986-008

Soil Date Collected: 08.03.2020 13:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

CHE Analyst:

Date Prep:

08.04.2020 10:45

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.5	5.04	mg/kg	08.04.2020 12:40		1



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Analysis

Flag

Seq Number:

Parent Sample Id:

QC Summary 668986

Larson and Associates, Inc.

EBDU 37

LCSD

LCSD

Analytical Method: Chloride by EPA 300

Matrix: Solid 3133486

LCS

Spike

E300P Prep Method:

RPD

Prep Method:

%RPD

Date Prep: 08.04.2020

MB Sample Id: 7708666-1-BLK LCS Sample Id: 7708666-1-BKS

MB

LCSD Sample Id: 7708666-1-BSD

Units

E300P

E300P

Parameter Result Amount Result %Rec Result %Rec Limit Date

107 20 08.04.2020 10:55 Chloride < 5.00 250 267 268 107 90-110 0 mg/kg

LCS

Analytical Method: Chloride by EPA 300

Seq Number: 3133486

668967-001

Prep Method: Matrix: Soil Date Prep:

Limits

08.04.2020 668967-001 S MSD Sample Id: 668967-001 SD MS Sample Id:

Spike Parent MS MS Limits %RPD RPD Units Analysis **MSD** MSD **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result

08.04.2020 11:10 Chloride 297 2510 3050 110 3040 109 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3133486

Matrix: Soil Date Prep: 08.04.2020

MS Sample Id: 668986-006 S MSD Sample Id: 668986-006 SD Parent Sample Id: 668986-006

RPD MS MS %RPD Units Parent Spike MSD MSD Limits Analysis Flag **Parameter** Result Limit %Rec Date Result Amount Result %Rec Chloride 0 20 08.04.2020 12:24 24.7 253 312 114 312 114 90-110 X mg/kg

Page 362 of 515 Received by OCD: LABORATORY: Xenco RELINQUIŠHED BY:(Signature) TOTAL RELINQUISHED BY:(Signature) RELIMOUISHED BY:(Signature) 1-H2 BHY 1-118 1-H8 Data Reported to: BH-1 BH-1-10 RHI TIME ZONE: Time zone/State: BHY Yes Field Sample I.D. TRRP report? 75.5 arson & ssociates, Inc. Environmental Consultants No No œ A=AIR W=WATER S=SOIL Lab# 8-3-20 Date OT=OTHER SL=SLUDGE DATE/TIME 83 1142 1333 155 153 1140 DATE/TIME 1224 DATE/TIME 1157 Time Matrix 507 N. Marienfeld, Ste. 200 RECEIVED BY: (Signature) RECEIVED BY: (Signature) SCENED BY: (Signature) G | 4 | 2) # of Containers Midland, TX 79701 432-687-0901 PRESERVATION HNO H,SO, 🗖 NaOH 📮 UNPRESSERVED DATE: P0#: PROJECT LOCATION OR NAME: LAI PROJECT #: 2 DAY 🔲 1 DAY 🛛 OTHER NORMAL 🔲 TURN AROUND TIME RECEIVING TEMP: 2 6 THERM#: HAND DELIVERED CARRIER BILL# CUSTODY SEALS - D BROKEN DINTACT D NOT USED LAB WORK ORDER#: EBBU 37 CHAIN-OF-CUSTODY COLLECTOR: PAGE | OF FIELD NOTES Released to Imaging: 1/9/2025 3:59:36 PM N

Page 17 of 18

Final 1.000

Nº 1322

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 08.04.2020 08.30.00 AM

Air and Metal samples Acceptable Range: Ambient

Date: 08.04.2020

Work Order #: 668986

Temperature Measuring device used: IR-8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		2.2	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	er/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquished	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated to	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headspa	ace?	N/A	

* Must be	completed for after-hours de	livery of samples prior to pla	cing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Brianna Teel	Date: <u>08.04.2020</u>
	Checklist reviewed by:	lossion Weamer	

Jessica Kramer

Certificate of Analysis Summary 669190 Larson and Associates, Inc., Midland, TX

Secreted by OCD: 2/9/2021 11:39:58 AM searofins Environment Testing	58 AM	Certific: Lars	Certificate of Analysis Summary 669190 Larson and Associates, Inc., Midland, TX	sis Summar es, Inc., Midlan	y 669190 id, TX	Pa	Page 180 of 3.
			Project Name: Apache-EBDu #37	pache -EBDu #37			
Project Id: 19-0112-45	6				Date Received	Date Received in Lab: Wed 08.05.2020 10:28	
Contact: Mark Larsc	uo				Repor	Report Date: 08.06.2020 16:24	
Project Location:					Project Manager:	Holly Taylor	
	Lab Id:	669190-001	669190-002	669190-003	669190-004		
Andheis Domostod	Field Id:	C-28	C-22	C-23	C-1		
and sistematical and a sistemati	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	08.04.2020 12:54	08.04.2020 14:04	08.04.2020 14:12	08.04.2020 17:28		
Chloride by EPA 3	00 Extracted:	08.05.2020 11:26	08.05.2020 11:26	08.05.2020 11:26	08.05.2020 11:26		
	Analyzed:	08.05.2020 12:29	08.05.2020 12:45	08.05.2020 12:51	08.05.2020 12:57		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		415 9.98	10.7 10.0	15.8 10.1	338 10.1		
TPH By SW8015 Mod	lod Extracted:				08.06.2020 10:30		
	Analyzed:				08.06.2020 10:45		
	Units/RL:				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)	(6)				<50.3 50.3		
Diesel Range Organics (DRO)					<50.3 50.3		
Motor Oil Range Hydrocarbons (MRO)	(0)				<50.3 50.3		
Total TPH					<50.3 50.3		

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Analytical Report 669190

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Apache -EBDu #37 19-0112-49 08.06.2020

Collected By: Client

1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.06.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 669190

Apache -EBDu #37 Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 669190. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 669190 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 669190

Larson and Associates, Inc., Midland, TX

Apache -EBDu #37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
C-28	S	08.04.2020 12:54		669190-001
C-22	S	08.04.2020 14:04		669190-002
C-23	S	08.04.2020 14:12		669190-003
C-1	S	08.04.2020 17:28		669190-004

CASE NARRATIVE

eurofins **Environment Testing** Xenco

Client Name: Larson and Associates, Inc. Project Name: Apache -EBDu #37

Project ID: Report Date: 08.06.2020 19-0112-49 Work Order Number(s): 669190 Date Received: 08.05.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Larson and Associates, Inc., Midland, TX

Apache -EBDu #37

Sample Id: C-28

Matrix:

Date Prep:

Soil

Date Received:08.05.2020 10:28

Lab Sample Id: 669190-001

Analytical Method: Chloride by EPA 300

MAB

MAB

Date Collected: 08.04.2020 12:54

Prep Method: E300P

1 Top Wieth

% Moisture:

08.05.2020 11:26

Basis:

Wet Weight

Seq Number: 3133628

Tech:

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	415	9.98	mg/kg	08.05.2020 12:29		1

Larson and Associates, Inc., Midland, TX

Apache -EBDu #37

Sample Id: C-22

Soil

Date Received:08.05.2020 10:28

Lab Sample Id: 669190-002

Date Collected: 08.04.2020 14:04

Prep Method: E300P

% Moisture:

Tech: M.

Analyst:

MAB MAB

Analytical Method: Chloride by EPA 300

Date Prep: 08.05.2020 11:26

Basis:

Wet Weight

Seq Number: 3133628

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.7	10.0	mg/kg	08.05.2020 12:45		1

Matrix:

Larson and Associates, Inc., Midland, TX

Apache -EBDu #37

Sample Id: C-23 Matrix:

Date Received:08.05.2020 10:28

Lab Sample Id: 669190-003

Soil Date Collected: 08.04.2020 14:12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

MAB Tech:

% Moisture:

MAB Analyst:

Date Prep:

08.05.2020 11:26

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.8	10.1	mg/kg	08.05.2020 12:51		1

Larson and Associates, Inc., Midland, TX

Apache -EBDu #37

Sample Id: C-1

Matrix:

Soil

Date Received:08.05.2020 10:28

Lab Sample Id: 669190-004

Date Collected: 08.04.2020 17:28

RL

10.1

Prep Method: E300P

Tech:

MAB

Analytical Method: Chloride by EPA 300

338

Result

% Moisture:

Wet Weight

Seq Number: 3133628

Parameter

Chloride

MAB Analyst:

Date Prep:

08.05.2020 11:26

Basis:

Units

mg/kg

Flag

Dil

1

Analytical Method: TPH By SW8015 Mod

Cas Number

16887-00-6

Prep Method: SW8015P

Analysis Date

08.05.2020 12:57

Tech: Analyst: DTH DTH

Date Prep:

08.06.2020 10:30

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	08.06.2020 10:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.3	50.3	mg/kg	08.06.2020 10:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	08.06.2020 10:45	U	1
Total TPH	PHC635	< 50.3	50.3	mg/kg	08.06.2020 10:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	08.06.2020 10:45	
o-Terphenyl	84-15-1	112	%	70-135	08.06.2020 10:45	



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



QC Summary 669190

Larson and Associates, Inc.

Apache -EBDu #37

Analytical Method: Chloride by EPA 300

Seq Number: 3133628

7708772-1-BLK

Matrix: Solid

E300P Prep Method:

RPD

20

Date Prep: 08.05.2020

MB Sample Id:

LCS Sample Id: LCS

Spike

200

Amount

7708772-1-BKS

269

LCSD Sample Id: 7708772-1-BSD

Parameter

Chloride

MB Spike Result Amount <10.0 250

LCS Result %Rec 108 270

LCSD LCSD %Rec Result

108

107

110

Limits %RPD 90-110 0

Units Limit mg/kg

Analysis Flag Date 08.05.2020 12:17

Analytical Method: Chloride by EPA 300

Matrix: Soil

Prep Method: 08.05.2020 Date Prep:

E300P

Seq Number: Parent Sample Id: 3133628 669190-001

MS Sample Id: 669190-001 S

MSD Sample Id: 669190-001 SD

20

Parameter

Parent Result

MS MS Result %Rec

629

MSD MSD Result %Rec 629

Limits %RPD 90-110

0

RPD Units Limit

Analysis Flag Date

08.05.2020 12:34

Chloride

Analytical Method: TPH By SW8015 Mod 3133666

415

104

Matrix: Solid

107

Prep Method:

SW8015P

Seq Number: MB Sample Id:

o-Terphenyl

Seg Number:

MB Sample Id:

7708781-1-BLK

LCS Sample Id: 7708781-1-BKS

Date Prep: 08.05.2020 LCSD Sample Id: 7708781-1-BSD

mg/kg

LCS %RPD RPD MR Spike LCS LCSD LCSD Limits Units Analysis Flag **Parameter** Result Limit %Rec Result Amount Result %Rec Date Gasoline Range Hydrocarbons (GRO) 35 08.05.2020 15:25 < 50.0 1000 993 99 1000 100 70-135 1 mg/kg

1040 104 70-135 0 08.05.2020 15:25 Diesel Range Organics (DRO) 1000 1040 35 < 50.0 104 mg/kg MB MB LCS LCS LCSD Units Analysis LCSD Limits Surrogate %Rec Flag %Rec Flag %Rec Flag Date 08.05.2020 15:25 1-Chlorooctane 104 120 120 70-135 %

Analytical Method: TPH By SW8015 Mod

3133751

7708853-1-BLK

Matrix: Solid LCS Sample Id:

112

7708853-1-BKS

Prep Method:

70-135

SW8015P

08.05.2020 15:25

Flag

Flag

Date Prep: 08.06.2020 LCSD Sample Id: 7708853-1-BSD

%

MB Spike LCS LCS LCSD LCSD Limits %RPD RPD Units Analysis **Parameter** Limit Result Result Amount %Rec Result %Rec Date Gasoline Range Hydrocarbons (GRO) 08.06.2020 10:04 <50.01000 1020 102 1030 103 70-135 1 35 mg/kg 08.06.2020 10:04 Diesel Range Organics (DRO) < 50.0 1000 1060 106 1090 109 70-135 3 35 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag %Rec %Rec Flag %Rec Flag Date 08.06.2020 10:04 1-Chlorooctane 107 124 124 70-135 % 08.06.2020 10:04 o-Terphenyl 109 113 116 70-135 %

Analytical Method: TPH By SW8015 Mod

Seq Number: 3133666 Matrix: Solid

Prep Method: Date Prep: SW8015P

MB Sample Id: 7708781-1-BLK

08.05.2020

Parameter

MB Result

Units

mg/kg

Analysis

Date

08.05.2020 15:05

Motor Oil Range Hydrocarbons (MRO)

< 50.0

LCS = Laboratory Control Sample = Parent Result = MS/LCS Result = MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

Page 11 of 15

Final 1.000

Flag

Flag

SW8015P

08.06.2020

SW8015P

Units

Prep Method:

Prep Method:

Date Prep:

QC Summary 669190

Larson and Associates, Inc.

Apache -EBDu #37

Analytical Method: TPH By SW8015 Mod

3133751 Seq Number:

Matrix: Solid

MB Sample Id: 7708853-1-BLK MB

Analysis **Parameter** Result Date

Motor Oil Range Hydrocarbons (MRO) < 50.0 08.06.2020 09:44 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number: 3133666 Matrix: Soil Date Prep: 08.05.2020

669190-001 S MS Sample Id: MSD Sample Id: 669190-001 SD Parent Sample Id: 669190-001

Parent Spike MS MS Limits %RPD RPD Units Analysis **MSD** MSD **Parameter** Flag Result Amount Result %Rec Limit Date Result %Rec Gasoline Range Hydrocarbons (GRO) 08.05.2020 16:26 < 50.0 1000 939 94 915 92 70-135 3 35 mg/kg 08.05.2020 16:26 Diesel Range Organics (DRO) < 50.0 1000 967 97 962 96 70-135 1 35 mg/kg

MS MS MSD MSD Limits Units Analysis Surrogate Flag Flag %Rec Date %Rec % 08.05.2020 16:26 1-Chlorooctane 118 116 70-135 08.05.2020 16:26 106 107 70-135 % o-Terphenyl

Analytical Method: TPH By SW8015 Mod

SW8015P Prep Method: Seq Number: 3133751 Matrix: Soil Date Prep: 08.06.2020

MSD Sample Id: 669190-004 SD Parent Sample Id: 669190-004 MS Sample Id: 669190-004 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	
Gasoline Range Hydrocarbons (GRO)	< 50.1	1000	981	98	946	95	70-135	4	35	mg/kg	08.06.2020 11:05	
Diesel Range Organics (DRO)	< 50.1	1000	1020	102	985	99	70-135	3	35	mg/kg	08.06.2020 11:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		119		70-135	%	08.06.2020 11:05
o-Terphenyl	112		109		70-135	%	08.06.2020 11:05

Final 1.000

CHAIN-OF-CUSTODY

Nº 1258

1089 N Canal Street

Inter-Office Shipment

Inter-Office S	Method Name	TPH by Texas1005
Martha Castro ority:	Method	
58 AM Created by: Delivery Priority: Air Bill No.:	Sample Collection	08.04.2020 17:28 TX1005
## Seceived by OCD: 2/9/2021 11:39:58 AM persons of page 1	Matrix Client Sample Id	S C.
Beceived by OCD: 2/9/2021 Page 1988 Solution 1989 N pi samble Id	M 69190-004	

Cre	Created by:	Martha Castro	Please send report to: Holly Taylor	Holly Taylor
De	Delivery Priority:		Address:	1089 N Canal S
Ai	Air Bill No.:		E-Mail:	holly.taylor@x

01010000
•

Inter Office Shipment or Sample Comments:

Received By:		Date Received:
R		Q
	o	
Mass	Martha Castr	08.06.2020
Relinquished By:		Date Relinquished: 08.06.2
R		D

Cooler Temperature:

Final 1.000
Page 14 of 15

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 08.05.2020 10.28.00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 669190 Temperature Measuring device used : T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		3	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping conta	iner/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	•	Yes	
#6*Custody Seals Signed and dated?		Yes	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	hed/ received?	Yes	
#10 Chain of Custody agrees with sample I	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated	test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headsp	pace?	N/A	

Must be completed for after-hours	delivery of	samples prior	to placing in	the refrigerator

Checklist completed by:	Elizabeth McClellan	Date: <u>08,05,2020</u>	
Checklist reviewed by:	Olian S.	Data: 08 06 2020	

Martha Castro

PH Device/Lot#:

Analyst:

Final 1,000

Page 1 of 42

secerved by OCD: 2/9/2021 11:39:58 AM Environment Testing Secure of the second secon		Certific Lars	ate of Analy	Certificate of Analysis Summary 669750 Larson and Associates, Inc., Midland, TX	y 669750 ıd, TX		Receive 8 fo S61 age
			Project Nan	Project Name: EBOU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Tue 08.11.2020 15:56)20 15:56
Contact: Mark Larson					Repor	Report Date: 08.12.2020 17:13	7:13
Project Location:					Project M	Project Manager: Holly Taylor	
	Lab Id:	669750-001	669750-002	669750-003	669750-004	669750-005	900-02/699
Analysis Domostod	Field Id:	BH-2 10'	BH-2 12'	BH-2 14'	BH-2 16'	BH-2 18'	BH-2 20'
naisanhay sishiniy	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	08.10.2020 11:01	08.10.2020 11:03	08.10.2020 11:05	08.10.2020 11:09	08.10.2020 11:10	08.10.2020 11:11
Chloride by EPA 300	Extracted:	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39
	Analyzed:	08.11.2020 18:27	08.11.2020 18:42	08.11.2020 18:48	08.11.2020 18:53	08.11.2020 18:58	08.11.2020 19:14
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		79.7 4.97	18.4 5.02	10.1 4.98	10 3 4 99	967 496	9 64 4 95

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Released to Imaging: 8/27/2021 10:20:40 AM

Final 1,000

Page 2 of 42

secerved by OCD: 2/9/2021 11:39:58 AM Environment Testing Secerved by OCD: 2/9/2021 11:39:58 AM Secerved by OCD: 2/9/2021 11:39:58 AM		Certific Lars	Certificate of Analysis Summary 669750 Larson and Associates, Inc., Midland, TX	sis Summar tes, Inc., Midlar	y 669750 nd, TX		Receive Stood 1 ass
			Project Nan	Project Name: EBOU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Tue 08.11.2020 15:56	120 15:56
Contact: Mark Larson					Repor	Report Date: 08.12.2020 17:13	7:13
Project Location:					Project Ma	Project Manager: Holly Taylor	
	Lab Id:	669750-007	800-02/699	600-0520-009	669750-010	669750-011	669750-012
Andreis Domostod	Field Id:	BH-2 25'	BH-4 10'	BH-4 12'	BH-4 14'	BH-4 16'	BH-4 18'
Analysis Nequesica	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	08.10.2020 11:20	08.10.2020 13:05	08.10.2020 13:50	08.10.2020 13:55	08.10.2020 14:05	08.10.2020 14:10
Chloride by EPA 300	Extracted:	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39
	Analyzed:	08.11.2020 19:19	08.11.2020 19:25	08.11.2020 19:30	08.11.2020 19:35	08.11.2020 19:40	08.11.2020 19:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.6 4.98	24.0 5.04	12.0 5.01	10 3 4 97	15.0	12.7 5.03

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Released to Imaging: 8/27/2021 10:20:40 AM

Certificate of Analysis Summary 669750

secured by OCD: 2/9/2021 11:39:58 AM selection to the secure of the secu		Certific Lars	ate of Analy	Certificate of Analysis Summary 669750 Larson and Associates, Inc., Midland, TX	y 669750 id, TX		Receiv £ 101 of 1980 d
OTHER			Project Nan	Project Name: EBOU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Tue 08.11.2020 15:56	20 15:56
Contact: Mark Larson					Repor	Report Date: 08.12.2020 17:13	7:13
Project Location:					Project Ma	Project Manager: Holly Taylor	
	Lab Id:	669750-013	669750-014	669750-015	669750-016	669750-017	669750-018
Analysis Pounostod	Field Id:	BH-4 20'	BH-4 25'	BH-3 10'	BH-3 12'	BH-3 14'	BH-3 16'
Analysis nequesieu	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	08.10.2020 14:40	08.10.2020 14:45	08.11.2020 09:50	08.11.2020 09:55	08.11.2020 09:59	08.11.2020 10:00
Chloride by EPA 300	Extracted:	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:39
	Analyzed:	08.11.2020 20:01	08.11.2020 20:17	08.11.2020 20:23	08.11.2020 20:28	08.11.2020 20:33	08.11.2020 20:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.9 5.05	13.4 4.00	30 V VLL	201 777	707 707	207

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Final 1,000

Page 4 of 42

Released to Imaging: 8/27/2021 10:20:40 AM

Secrete by OCD: 1/9/2011 11:39:30 AM se eurofins Environment Testing Xenco		Certifica Larso	ate of Analy son and Associat	ificate of Analysis Summary 669750 Larson and Associates, Inc., Midland, TX	y 669750 nd, TX		Receive fo soll assu
			Project Nan	Project Name: EBOU 37			
Project Id: 19-0112-49					Date Received	Date Received in Lab: Tue 08.11.2020 15:56	120 15:56
Contact: Mark Larson					Repor	Report Date: 08.12.2020 17:13	7:13
Project Location:					Project M	Project Manager: Holly Taylor	
	Lab Id:	669750-019	669750-020	669750-021	669750-022	669750-023	669750-024
Analysis Dogwood	Field Id:	BH-3 18'	BH-3 20'	BH-3 25'	BH-5 10'	BH-5 12'	BH-5 14'
Analysis nequesieu	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	08.11.2020 10:15	08.11.2020 10:20	08.11.2020 10:25	08.11.2020 10:56	08.11.2020 10:58	08.11.2020 11:00
Chloride by EPA 300	Extracted:	08.11.2020 16:39	08.11.2020 16:39	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43
	Analyzed:	08.11.2020 20:44	08.11.2020 20:49	08.11.2020 21:21	08.11.2020 21:36	08.11.2020 21:42	08.11.2020 21:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		89.3 5.02	505 766	32.7 5.01	10.2 4.99	9 94 5 00	9 78 5 04

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Final 1,000

Page 5 of 42

Seceived by OCD: 2/9/2021 11:39:58 AM seceived by OCD: 2/9/2021 11:39:58 AM Environment Testing Xenco		Certific Lar	Certificate of Analysis Summary 669750 Larson and Associates, Inc., Midland, TX	sis Summar tes, Inc., Midlar	y 669750 1d, TX	Received
			Project Nan	Project Name: EBOU 37		
Project Id: 19-0112-49					Date Received in Lab: Tue 08.11.2020 15:56	20 15:56
Contact: Mark Larson					Report Date: 08.12.2020 17:13	7:13
Project Location:					Project Manager: Holly Taylor	
	Lab Id:	669750-025	669750-026	669750-027	669750-028	
Andweis Dogwostod	Field Id:	BH-5 16'	BH-5 18'	BH-5 20'	BH-5 25'	
naisanhau sishinut	Depth:					
	Matrix:	SOIL	SOIL	SOIL	SOIL	
	Sampled:	08.11.2020 11:16	08.11.2020 11:18	08.11.2020 11:20	08.11.2020 11:30	
Chloride by EPA 300	Extracted:	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43	
	Analyzed:	08.11.2020 21:52	08.11.2020 22:08	08.11.2020 22:13	08.11.2020 22:19	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		12.2 5.02	9.30 4.97	9.77 4.96	10.5 4.98	

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 669750

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBOU 37 19-0112-49 08.12.2020

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.12.2020

Project Manager: Mark Larson Larson and Associates, Inc. P. O. Box 50685 Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): 669750

EBOU 37 Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 669750. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 669750 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Sample Cross Reference 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-2 10'	S	08.10.2020 11:01		669750-001
BH-2 12'	S	08.10.2020 11:03		669750-002
BH-2 14'	S	08.10.2020 11:05		669750-003
BH-2 16'	S	08.10.2020 11:09		669750-004
BH-2 18'	S	08.10.2020 11:10		669750-005
BH-2 20'	S	08.10.2020 11:11		669750-006
BH-2 25'	S	08.10.2020 11:20		669750-007
BH-4 10'	S	08.10.2020 13:05		669750-008
BH-4 12'	S	08.10.2020 13:50		669750-009
BH-4 14'	S	08.10.2020 13:55		669750-010
BH-4 16'	S	08.10.2020 14:05		669750-011
BH-4 18'	S	08.10.2020 14:10		669750-012
BH-4 20'	S	08.10.2020 14:40		669750-013
BH-4 25'	S	08.10.2020 14:45		669750-014
BH-3 10'	S	08.11.2020 09:50		669750-015
BH-3 12'	S	08.11.2020 09:55		669750-016
BH-3 14'	S	08.11.2020 09:59		669750-017
BH-3 16'	S	08.11.2020 10:00		669750-018
BH-3 18'	S	08.11.2020 10:15		669750-019
BH-3 20'	S	08.11.2020 10:20		669750-020
BH-3 25'	S	08.11.2020 10:25		669750-021
BH-5 10'	S	08.11.2020 10:56		669750-022
BH-5 12'	S	08.11.2020 10:58		669750-023
BH-5 14'	S	08.11.2020 11:00		669750-024
BH-5 16'	S	08.11.2020 11:16		669750-025
BH-5 18'	S	08.11.2020 11:18		669750-026
BH-5 20'	S	08.11.2020 11:20		669750-027
BH-5 25'	S	08.11.2020 11:30		669750-028

Xenco

Environment Testing

CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: EBOU 37

 Project ID:
 19-0112-49
 Report Date:
 08.12.2020

 Work Order Number(s):
 669750
 Date Received:
 08.11.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 10' Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-001

Soil Date Collected: 08.10.2020 11:01

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: CHE CHE

Date Prep: 08.11.2020 16:39 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.7	4.97	mg/kg	08.11.2020 18:27		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 12'

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-002

Date Collected: 08.10.2020 11:03

Prep Method: E300P

% Moisture:

Tech:

Analyst:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.4	5.02	mg/kg	08.11.2020 18:42		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 14'

14'

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-003

Date Collected: 08.10.2020 11:05

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39

Basis:

Wet Weight

Seq Number: 3134219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.1	4.98	mg/kg	08.11.2020 18:48		1

Matrix:



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 16'

Matrix: Soil Date Received:08.11.2020 15:56

Lab Sample Id: 669750-004

Date Collected: 08.10.2020 11:09

Prep Method: E300P

CHE

% Moisture:

Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	4.99	mg/kg	08.11.2020 18:53		<u> </u>



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 18'

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-005

Date Collected: 08.10.2020 11:10

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39

Basis:

Wet Weight

Seq Number: 3134219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.67	4.96	mg/kg	08.11.2020 18:58		1

Matrix:



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 20'

0' Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-006

Matrix: Soil
Date Collected: 08.10.2020 11:11

08.11.2020 16:39

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.64	4.95	mg/kg	08.11.2020 19:14		1

Xenco

Certificate of Analytical Results 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-2 25'

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-007

Date Collected: 08.10.2020 11:20

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE

CHE

Date Prep:

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	4.98	mg/kg	08.11.2020 19:19		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 10'

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-008

Date Collected: 08.10.2020 13:05

Prep Method: E300P

Analytical Method: Chloride by EPA 300

CHE

% Moisture:

Tech: CHE

Analyst:

Date Prep: 08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.0	5.04	mg/kg	08.11.2020 19:25		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 12' Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-009

Date Collected: 08.10.2020 13:50

Prep Method: E300P

CHE Tech:

% Moisture:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.0	5.01	mg/kg	08.11.2020 19:30		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 14' Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-010

Soil Date Collected: 08.10.2020 13:55

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

CHE Tech:

Analyst:

CHE

Date Prep: 08.11.2020 16:39 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	4.97	mg/kg	08.11.2020 19:35		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 16'

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-011

Date Collected: 08.10.2020 14:05

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.0	5.00	mg/kg	08.11.2020 19:40		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 18'

Matrix: Soil Date Received:08.11.2020 15:56

Lab Sample Id: 669750-012

Analytical Method: Chloride by EPA 300

CHE

Date Collected: 08.10.2020 14:10

Prep Method: E300P

% Moisture:

CHE Tech:

Analyst:

Date Prep:

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	5.03	mg/kg	08.11.2020 19:56		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: **BH-4 20'**

:0'

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-013

Date Collected: 08.10.2020 14:40

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39

Basis:

Wet Weight

Seq Number: 3134219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.8	5.05	mg/kg	08.11.2020 20:01		1

Matrix:



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-4 25'

Matrix:

Date Prep:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-014

Date Collected: 08.10.2020 14:45

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: CHE CHE

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.4	4.99	mg/kg	08.11.2020 20:17		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 10'

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-015

Date Collected: 08.11.2020 09:50

Prep Method: E300P

Prep I

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	774	4.96	mg/kg	08.11.2020 20:23		1	

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 12'

Matrix:

Soil

08.11.2020 16:39

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-016

Date Collected: 08.11.2020 09:55

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	666	4.97	mg/kg	08.11.2020 20:28		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 14'

!**'**

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-017

Date Collected: 08.11.2020 09:59

Prep Method: E300P

Prep Mo

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

Matrix:

08.11.2020 16:39

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	419	4.97	mg/kg	08.11.2020 20:33		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 16'

Analytical Method: Chloride by EPA 300

Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-018

Soil Date Collected: 08.11.2020 10:00

Prep Method: E300P % Moisture:

Tech:

Analyst:

CHE CHE

Date Prep:

08.11.2020 16:39

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.2	4.97	mg/kg	08.11.2020 20:38		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 18'

Analytical Method: Chloride by EPA 300

CHE

Matrix:

Date Prep:

Soil

08.11.2020 16:39

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-019

Date Collected: 08.11.2020 10:15

Prep Method: E300P

% Moisture:

Basis:

Wet Weight

CHE Analyst: Seq Number: 3134219

Tech:

Result **Parameter** Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 89.3 5.02 mg/kg 08.11.2020 20:44 1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 20' Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-020

Soil Date Collected: 08.11.2020 10:20

Prep Method: E300P

% Moisture:

Tech:

Analyst:

CHE

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:39 Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	227	5.05	mg/kg	08.11.2020 20:49		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-3 25'

Analytical Method: Chloride by EPA 300

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-021

Date Collected: 08.11.2020 10:25

Prep Method: E300P

% Moisture:

Tech:

Analyst:

CHE CHE

Date Prep:

08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.7	5.01	mg/kg	08.11.2020 21:21		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 10'

Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-022

Matrix: Soil
Date Collected: 08.11.2020 10:56

Prep Method: E300P

Pre

% Moisture:

Tech:

Analyst:

CHE

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	4.99	mg/kg	08.11.2020 21:36		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 12'

Analytical Method: Chloride by EPA 300

Matrix: Soil Date Received:08.11.2020 15:56

Lab Sample Id: 669750-023

Date Collected: 08.11.2020 10:58

08.11.2020 16:43

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.94	5.00	mg/kg	08.11.2020 21:42		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 14'

Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-024

Date Collected: 08.11.2020 11:00

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep:

08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.78	5.04	mg/kg	08.11.2020 21:47		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 16'

Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-025

Soil Date Collected: 08.11.2020 11:16

Prep Method: E300P

CHE

Tech:

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:43 Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.2	5.02	mg/kg	08.11.2020 21:52		1

Page 413 of 515



Certificate of Analytical Results 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 18' Matrix:

Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-026

Date Collected: 08.11.2020 11:18

Prep Method: E300P % Moisture:

Tech:

Analyst:

CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.30	4.97	mg/kg	08.11.2020 22:08		1

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 20'

3 20'

Matrix: Soil

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-027

Date Collected: 08.11.2020 11:20

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Analytical Method: Chloride by EPA 300

Date Prep: 08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.77	4.96	mg/kg	08.11.2020 22:13		1



Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: BH-5 25'

Matrix:

Date Received:08.11.2020 15:56

Lab Sample Id: 669750-028

Matrix: Soil
Date Collected: 08.11.2020 11:30

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Analytical Method: Chloride by EPA 300

Date Prep:

08.11.2020 16:43

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.5	4.98	mg/kg	08.11.2020 22:19		1



Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

669750 **QC Summary**

Larson and Associates, Inc.

EBOU 37

E300P Analytical Method: Chloride by EPA 300 Prep Method: Seq Number: 3134219 Matrix: Solid Date Prep: 08.11.2020

LCS Sample Id: 7709203-1-BKS LCSD Sample Id: 7709203-1-BSD MB Sample Id: 7709203-1-BLK

MB Spike LCS LCS Limits %RPD RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec %Rec Limit Date Result 20 08.11.2020 18:16 Chloride < 5.00 250 266 106 267 107 90-110 0 mg/kg

Analytical Method: Chloride by EPA 300

Prep Method: E300P 08.11.2020 Seq Number: 3134222 Matrix: Solid Date Prep:

LCS Sample Id: 7709204-1-BKS LCSD Sample Id: 7709204-1-BSD MB Sample Id: 7709204-1-BLK

MB Spike LCS LCS Limits %RPD RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec 08.11.2020 21:10 Chloride < 5.00 250 266 106 265 106 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3134219 Matrix: Soil Date Prep: 08.11.2020 669750-001 S MS Sample Id: MSD Sample Id: 669750-001 SD Parent Sample Id: 669750-001

RPD MS %RPD Parent Spike MS MSD MSD Limits Units Analysis **Parameter** Limit

Result Result %Rec Date Amount Result %Rec 20 08.11.2020 18:32 Chloride 79.7 249 347 107 347 107 90-110 0 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: Seq Number: 3134219 Matrix: Soil Date Prep: 08.11.2020 MS Sample Id: 669750-011 S MSD Sample Id: 669750-011 SD Parent Sample Id: 669750-011

Parent Spike MS MS MSD Limits %RPD **RPD** Units Analysis MSD Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec

90-110 08.11.2020 19:46 Chloride 15.0 250 288 109 289 0 20 110 mg/kg

Analytical Method: Chloride by EPA 300

08.11.2020 Seq Number: 3134222 Matrix: Soil Date Prep: MSD Sample Id: 669700-003 SD Parent Sample Id: 669700-003 MS Sample Id: 669700-003 S

Spike MS RPD Parent MS Limits %RPD MSD MSD Units Analysis Flag **Parameter** Result Amount Result %Rec %Rec Limit Date Result 08.12.2020 09:52 Chloride 7940 2510 10400 98 10500 90-110 20 mg/kg

Analytical Method: Chloride by EPA 300

Prep Method: E300P Seq Number: 3134222 Matrix: Date Prep: 08.11.2020 Soil 669750-021 S MSD Sample Id: 669750-021 SD Parent Sample Id: 669750-021 MS Sample Id:

Parent Spike MS MS MSD Limits %RPD RPD Units Analysis MSD

Flag **Parameter** Limit Result Result %Rec Date Amount Result %Rec 08.11.2020 21:26 Chloride 32.7 251 307 109 305 108 90-110 1 20 mg/kg

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

= Parent Result = MS/LCS Result = MSD/LCSD Result

LCS = Laboratory Control Sample

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Prep Method:

Prep Method:

E300P

E300P

Flag

R	eceiv	ed by	OCD:	1/9/	2025		- 1	1		_	<u></u>	I _	- CZZZ-	L			L					Τ		T			Page	e 419	of 5
LABORATORY: Xcn co	RELINQUISHED BY:(Signature)	RELINQUISHED BY:(Signature)	RELINQUISHED BY:(Signature)	TOTAL 13		2 6-110	'			8 H-6 14	8 H-5 12"		ALCOADON DAMAGO	8H-3 20'	BH-3 18	BH-> 16	BH-> 14	BH-3 12	Field Sample I.D.	MST	TIME ZONE: Time zone/State:	□ Yes No	₹.	Data Reported to:	Environm	arson &	>		
Xenco	BY:(Signatu	BY:(Signatu	BY:(Signatu			6	10	18.	16'	14'	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	,	Supposess examples and a supposession of the s	91	2,		1,	17	Lab		···		S=SOIL W=WATER	to:	Environmental Consultants				
	re)	re)	3 ē										THE RESIDENCE OF THE PROPERTY					8/	# D			~	ATER		ultants				
			8/1				•	-	1	_	70	7	16)0	/6	76	ō	111/20 0	Date			OT=OTHER	P=PAINT SL=SLUDGE						
	DATE/TIME	DATE/TIME	DATE/TIME			1/3	1120	31118	1116	1100	1058	p56	0 25	1020	1015	000	6560	0955	Time			克	DGE						
		m	Ē				 						ALTERNATION OF THE STREET				•	ا م	Matrix							ا د	n O		
	RECEI	RECEI		\$		ŧ							CONTRACTOR OF CONTRACTOR OF					1	# of Co	ntain	ers				4	ou/ N. Marienteia, ste. Midland TX 79701	7		
	RECEIVED BY: (Signature)	RECEIVED BY: (Signature	RESEMBLE (Signature) SY										TOTAL SECTION						HCI HNO ₃		**	,	PRES		432-687-0901	N. Marientela, Ste Midland TX 79701) 5.		
	Y: (Sign	Y: (Sign	(Sign					-					7794-4-100000						H ₂ SO ₄ [) N	aOH [<u> </u>	PRESERVATION		7-090	TY 79	<u>}</u>		
	nature)	nature)	nature										000000000000000000000000000000000000000						ICE UNPRE)	NOIT						
			5																ANA!	La						200	Š		
																			/x0/02	NO.	\			Σ	PR	PO#:	DATE:		
													THE PARTY OF THE P											LAI PRO	PROJEC	# 	ļ Ņ		
	OTHER [1 DAY 📉	TURN AROUND TIME										STOCKWOOD THE STOCKWOOD TO STOCK OF THE STOC										Tools in	JECT#:			8/1		_
	اً ق] X	AROU										NA CONTRACTOR OF THE CONTRACTO							NO.				#	T LOCATION OR NAME:	•	8/11/20	Dec	,
			ND TI																					11 -	ON OF		9	7	*
	· · · · · · · · · · · · · · · · · · ·					-							- Control of the cont					_		10				2//2	NA!			22	
HAND DELIVERED	☐ CAI	CUSTODY SEALS -	LABORATORY USE ONLY:										41347						CALLY.					- 49) _	_		\Box)
ND DE	CARRIER BILL#	DDY SI	RATOR																10/ //	″ ~ ` `	$\gamma_{\lambda} \chi^{\star}$	/~\	\ \ \ \ \ \	41	F	LAB WORK ORDER#			
LIVER	BILL	EALS:	RY US										- VIII						(%) (%)						EBOU	VOR.		Ct	
ED			ל בּמוֹ																	\mathcal{N}	$\mathcal{N}_{\mathcal{O}}$	۶ <u>۲</u> ۲۶	// /	0	0	OR		\forall	
		ROKE S	ر دا د			-													CHOPE					COLLECTOR	37	DER#		Z	
		RECEIVING TEMP: $G = 0$ THERM#: CUSTODY SEALS - \Box BROKEN \Box INTAC	2				-										_			No.		MILI	More	S.			 무	유	
		M#: _																						77			GE	<u>_</u>	N
		T D NOT	1										100 March - Cont. (100 March)						FIELD NOTES	\				TJOS			~	S	
		BROKEN DINTACT DINOTUSED	4																OTES		\			``		ļ	PAGE 2 OF 2	CHAIN-OF-CUSTODY	Õ
R	 eleas	ë ed to l	maai	ne: l	1/9/20	25 3	59:36	PM					VACTO TO A														,,,	DY	

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 08.11.2020 03.56.00 PM

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Work Order #: 669750

Temperature Measuring device used: IR-8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		24.9	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		No	
#4 *Custody Seals intact on shipping contain	ner/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquished	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated to	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headspa	ace?	N/A	

Analyst:		PH Device/Lot#:		
	Checklist completed by:	Brianna Teel	Date: <u>08.11.2020</u>	
	Checklist reviewed by:	thely Taylor Holly Taylor	Date: <u>08.12.2020</u>	

Appendix C

Photographs



Liner in Spill Area 2, facing south.



Seeding backfilled excavation, facing south.



Backfilled excavation, facing west.



Backfilled excavation, facing northeast.



Backfilled excavation, facing east.



Backfilled excavation, facing west.

Page 3 of 3

Appendix D

OCD Communications

From: <u>Billings, Bradford, EMNRD</u>

To: Mark Larson

Cc: Baker, Larry; Robert Nelson

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Date: Tuesday, September 1, 2020 4:10:21 PM

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

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

From: Mark Larson < Mark@laenvironmental.com>

Sent: Tuesday, September 1, 2020 10:48 AM

To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>

Cc: Baker, Larry < Larry.Baker@apachecorp.com>; Robert Nelson < rnelson@laenvironmental.com>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email larry.Baker@apachecorp.com or me if you have questions.

Thank you,

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656

Released to Imaging: 1/9/2025 3:59:36 PM M

Fax – 432-687-0456 mark@laenvironmental.com



From: Mark Larson

Sent: Thursday, August 13, 2020 8:26 AM

To: 'Bradford.Billings@state.nm.us' < <u>Bradford.Billings@state.nm.us</u>>

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Robert Nelson < <u>rnelson@laenvironmental.com</u>>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Sent: Monday, August 10, 2020 10:51 AM **To:** Mark Larson < <u>Mark@laenvironmental.com</u>>

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Robert Nelson < <u>rnelson@laenvironmental.com</u>>

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings EMNRD/OCD

From: Mark Larson < Mark@laenvironmental.com >

Sent: Monday, August 10, 2020 8:49 AM

To: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Robert Nelson <<u>rnelson@laenvironmental.com</u>>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

I am following up on the email below to see if you have had a moment to review.

Thank you,

Mark

From: Mark Larson

Sent: Friday, August 7, 2020 11:45 AM

To: Billings, Bradford, EMNRD < <u>Bradford.Billings@state.nm.us</u>>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Robert Nelson <<u>rnelson@laenvironmental.com</u>>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Mark Larson < <u>Mark@laenvironmental.com</u>>

Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us

Cc: Baker, Larry < Larry.Baker@apachecorp.com >; Rachel Owen < rowen@laenvironmental.com >;

Mark Larson < <u>Mark@laenvironmental.com</u>>

Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,

This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

1RP-5636 2021

First (1st) Quarter **GROUNDWATER MONITORING REPORT** (January - March)

East Blinebry Drinkard Unit #37 Lea County, New Mexico

> Latitude: N 32.47956° Longitude: W -103.12206°

LAI Project No. 19-0112-49

April 20, 2021

Prepared for:

Apache Corporation 303 Veterans Airpark Lane Midland, Texas 79705

Prepared by:

Larson & Associates, Inc. 507 North Marienfeld Street, Suite 202 Midland, Texas 79701

Mark J. Larson, P.G.

Certified Professional Geologist #10490

Daniel A. St. Germain **Staff Geologist**

Samuel &

This Page Intentionally Left Blank

Table of Contents

1.0 Executive Summary	1
2.0 Introduction	
2.1 Background	2
2.2 Monitoring Well Installations	2
3.0 DEPTH TO GROUNDWATER AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION	3
4.0 Groundwater Samples and Analysis	3
4.1 Organic Analysis	4
4.2 Inorganic Analysis	4
5.0 Conclusions	4

Tables

Table 1	Monitor Well Construction and Gauging Summary
Table 2	Groundwater Sample Analytical Data Summary

Figures

Figure 1 Topographic Map

Figure 2 Aerial Map

Figure 3 Groundwater Potentiometric Map, March 11, 2021

Figure 4 Chloride Concentration in Groundwater Map, March 11, 2021 Figure 5 TDS Concentration in Groundwater Map, March 11, 2021

Appendices

Appendix A Initial C-141

Appendix B OCD Communications

Appendix C Boring Logs

Appendix D Laboratory Report

1RP-5636 2021 Groundwater Monitoring Report (January – March) EBDU #37, Lea County, New Mexico April 20, 2021

1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this first quarter groundwater monitoring report on behalf of Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents the 2021 first quarter (January – March) groundwater gauging summary and laboratory analysis of groundwater samples collected from four (4) monitor wells (TMW-1, TMW-2, TMW-3, and TMW-4) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°.

The following groundwater monitoring activities occurred on March 11, 2021:

- Gauged depth to ground water in four (4) monitor wells (TMW-1 through TMW-4).
- Purged and collected groundwater samples from four (4) monitor wells (TMW-1 through TMW-4).
- ➤ Collect groundwater samples from a windmill located south from the Site.
- Analyzed groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), total dissolved solids (TDS), and chloride.

The following observations are documented in this report:

- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- Groundwater flow was from north to south at gradients between 0.0012 feet per foot (ft/ft) and 0.0019 ft/ft.
- ➤ BTEX was not reported above the analytical method reporting limits (RL) or New Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples collected on March 11, 2021.
- Chloride was reported above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in groundwater samples collected from wells TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L).
- TDS was reported above the WQCC domestic water quality standard of 1,000 mg/L in the groundwater sample collected from well TMW-4 (1960 mg/L).

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, TDS, and chloride. Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 5 working days prior to each groundwater monitoring event. OCD will be notified immediately upon receipt laboratory analysis with significant increase of analyte concentrations.

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI), on behalf of Apache Corporation (Apache), has prepared this first quarter groundwater monitoring report for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents the first quarter laboratory analysis of groundwater samples collected from monitor wells (TMW-1, TMW-2, TMW-3, TMW-4) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic

1RP-5636 2021 Groundwater Monitoring Report (January – March) EBDU #37, Lea County, New Mexico April 20, 2021

position is North 32.479569° and West -103.122061°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

2.1 Background

The spill originated from a flowline at a pipeline junction located about 720 feet east from Well #37. Produced fluids (oil and water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown. The spill is designated as a major release due to the unknown volume of the release. The spill covered an area measuring about 31,320 square feet or about 0.72 acres. The initial C-141 was submitted on July 26, 2019 and was assigned remediation permit number 1RP-5636. Appendix A presents the initial C-141.

On October 29, 2019, Apache submitted to the OCD a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico, October 29, 2019". On December 23, 2019, OCD approved an addendum to the remediation plan based on a telephone call on December 20, 2019, with the following conditions:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered.
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs.
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient.
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019.
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20-mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil.
- Seed Area 1 and Area 2 following remediation according to landowner requirement.
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Appendix B presents the OCD communications.

2.2 Monitoring Well Installations

On September 29, 2019, Scarborough Drilling Inc. (SDI), under LAI supervision, installed two (2) monitoring wells (TMW-1 and TMW-2) under permits issued by the State of New Mexico Office of the State Engineer. Monitoring wells TMW-3 and TMW-4 were repositioned to avoid removing thick vegetation and/or crossing underground pipelines. Monitoring well TMW-3 was repositioned about 100 feet west from its original location. Monitoring well TMW-4 was repositioned about 30 feet east from its original location. OCD approved the relocation of the monitoring wells September 22, 2020. Appendix B presents OCD communications.

1RP-5636

2021 Groundwater Monitoring Report (January – March) EBDU #37, Lea County, New Mexico April 20, 2021

Monitoring wells TMW-3 and TMW-4 were drilled to approximately 68.41 feet bgs and 70.09 feet bgs, respectively. Both wells were completed with two (2) inch threaded schedule 40 PVC casing and approximately twenty (20) feet of 0.01-inch factory slotted screen. The screens were positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the well screens to about two (2) feet above the screens. The remaining annulus above the screens was filled to about 1-foot bgs with bentonite chips and hydrated with potable water. The wells are secured with locking steel covers.

The monitor wells (TMW-1 through TMW-4) were surveyed by West Company, a State of New Mexico Licensed Professional Land Surveyor (LPS Number 23263) for geodetic position and elevation, including surface elevation and top of casing (TOC) elevation. Figure 2 presents the monitoring well locations. Appendix C presents the boring logs and monitoring well completion records.

3.0 DEPTH TO GROUNDWATER AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION

On March 11, 2021, depth to groundwater was gauged in wells TMW-1 through TMW-4. Groundwater was measured at 49.41 (TMW-1), 58.0 (TMW-2), 57.59 (TMW-3), and 57.4 (TMW-4) feet below top of casing (TOC). The groundwater potentiometric surface elevation ranged from 3,366.16 feet above mean sea level (MSL) at TMW-2 (up gradient) to 3,365.16 above MSL at TMW-1 (down gradient). Groundwater flow from north to south at gradients between 0.0012 feet per foot (ft/ft) and 0.0019 ft/ft.

No significant changes in potentiometric surface elevation, flow direction, or gradient were observed on March 11, 2021. Figure 3 presents the groundwater potentiometric surface map on March 11, 2021. Table 1 presents monitor well construction and gauging summary.

4.0 GROUNDWATER SAMPLES AND ANALYSIS

On March 10, 2021 LAI personnel collected groundwater samples from monitoring wells TMW-1 through TMW-4, using the low stress or low flow method following EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low flow rate until environmental parameters stabilize.

Groundwater samples were collected from discharge through dedicated disposable Tygon tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and laboratory grade detergent (alconox) and rinsed with distilled water. The samples were transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody control to Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Midland, Texas. A duplicate sample was collected from the windmill for laboratory quality assurance and quality control (QA/QC).

Xenco analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, total dissolved solids (TDS) by Method SM 2540C, and chloride by EPA Method 300. Table 2 presents the laboratory analytical summary. Appendix B presents the laboratory report.

1RP-5636 2021 Groundwater Monitoring Report (January – March) EBDU #37, Lea County, New Mexico April 20, 2021

4.1 Organic Analysis

Xenco reported BTEX concentrations below the laboratory analytical reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples from TMW-1 through TMW-4 and windmill March 11, 2021. The results are consistent with the results from previous groundwater monitoring events.

4.2 Inorganic Analysis

Chloride concentrations remain above the WQCC domestic water quality standard (250 mg/L) in samples collected from monitoring wells TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L). Chloride concentrations were below WQCC domestic water quality standards in monitoring wells TMW-1 (10.9 mg/L) and TMW-2 (213 mg/L), and consistent with previous monitoring events. The duplicate (QA/QC) sample (Dup-1) collected from the windmill is within 2.8 percent (259 mg/L) of the original chloride value (252 mg/L) for the windmill. No data quality exceptions were noted in Xenco case narratives. Figure 4 presents the chloride isopleth map for March 11, 2021.

TDS concentrations remain above the WQCC domestic water quality standard (1,000 mg/L) in samples collected from TMW-2 (1,000 mg/L) and TMW-4 (1,960 mg/L). TDS concentrations remain below the WQCC domestic water quality standards in monitoring wells TMW-1 (360 mg/L), TMW-3, (900 mg/L), and the windmill (745 mg/L). Figure 5 presents the TDS isopleth map for March 11, 2021.

5.0 CONCLUSIONS

The following observations are made in this report:

- The groundwater flow direction was from north to south at gradients between approximately 0.0012 and 0.0019 ft/ft.
- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- BTEX was reported below the analytical reporting limit and WQCC human health standards in groundwater samples collected from TMW-1 through TMW-4.
- Chloride concentrations were reported above WQCC domestic water quality standard (250 mg/L) in groundwater samples collected from TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in groundwater samples collected from TMW-2 (1,000 mg/L) and TMW-4 (1,960 mg/L).
- Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS.

Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The OCD will be notified immediately upon receipt of laboratory analysis with significant increase of analyte concentrations.

Tables

Monitoring Well Completion and Gauging Summary Apache Corportaion, EBDU #37 Lea County, New Mexico 1RP-5636 Table 1

			Well	Well Information							Groundwater Data	ter Data	
	Date	Well Denth	Drilled	Well	Surface	Screen	Casing	TOC		Depth to	Depth to	Water	Groundwater
Well No.	השני	Veli Deptil	Depth	Diameter	Elevation	Interval (Feet	Stickup	רוביימנוטוו	Date Gauged	Water	Water		Elevation
	Drilled	(Feet IOC)	(Feet BGS)	(inches)	(Feet AMSL)	BGS)	(Feet)	(Feet AMSL)		(feet TOC)	(feet BGS)	Heignt (feet)	(feet AMSL)
TMW-1	09/19/2019	74.36	71.00	2	3411.21	42.32 - 61.97	3.36	3,414.57	09/23/2019	46.18	42.82	28.18	3,368.39
					_				12/26/2019	48.90	45.54	26.27	3,365.67
					_				09/30/2020	49.31	45.95	25.05	3,365.26
					_				12/07/2020	49.42	46.06	24.94	3,365.15
									03/11/2021	49.41	46.05	24.95	3,365.16
TMW-2	09/19/2019	82.86	80.00	2	3421.30	47.50 - 67.50	2.86	3,424.16	09/23/2019	55.80	52.94	27.06	3,368.36
					_				12/26/2019	57.50	54.64	25.36	3,366.66
					_				09/30/2020	58.01	55.15	24.85	3,366.15
					_				12/07/2020	58.08	55.22	24.78	3,366.08
									03/11/2021	58.00	55.14	24.86	3,366.16
TWM-3	09/29/2020	71.29	68.41	2	3420.33	49.96 - 68.41	2.88	3,423.21	09/23/2019	1	1	1	+
					_				12/26/2020	1	ŀ	1	1
					_				09/30/2020	57.62	54.74	13.67	3,365.59
					_				12/07/2020	57.68	54.80	13.61	3,365.53
									03/11/2021	57.59	54.71	13.70	3,365.62
TMW-4	09/29/2020	73.25	70.09	2	3420.03	49.96 - 69.76	3.16	3,423.19	09/23/2019	-	1	1	1
					_				12/26/2019	1	1	1	1
					_				09/30/2020	57.39	54.23	15.86	3,365.80
					_				12/07/2020	57.45	54.29	15.80	3,365.74
									03/11/2021	57.40	54.24	15.85	3,365.79

Notes: monitoring wells installed by Environ-Drill, Albuquerque, New Mexico with 2 inch schedule 40 PVC casing and screen

bgs: below ground surface

TOC: top of casing AMSL: denotes elevation in feet above mean sea level

1RP-5636
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU 37, Lea County, New Mexico

Table 2

(2) 09/23/2019	Sample	Collection	Benzene	Toluene	Ethylbenzene	Xylenes	Chloride	TDS	Depth To
Windmill (') 08/01/2019 <0.001 <0.001 <0.001 <0.003 232 732 <0.001 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.002		Date	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	Water
(2) 09/23/2019	NMWQCC Stand	ard:		*1	*0.7	*0.62	**250	**1,000	(Feet TOC)
(2) 12/26/2019 <0.000800 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0	Windmill	(') 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	
(3) 09/30/2020 0.00200 0.00200 0.00200 0.00200 274 730		(²) 09/23/2019							
(3) 12/07/2020 (0.00200 (0.		(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	
(3) 03/11/2021 <0.00200 <0.00200 <0.00200 <0.00400 252 745		(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	
TMW-1 (2) 09/23/2019		(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	
(2) 12/26/2019 <0.000800 <0.00200 <0.00200 <0.00200 <2.6 390 48.9 <49.31 <3 09/30/2020 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <2.6 390 49.31 <3 30.311/2021 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.		(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	
(2) 12/26/2019 <0.000800 <0.00200 <0.00200 <0.00200 <2.6 390 48.9 <49.31 <3 09/30/2020 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <2.6 390 49.31 <3 30.311/2021 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.	TMW-1	(²) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
(3) 09/30/2020 0.00200 0.00200 0.00200 0.00200 22.6 390 49.31 383 49.42 303/11/2021 0.00200 0.00200 0.00200 0.00200 13.1 383 49.42 49.42 4	110100 I	1, ,				l			
(3) 12/07/2020 0.00200 0.00200 0.00200 0.00200 13.1 383 49.42 360		1				l			
(3) 03/11/2021 <0.00200 <0.00200 <0.00400 10.9 360		_				l			l .
TMW-2 (2) 09/23/2019		1 ' '							
(²) 12/26/2019									
(3) 09/30/2020	TMW-2	(²) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	55.8
(3) 12/07/2020 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00200 (0.00400 (0.		(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	57.5
TMW-3 09/23/2019		(³) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	58.01
TMW-3 09/23/2019		(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	58.06
12/26/2019		(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	293	1,000	
12/26/2019									
(3) 09/30/2020 (3) 09/30/2020 (3) 000200 (3) 000322 (3) 000200 (3) 12/07/2020 (3) 03/11/2021 (3) 03/11/2021 (4) 000200 (4)	TMW-3	09/23/2019							
(3) 12/07/2020 <0.00200 <0.00200 <0.00200 <0.00200 214 948 57.68									
TMW-4 O9/23/2019 12/26/2019 (³) 09/30/2020 <0.00200 <0.00200 <0.00200 <0.00400 213 900 TMW-4 O9/23/2019 12/26/2019 (³) 09/30/2020 <0.00200 0.00314 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00400 834 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.00400 <0.		l''		0.00322	<0.00200	0.00448	212	891	57.62
TMW-4		l'_'	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
12/26/2019		(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	
(3) 09/30/2020 <0.00200 0.00314 <0.00200 <0.00200 1,020 2,040 57.39 (3) 12/07/2020 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00400 834 1,960	TMW-4	09/23/2019							
(3) 12/07/2020 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00200 <0.00400 834 1,960		12/26/2019							
(3) 03/11/2021 <0.00200 <0.00200 <0.00200 <0.00400 834 1,960		(³) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	57.39
DUP-1 (Windmill) (³) 09/30/2020 <0.00200 <0.00200 <0.00200 <0.00200 794 DUP-1 (Windmill) (³) 12/07/2020 <0.00200		(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	987	2,300	57.45
DUP-1 (Windmill) (3) 12/07/2020 <0.00200 <0.00200 <0.00200 <0.00200 278 908		(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	834	1,960	
DUP-1 (Windmill) (3) 12/07/2020 <0.00200 <0.00200 <0.00200 <0.00200 278 908	DLIP-1 (Mindmill)	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	276	79/1	
		1''				l			<u> </u>
736 1 (WINGININ) 7 03/11/2021 0.00200 0.00200 0.00400 233 736 1									<u> </u>
	DOI -I (WIIIIIIIII)	() 03/11/2021	\0.00200	~0.00200	\0.00200	10.00400	233	730	

Table 2 1RP-5636

Groundwater Sample Analytical Data Summary Apache Corporation, EBDU 37, Lea County, New Mexico

Notes:

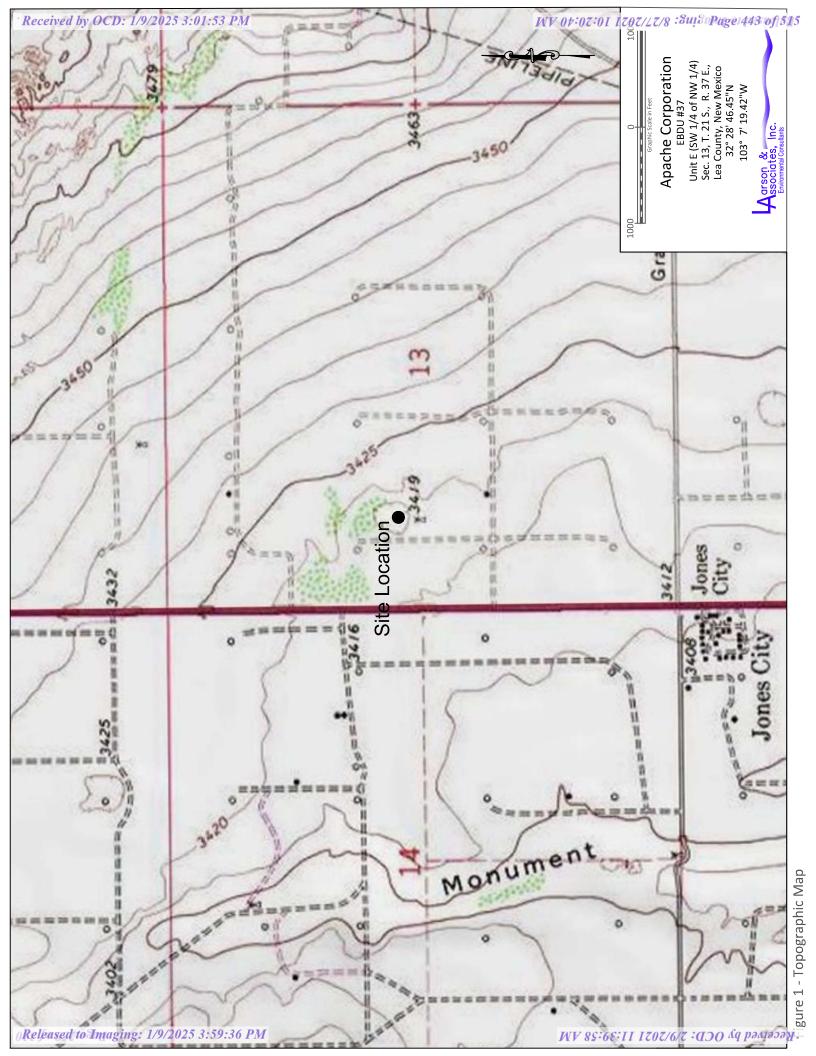
- ('): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).
- (²): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
- (3): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
- (4): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride). Units reported as ug/L in report, converted to mg/L.
- < values: concentration is less than method reporting limit (RL).
- *: NMWQCC Human Health Standard
- **: NMWQCC Domestic Water Quality Standard
- --: no data available

TOC: top of casing

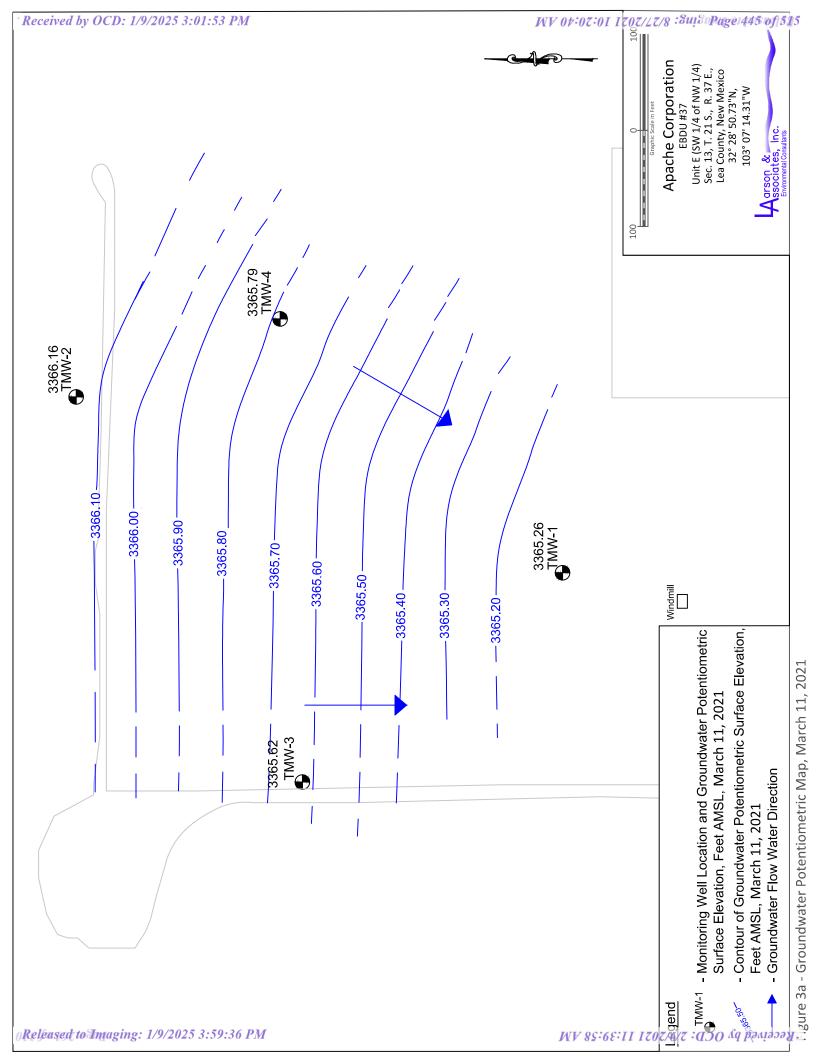
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)

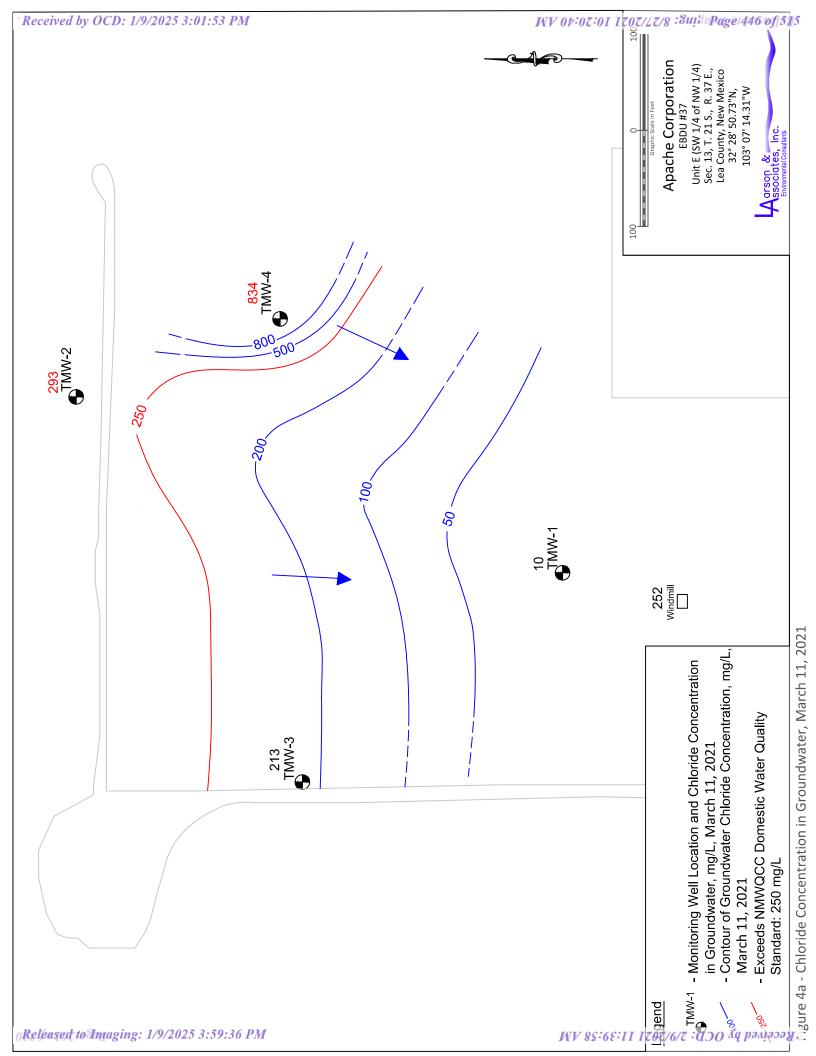
Bold and highlighted denotes analyte concentration exceeds NMWQCC domestic water quality standard

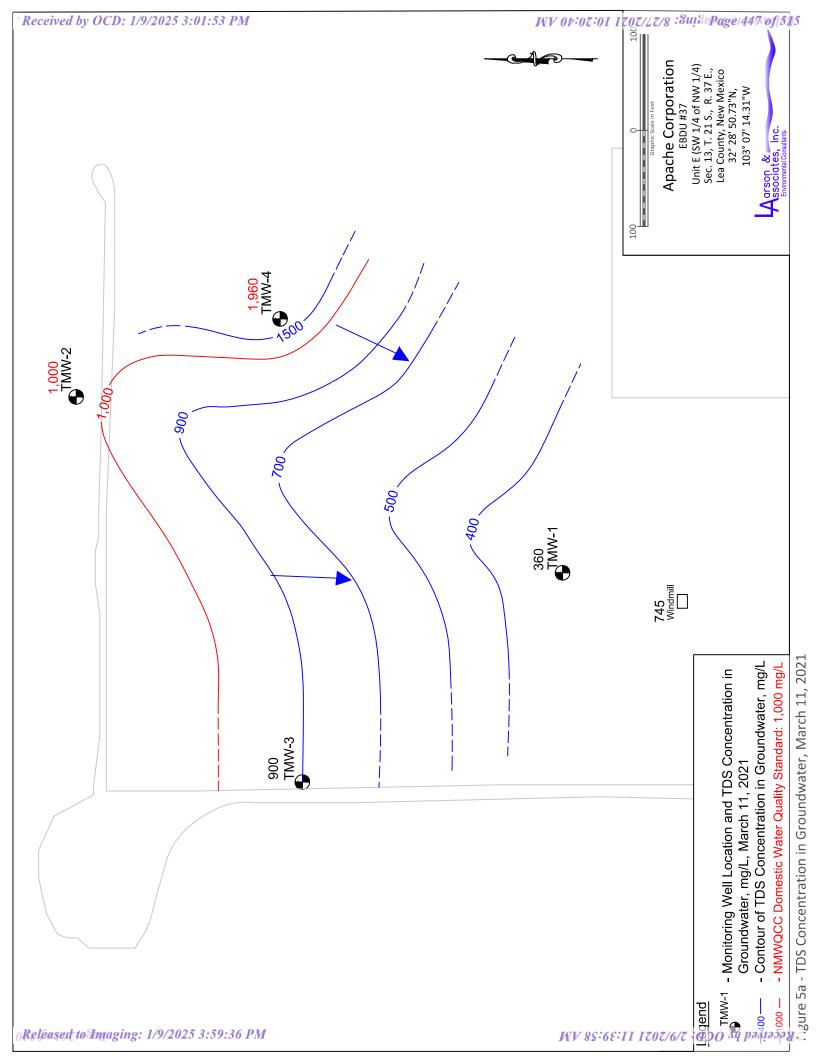
Figures











Appendix A

Initial C-141

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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # (assigned by OCD)
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM	
88240	

Location of Release Source

Latitude: <u>W 32.4807053</u> Longitude: <u>N -103.123085</u>

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: E	BDU #37 W	VIW			Site Type: Water Injection	on Well		
Date Release	Discovered	: July 14, 2019			API # 3002506556			
	I a .							
Unit Letter	Section	Township	Range		County			
Е	12	21S	37E	LEA				
Surface Owne	r: State	☐ Federal ☐ T	`ribal ⊠ Private	(Name:	William Stephens)			

Nature and Volume of Release

Materia	al(s) Released (Select all that apply and attach calculations or specifi	c justification for the volumes provided below)
Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride 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		
Isolation valve failure du	ue to internal corrosion.	

Received by OCD: 1/9/2025 3:01:53 PMM State of New Mexico Page 2 Oil Conservation Division Page 450 of 515

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

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?
TAXING 1	
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? CD by Bruce Baker, Senior Environmental Technician, Apache Corporation
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
The source of the rele	ase has been stopped.
The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
	coverable materials have been removed and managed appropriately. d above have not been undertaken, explain why:
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environr failed to adequately investig	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Jeff Broom	Title: Environmental Technician
Signature:	Date: <u>07/24/2019</u>
Email: <u>Jeffrey.Broom@a</u>	pachecorp.com Telephone: (432) 664-4677
OCD Only	
Received by: <u>Dylan Ro</u>	Date: 08/09/2019

Appendix B

OCD Communications

From: <u>Billings, Bradford, EMNRD</u>

To: Mark Larson

Cc: <u>Baker, Larry</u>; <u>Rachel Owen</u>

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Date: Monday, December 23, 2019 3:21:06 PM

12/23/2019

Apache Corp. – Larry Baker Larson Environmental

RE: 1RP-5636/EBDU #37, the following:

The attached/stringed email as an addendum to offered Work Plan is approved, including the location of proposed monitor wells, as was discussed recently on the telephone.

Please keep a copy of this communication for your records, as NO paper copy will follow. It may take some days for this to be uploaded to The Oil Conservation Division (OCD) data base,

ODE appreciates your efforts.

Sincerely,

Bradford Billings EMNRD/OCD Santa Fe, NM

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

From: Mark Larson < Mark@laenvironmental.com>

Sent: Monday, December 23, 2019 12:58 PM

To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>

Cc: Baker, Larry < Larry.Baker@apachecorp.com>; Rachel Owen < rowen@laenvironmental.com>;

Mark Larson < Mark@laenvironmental.com>

Subject: [EXT] Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford.

This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G. President/Sr. Hydrogeologist 507 N. Marienfeld St., Suite 202 Midland, Texas 79701 Office - 432-687-0901 Cell - 432-556-8656 Fax - 432-687-0456

mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: <u>Billings, Bradford, EMNRD</u>

To: Mark Larson

Cc: Baker, Larry; Robert Nelson

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Date: Tuesday, September 1, 2020 4:10:21 PM

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

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

From: Mark Larson < Mark@laenvironmental.com>

Sent: Tuesday, September 1, 2020 10:48 AM

To: Billings, Bradford, EMNRD < Bradford. Billings@state.nm.us>

Cc: Baker, Larry < Larry.Baker@apachecorp.com>; Robert Nelson < rnelson@laenvironmental.com>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email larry.Baker@apachecorp.com or me if you have questions.

Thank you,

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656

Fax – 432-687-0456 mark@laenvironmental.com



From: Mark Larson

Sent: Thursday, August 13, 2020 8:26 AM

To: 'Bradford.Billings@state.nm.us' < <u>Bradford.Billings@state.nm.us</u>>

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Robert Nelson < <u>rnelson@laenvironmental.com</u>>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Sent: Monday, August 10, 2020 10:51 AM **To:** Mark Larson < <u>Mark@laenvironmental.com</u>>

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Robert Nelson < <u>rnelson@laenvironmental.com</u>>

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings EMNRD/OCD

From: Mark Larson < Mark@laenvironmental.com >

Sent: Monday, August 10, 2020 8:49 AM

To: Billings, Bradford, EMNRD < Bradford.Billings@state.nm.us>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Robert Nelson <<u>rnelson@laenvironmental.com</u>>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

I am following up on the email below to see if you have had a moment to review.

Thank you,

Mark

From: Mark Larson

Sent: Friday, August 7, 2020 11:45 AM

To: Billings, Bradford, EMNRD < <u>Bradford.Billings@state.nm.us</u>>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Robert Nelson <<u>rnelson@laenvironmental.com</u>>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Mark Larson < <u>Mark@laenvironmental.com</u>>

Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Rachel Owen < <u>rowen@laenvironmental.com</u>>;

Mark Larson < Mark@laenvironmental.com >

Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,

This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from
 the boring to be placed in the bottom of the excavation, by filling the excavation to
 approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at
 approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: <u>Billings, Bradford, EMNRD</u>

To: Mark Larson

Cc: Baker, Larry; Robert Nelson

Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Date: Monday, August 10, 2020 11:03:12 AM

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings EMNRD/OCD

From: Mark Larson < Mark@laenvironmental.com>

Sent: Monday, August 10, 2020 8:49 AM

To: Billings, Bradford, EMNRD < Bradford. Billings@state.nm.us>

Cc: Baker, Larry < Larry.Baker@apachecorp.com>; Robert Nelson < rnelson@laenvironmental.com>

Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

I am following up on the email below to see if you have had a moment to review.

Thank you,

Mark

From: Mark Larson

Sent: Friday, August 7, 2020 11:45 AM

To: Billings, Bradford, EMNRD < <u>Bradford.Billings@state.nm.us</u>>

Cc: Baker, Larry <<u>Larry.Baker@apachecorp.com</u>>; Robert Nelson <<u>rnelson@laenvironmental.com</u>>

Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G. President/Sr. Hydrogeologist 507 N. Marienfeld St., Suite 202 Midland, Texas 79701 Office - 432-687-0901 Cell – 432- 556-8656 Fax - 432-687-0456 mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Mark Larson < <u>Mark@laenvironmental.com</u>> Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us

Cc: Baker, Larry < <u>Larry.Baker@apachecorp.com</u>>; Rachel Owen < <u>rowen@laenvironmental.com</u>>;

Mark Larson < Mark@laenvironmental.com >

Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,

This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from
 the boring to be placed in the bottom of the excavation, by filling the excavation to
 approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at
 approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432-556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

Appendix C

Boring Logs

				BORING	RECORE					
		Start: 11	:40	NO	907	Surface Ele TOC Eleca				REMARKS
GEOLOGIC	DEPTH	Finish: 1	2:58	DESCRIPTION USCS			Vented Cap		<u> </u>	BACKGROUND
UNIT		DESC	CRIPTION LITHOLOGIC	SCF	GRAPHIC		Riser Bentonite		ᆙ	PID READING
		520	oral Hora Emmocoolo	Ä	GR/		Bentonite	NUMBER	凯	SOIL:PPM
	0	Silty Cla	y, 7.5YR, 5/1, Gray,	CL					Ϊ.	_
	_	1 -	ne Grained Quartz						1	
	5 —	Sand, D		/Calich	е					
		1	, 7.5YR, 7/1 to 7/2, Gray, Sandy, Fine to						5	-
	_	II.	ne Grained Quartz]
	10—	Sand, D								
	_		nd, 10YR, 6/4, Light	_ sw					10	
	_		sh, Very Fine to							-
	15		ained Quartz Sand,]
	_		Sorted, Subrounded,						15	
	_	Loose	6/6 Daddiah Vallau							_
	20	4	6/6, Reddish Yellow 0', Poorly Sorted,							_
	-	Round	o, roony Sorteu,	1	19		Sodium		20]
	_	11	7/4, Very Pale Brown				Bentonite			
	25—	Below 1	5'	_						
	_		'R, 5/6 to 6/6,	SW					25	_
			h Red to Reddish							7
	30—		/ery Fine Grained							
	_		and, Poorly Sorted, Moist, Very Moist						30	
	35—	Below 35								
	_		ne, 5YR, 6/6, Reddish							_
	_		/ery Fine Grained	'	V				35	-
	40—		and,Poorly Sorted,			40.00]
	=	4	ely Well Cemented to			42.32	_ 💹			
	=	Well Cer	nented				Graded		40	
46.72	45			Sand			─ Si l ica Sand — •			
	_			Ston	€		<u> </u>			_
<u> </u>							2" Sch. 40		45	-
	50—						PVC Threaded			
	=						0.0.0" Slotted			
	55—			_			Screw			-
	-	11	Sand, 7.5YR, 6/6,	\			<u> </u>			
	-	II .	Yellow, Fine to Mediu	u	14 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -		_ 🔛]
	60—		Quartz Sand, Round,	SP	8 8		<u> </u>		60	_
	_		to 40mm ΓD: 62'	- 31		61.97 62.65	Cap			-
	=	'	15.02]
	VE CONTINI	JOUS AUGER S	SAMPLER \\(\lambda/\lambda\text{TED}\)	TARLE / TIM	E OF BORING	, JOB NUM	IBER : Apache	Cor	p./	19-0112-49
		ENETRATION T		TABLE (TIM		')	AMETER :	5"		
	NDISTURBEI	D SAMPLE	_		DNS/ SQ. FT)					
w	ATER TABLI	E (24 HRS)	NR NO REC		,		OGIST : M. La	rsor	<u>1</u>	
↑arson & =			DRILL DATE :		NUMBER:	DRILLING	CONTRACTOR	₹:		
Aarson & ssociates, I	nc. ants		9-19-2019		/IVV-1	DRILLING	METHOD :	SR/W	'R	

Start: 15:02 GEOLOGIC DEPTH Finish: 15:55 DESCRIPTION LITHOLOGIC UNIT O Sitty Clay, 10YR, 5/6, Ash CL Brown, Dry Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand Caliche Sitty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sorted, Dry SM Souther Souther Continue* Water raste; time of Borning Lesonarous territocation Sitty Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Water raste; time of Borning Lesonarous territocation Finish: 15:05 Souther					BORING	RECORD	
15:02 15:02 15:02 15:02 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:05 15:0			Start: 15	5:02	NO	00	
15:02 15:02 15:02 15:02 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:05 15:0		DEPTH	Finish:	15:55	RIPTI	 	
15:02 15:02 15:02 15:02 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:03 15:05 15:0	UNIT		DESC	CRIPTION LITHOLOGIC		API	Bentonite Soll:
15.02 15.02 15.02 15.02 15.02 15.02 15.02 15.03 15.03 15.03 15.03 15.03 15.03 15.03 15.03 15.05 15.0					👸	G. I	
Brown, Dry Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Noerrate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 STANDARD FENETRATION TEST LABORATORY TEST LOCATION JOB NUMBER: Agazine Corp. / 19-0112-49 HOLE DIAMETER: 5" HOLE DIAMETER: 5" LABORATORY TEST LOCATION JOB NUMBER: Agazine Corp. / 19-0112-49 HOLE DIAMETER: 5" HOLE DIAMETER: 5" LABORATORY TEST LOCATION JOB NUMBER: Agazine Corp. / 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37		0 —	Silty Cla	av 10YR 5/6 Ash	CI	12.2.2	
Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry ONE CONTINUOUS AUGUS SAMPLE WATER TABLE (TIME OF BORNO) A 15:30 STANDARD PENETRATION TEST LOADINGTON LABORATORY TEST LOADINGTON LEBDU #37		_	-	-	CL		
White, Sandy to Moderate Very Fine Grained Quartz Sand Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SM Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW Sodium Bentonite Sodium Bentonite 15:10 Sodium Bentonite 15:17 Sodium Bentonite 15:22 Sodium Bentonite 15:23 Sodium Bentonite 15:28 Sodium Bentonite Sodium Bentonite 15:28 Sodium Bentonite Sodium				-	\neg		
Very Fine Grained Quartz Sand Salty Sand, 7,5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sw Sodium Bentonite Ji5:15 Sodium Bentonite Ji5:17 Sodium Bentonite Ji5:22 Sw Ji5:23 Graided Sind Sind Sind Sind Sind Sind Sind Sin							
Very Fine Grained Quartz Sand Sand Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sw Sodium Benfonite 15:15 Sand, 5YR, 6/6, Reddish Yellow, Norderate Well Cemented, Poorly Sorted, Dry Sw A5.5 Sodium Benfonite 15:22 Sw 15:23 This 23 This 23 This 24 This 25 This 25 This 25 This 25 This 26 Th		5 —					15:03
15:05 15:05		_		ne Grained Quartz			
Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SM Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Commented, Poorly Sorted, Dry SW 45.5 Silco Sil		_	Sand		Calich	e 	
Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SM Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Commented, Poorly Sorted, Dry SW 45.5 Silco Sil		_					
Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SM Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Commented, Poorly Sorted, Dry SW 45.5 Silco Sil		_					
15		10 —					
15		_					
15		_	Cilty Co	nd 7 EVD 7/2		1	
Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS) SO, FT) UNDISTURBED SAMPLE LABORATORY TEST LOCATION LABORATORY TEST LOCATION LOCATION EBDU #37		_	•				
Granded Quartz Sand, Poorly Sorted, Dry Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 One continuous auger sampler Standard Penetration Test Laboratory Test Location Unidisturged Sample To Not Continuous Auger Sampler Water Table (Time of Boring) Standard Penetration Test Laboratory Test Location Unidisturged Sample Standard Penetration Test Laboratory Test Location Unidisturged Sample Standard Penetration Test Laboratory Test Location Laboratory Test Location Unidisturged Sample Silica Sand HOLE DIAMETER: S" LOCATION EBDU #37		15					
Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry 30 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 47.5 Graded Salica Sali		15—					
Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry 30 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETROMETER (TIME OF BORING) UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37			Sorted,	Dry	SM		
Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry 30 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 46 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow,					Oivi		
Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry 30 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 46 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 47 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow, Moderate Well Cemented, Poorly Sorted, Dry 48 Sandardow,		_					
Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW 15:17 15:22		20					15:15
Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry SW 15:17 15:22		_					
Yellow, Very Fine Graned Quartz Sand, Poorly Sorted, Dry 15:17 15:17		_	Sand, 5	YR, 6/0, Reddish			
15:17 15:17 15:17 15:17 15:17 15:17 15:17 15:22 15:22 15:23 15:23 15:23 15:23 15:23 15:23 15:28 15:28 15:28 15:28 15:28 15:30 15:3		_					Bentonite
30		<u> </u>		•			
30		25		ound, roomy contou,			
SW 35		_	ыу				
SW 40 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION UNDISTURBED SAMPLE 15:23 15:28 47.5 Graded Silica Sand For Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LOCATION: EBDU #37		_					
SW 35							
SW 35		30_					15:22
35		_			sw		
40 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand *Continue* ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE 15:28 15:28 15:28 15:28 47.5 Graded Silica Sand Sand HOLE DIAMETER: 5" LOCATION: EBDU #37		_					
40 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand *Continue* ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE 15:28 15:28 15:28 15:28 47.5 Graded Silica Sand Sand HOLE DIAMETER: 5" LOCATION: EBDU #37		_					
40 Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 Sand ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE 15:28 15:28 15:28 15:28 15:28 15:30 47.5 Graded Silica Sand Sand HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		_					
Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE Sand, 5YR, 6/6, Reddish Yellow, Moderate Well SW 45.5 Graded Silica Sand JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		35					
Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE Sand, 5YR, 6/6, Reddish Yellow, Moderate Well SW 45.5 Graded Silica Sand JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		_					
Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE Sand, 5YR, 6/6, Reddish Yellow, Moderate Well SW 45.5 Graded Silica Sand JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		_					
Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE Sand, 5YR, 6/6, Reddish Yellow, Moderate Well SW 45.5 Graded Silica Sand JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		_					
Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry 45 ONE CONTINUOUS AUGER SAMPLER STANDARD PENETRATION TEST UNDISTURBED SAMPLE Sand, 5YR, 6/6, Reddish Yellow, Moderate Well SW 45.5 Graded Silica Sand JOB NUMBER: Apache Corp. / 19-0112-49 HOLE DIAMETER: 5" LABORATORY TEST LOCATION LOCATION: EBDU #37		40_					15:28
Cemented, Poorly Sorted, Dry 45			Sand, 5	YR, 6/6, Reddish		19	
SW 45.5 *Continue* ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) SW 45.5 Graded Silica Sand JOB NUMBER : Apache Corp. / 19-0112-49 HOLE DIAMETER : 5" LOCATION : EBDU #37		_	Yellow,	Moderate Well			
SW 45.5 *Continue* ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) SW 45.5 Graded Silica Sand JOB NUMBER : Apache Corp. / 19-0112-49 HOLE DIAMETER : 5" LOCATION : EBDU #37		4			v		
SW 45.5 Graded Silica Sand ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) SW 45.5 Graded Silica Sand JOB NUMBER : Apache Corp. / 19-0112-49 HOLE DIAMETER : 5" LOCATION : EBDU #37				, , , , , , , , , , , , , , , , , , ,	´		
Continue SW 47.5 Graded Silica Sand		45					
Continue ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE *Continue* WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION LOCATION: EBDU #37		_			SW		
Continue ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE *Continue* WATER TABLE (TIME OF BORING) LABORATORY TEST LOCATION LOCATION: EBDU #37		_					47.5
Continue* Sand ONE CONTINUOUS AUGER SAMPLER WATER TABLE (TIME OF BORING) STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) LOCATION: EBDU #37		_					
STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) HOLE DIAMETER: 5" LOCATION: EBDU #37			*	'Continue*			Sand
STANDARD PENETRATION TEST LABORATORY TEST LOCATION UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT) HOLE DIAMETER:5" LOCATION:EBDU #37	/O /	IE CONTINU	JOUS AUGER S	SAMPLER — WATER	ΓABLE (TIMF	OF BORING	JOB NUMBER : Apache Corp. / 19-0112-49
UNDISTURBED SAMPLE + PENETROMETER (TONS/ SQ. FT)					•		
The internal content of the content							LOCATION . EPDII #27
■ WATER TABLE (24 HRS) NR NO RECOVERY LAI GEOLOGIST: M. Larson						NS/ SQ. FT)	
	w	ATER TABLE	E (24 HRS)	NR NO RECO	OVERY		
Agrson & DRILL DATE: BORING NUMBER: DRILLING CONTRACTOR: SDC	↑arson & -						DRILLING CONTRACTOR : SDC
Agrson & State Sta	Ssociates, In Environmental Consulta	nc.		9-20-2019	TMV	V - 2	DRILLING METHOD : Air Rotary

BORING RECORD												
		Start: 15:02			00	Surface Elevation: 3,563.50' TOC Elecation: 3,566.23'		REMARKS				
GEOLOGIC	DEPTH	Finish:	15:55	DESCRIPTION USCS	GRAPHIC LOG		ا آج	BACKGROUND				
UNIT		DESC	CRIPTION LITHOLOGIC	SCR	HA\	*Continue*	킬티	PID READING				
		DLO	JAN HON EITHOLOGIO		GR/	*Continue*	訓	SOIL:PPM				
	50	,	*Continue*				╗					
								7				
	_											
	_					Graded Silica Sand		7				
	_	0.11.						7				
	55 —	Silty and Moist at	d Clayey Below 50',									
	_	MOISt at	1 33					7				
						2" Sch. 40						
	60 —					PVC Threaded						
						0.0.0"		一				
				SM-SC		Screw		\neg				
				0.0.00				7				
	05							7				
	65 —											
								7				
	_					67.85 Cap						
					围井井							
	70											
	'0											
	75							7				
			7.5YR, 4/3, Light									
			Poorly Sorted,	GW	Hay I							
		Round,	Red Bed									
	80		TD: 79'			80.00						
OI	NE CONTINU	OUS AUGER S	SAMPLER — WATER T	JOB NUMBER : Apache Corp. / 19-0112-49								
STANDARD PENETRATION TEST LABORATORY TEST LOCATION						HOLE DIAMETER : 5"						
UNDISTURBED SAMPLE + PENETROME						LOCATION : EBDU #37						
<u> </u>	ATER TABLE	(24 HRS)	NR NO RECO	VERY		LAI GEOLOGIST : M. Larson						
Agrson & DRILL DATE:			I	NUMBER :	DRILLING CONTRACTOR : SDC							
Agrson & Ssociates, Inc. Environmental Consultants			9-20-2019	TMV	I- 2	DRILLING METHOD : Air Rotary						

				BORING	RECORD											
		Start: 09	9:35 MST	<u>N</u>	90	PID READING					S	SAMPLE			REMARKS	
GEOLOGIC	DEPTH	Finish: 1	0:30 MST	DESCRIPTI	GRAPHIC LOG	PPM X						ER	PID READING	RECOVERY	1	BACKGROUND PID READING
UNIT		DESC	CRIPTION LITHOLOGIC		%	2 4 6 8 10 12 14 16 18				NUMBER	RE/	닖	SOIL :PPM			
	0					$\perp \downarrow \perp$			\perp		Ш	Z	昷	뿞	ᆸ	SOIL:PPM
			5YR 4/4, Brown, Fine	SM								1			1	
			Fine Quartz		H											-
	5 _	41 ′	uartz and Feldspar		H							2			5	_
	=	11	e to Well Sorted, Sub													 -
	10 —		d to Well Rounded	Caliche												
	_		7.5YR 8/2, Pinkish		H							3			10	_
	. <u> </u>		andy, Fine to Very Fine	*	H											_
	15		Well Sorted, Well									4		\vdash	15	
	_	Rounded	J													
	20 _		YR 8/2, Very Pale													
			Quartz Rich Sand, Well									5			20	_
	=		d to Very Well Rounded	, SM] =
	25 _	, ,	Il Sorted, Fine to Very	Sivi								6			25	
	-	Fine Gra	ined Quartz Sand									ľ			20	-
	30 =		/6, Strong Brown,													
	30 -		l, Quartz Rich, Well									7			30	_
	=		to Very Well Rounded	,												
	35 _	, ,	Il Sorted, Fine to Very									8		_	35	
	=		ined Quartz Sand with													
	40 =	1	in Depth Lithology													_
	40 -	1	s the Same									9			40	1 -
	=	_	comes Silty to Very ined Quartz Sand to													=
	45 _	65'	lineu Quartz Sanu to									10		_	45	
	-	03										'				
	50] =
	50 —											11			50	-
	=			SM]
	55 —			Sivi								12			55	
	_															_
	60 _															
												13			60	_
	05 -				. 44 (2.1											
	65 –	Crovelly	Cand 7 EVD Ctrong		2000							14			65	
	=		Sand, 7.5YR, Strong Fine to Very Fine	SP	828							15				=
	70 —		Sand, Quartz and									'3			68	
	_	II .	, Oxidized, Sub													
	75 =		to Sub Rounded,													_
			-15mm), Poorly Sorted													 -
	=		TD: 68.41'													-
ONE CONTINUOUS AUGER SAMPLER — WATER TABLE (TIME OF BORING)						JOB NUMBER : Apache/ 19-0112-49										
STANDARD PENETRATION TEST LABORATORY TEST LOCATION						HOLE DIAMETER : 5"										
UNDISTURBED SAMPLE + PENETROMI						LOCATION : EBDU #37										
WATER TABLE (24 HRS) NR NO RECOVERY						LAI GEOLOGIST: T. Jackson										
DRILL DATE:					NUMBER :	DRIL										SDC
Agrson & 09-29-2020				W-3	DRIL									ary		

				BORING	RECORE	D						
		Start:12:	45	DESCRIPTION USCS	GRAPHIC LOG	PID READING SAMPLE REMARKS						
GEOLOGIC	DEPTH	Finish13	:40	RP SSS	⊇ 	Vented Cap Vented Cap PID READING						
UNIT			CRIPTION LITHOLOGIC	SS SI	 AP⊦	Vented Cap Riser Bentonite Reser Riser Reser R	DDM					
			SKII TIGIT EITHGEGGIG	Ä	GR/	A SOUR SOUR SOUR SOUR SOUR SOUR SOUR SOUR	PPM					
	0	Caliche,	7.5YR 8/2, Pinkish		T		_					
	_		edium to Very Fine,]	-					
	5 _	Poorly So	orted, Sub Angular to	Caliche			_					
	=	Sub Rou	nded	Caliche	╫┼	-	=					
	10 —]	4					
	10 -					3 10	-					
	=	Sand 10	YR 8/2, Very Pale				=					
	15 _		uartz Rich Sand, Well			4 15	$\overline{-}$					
	=		to Very Well Rounded,				=					
	20 _		II Sorted, Fine to Very				7					
		Fine Qua		SM		5 20	7					
					1 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		7					
	25 _	7.5YR 5/	6, Strong Brown,			6 25	\exists					
	_	Oxidized	, Quartz Rich Sand,		24		7					
	30 _		ular to Sub Rounded,			\	4					
	30 —		orted, Coarse to Fine			7 30	7					
	=		Quartz Sand with			:	=					
	35 _	Increase				8 35	_					
	=	_	nology Remained				7					
	40 _	ł	and Grain Size				7					
	40 -		ed to Fine to Very Fine			9 40	-					
	=		and, Well Sorted, to Well Rounded			Sodium Bentonite	7					
	45 _	Nounded	to Well Rounded			:	\exists					
	=					49.96	7					
	50 —						7					
	50 -					11 50	\exists					
	=			SM		2" Sch. 40 PVC	=					
	55 –			Oivi		Threaded 12 55	\exists					
	_	Sand 7.5	5YR, Strong Brown,			Slotted						
	60 _	l .	vel, Fine to Very			Screw						
	-		Quartz Sand, Quartz			13 60	=					
	65 —	and Feld	spar, Oxidized, Sub				4					
	65 _		o Sub Rounded,			14 65	\exists					
		Gravel (5	i-15mm), Poorly Sorted			69.76	3					
	70 —		TD: 70.09'			. 69.76 — Cap 15 70	\exists					
	-		10.70.03				Ξ					
	75 -						ᅻ					
	=						4					
10	NE CONTINU	JOUS AUGER S	SAMPLER — WATER TAI	OF BORING	₃₎ JOB NUMBER : <u>Apache/ 19-0112-49</u>							
ST	ANDARD P	ENETRATION T			HOLE DIAMETER :5"	[
UNDISTURBED SAMPLE + PENETROME						LOCATION : EBDU #37						
	WATER TABLE (24 HRS) NR NO RECOVE					LAI GEOLOGIST : T. Jackson]					
A grson & DRILL DATE:				NUMBER :	DRILLING CONTRACTOR : SDC							
Agrson & 09-29-2020 Environmental Consultants			TM	W-4	DRILLING METHOD : Air Rotary							

Appendix D

Laboratory Report



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-387-1

Client Project/Site: Apache-EBDU #37

For:

Larson & Associates, Inc. 507 N Marienfeld Suite 202 Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by: 3/26/2021 9:50:23 AM

Holly Taylor, Project Manager (806)794-1296

holly.taylor@eurofinset.com

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 1/9/2025 3:59:36 PM M

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

7

Ö

10

12

13

Client: Larson & Associates, Inc.

Project/Site: Apache-EBDU #37

Laboratory Job ID: 880-387-1

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Surrogate Summary	9
QC Sample Results	10
QC Association Summary	15
Lab Chronicle	17
Certification Summary	19
Method Summary	20
Sample Summary	21
Chain of Custody	22
Racaint Chacklists	23

2

_

6

0

10

12

. .

A

Definitions/Glossary

Client: Larson & Associates, Inc.

Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Qualifiers

GC VOA

Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.
U Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

Subcontract

Qualifier Qualifier Description

K Sample analyzed outside of recommended hold time.

U Analyte was not detected.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Eurofins Xenco, Midland

9

5

6

7

0

10

12

13

Case Narrative

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Job ID: 880-387-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative 880-387-1

Comments

No additional comments.

Receipt

The samples were received on 3/15/2021 9:18 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.5° C.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract non-Sister

See attached subcontract report.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work

Method TDS: This method was subcontracted to Eurofins Stafford. The subcontract laboratory certification is different from that of the facility issuing the final report.

5

3

4

5

6

8

=

11

12

14

Detection Summary

Client: Larson & Associates, Inc.

Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Client Sample ID: TWM-1	Lab Sample ID: 880-387-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	10.9		0.500	mg/L	1	_	300.0	Total/NA
Total Dissolved Solids	360	K	5.00	mg/L	1		TDS	Total/NA

Client Sample ID: TWM-3 Lab Sample ID: 880-387-2

Analyte	Result Q	ualifier	RL	Unit	Dil Fac	D Method	Prep Type
Chloride	213		5.00	mg/L	10	300.0	Total/NA
Total Dissolved Solids	900 K		5.00	mg/L	1	TDS	Total/NA

Client Sample ID: TWM-2 Lab Sample ID: 880-387-3

Analyte	Result Qualifie	r RL	Unit	Dil Fac	D Method	Prep Type
Chloride	293	5.00	mg/L	10	300.0	Total/NA
Total Dissolved Solids	1000 K	5.00	mg/L	1	TDS	Total/NA

Client Sample ID: TWM-4 Lab Sample ID: 880-387-4

Analyte	Result Qualifier	RL	Unit	Dil Fac	D Method	Prep Type
Chloride	834	10.0	mg/L	20	300.0	Total/NA
Total Dissolved Solids	1960 K	5.00	mg/L	1	TDS	Total/NA

Lab Sample ID: 880-387-5 **Client Sample ID: Windmill**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D Method	Prep Type
Chloride	252		2.50	mg/L		300.0	Total/NA
Total Dissolved Solids	745	K	5.00	mg/L	1	TDS	Total/NA

Client Sample ID: Dup-1 Lab Sample ID: 880-387-6

Analyte	Result Qu	ıalifier RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	259	2.50	mg/L	5		300.0	Total/NA
Total Dissolved Solids	798 K	5.00	mg/L	1		TDS	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Larson & Associates, Inc.

Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Lab Sample ID: 880-387-1 **Client Sample ID: TWM-1**

Matrix: Water

Date Collected: 03/11/21 08:53 Date Received: 03/15/21 09:18

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/24/21 02:09	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/24/21 02:09	1
Toluene	<2.00	U	2.00	ug/L			03/24/21 02:09	1
Total BTEX	<2.00	U	2.00	ug/L			03/24/21 02:09	1
Xylenes, Total	<4.00	U	4.00	ug/L			03/24/21 02:09	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L			03/24/21 02:09	1
o-Xylene	<2.00	U	2.00	ug/L			03/24/21 02:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130				03/24/21 02:09	1
1,4-Difluorobenzene (Surr)	102		70 - 130				03/24/21 02:09	1
Method: 300.0 - Anions, Io	n Chromatogra	phy						
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10,9		0.500	mg/L			03/17/21 23:08	1

Total Dissolved Solids 360 K 5.00 mg/L 03/21/21 12:30 03/21/21 12:30 **Client Sample ID: TWM-3** Lab Sample ID: 880-387-2

Result Qualifier

Analyte

Analyzed

Dil Fac

Prepared

Date Collected: 03/11/21 09:12 **Matrix: Water**

RL

MDL Unit

Date Received: 03/15/21 09:18

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Toluene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Total BTEX	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/20/21 10:50	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/20/21 10:50	1
o-Xylene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130					03/20/21 10:50	1
1,4-Difluorobenzene (Surr)	99		70 - 130					03/20/21 10:50	1
Method: 300.0 - Anions, Io	n Chromatogra	phy							
Analyte	_	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	213		5.00		mg/L			03/17/21 23:17	10
-	Total Dissalved	Solids (TI	OS)						
Method: TDS - SM 2540C 1	iolai Dissoiveu	Oomas (i i							
Method: TDS - SM 2540C T Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Job ID: 880-387-1

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Client Sample ID: TWM-2

Lab Sample ID: 880-387-3

Matrix: Water

Date Collected: 03/11/21 09:36 Date Received: 03/15/21 09:18

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/20/21 11:11	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/20/21 11:11	1
Toluene	<2.00	U	2.00	ug/L			03/20/21 11:11	1
Total BTEX	<2.00	U	2.00	ug/L			03/20/21 11:11	1
Xylenes, Total	<4.00	U	4.00	ug/L			03/20/21 11:11	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L			03/20/21 11:11	1
o-Xylene	<2.00	U	2.00	ug/L			03/20/21 11:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				03/20/21 11:11	1
1,4-Difluorobenzene (Surr)	101		70 - 130				03/20/21 11:11	1
- Method: 300.0 - Anions, Ior	n Chromatogra	phy						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	293		5,00	mg/L			03/17/21 23:26	10

Method: TDS - SM 2540C Total	Dissolved	Solids (TI	OS)						
Analyte	Result	Qualifier	RL	MDL L	Jnit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1000	K	5.00	n	ng/L		03/21/21 12:30	03/21/21 12:30	1

Lab Sample ID: 880-387-4 **Client Sample ID: TWM-4** Date Collected: 03/11/21 10:05 **Matrix: Water**

Xylenes, Total

m-Xylene & p-Xylene

Date Received: 03/15/21	09:18							
Method: 8021B - Volatile	e Organic Compo	unds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/20/21 11:31	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/20/21 11:31	1
Toluene	<2.00	U	2.00	ug/L			03/20/21 11:31	1
Total BTEX	<2.00	U	2.00	ug/L			03/20/21 11:31	1

o-Xylene	<2.00	U	2.00	ug/L		03/20/21 11:31	1
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	-		03/20/21 11:31	1
1,4-Difluorobenzene (Surr)	101		70 - 130			03/20/21 11:31	1

4.00

4.00

ug/L

ug/L

<4.00 U

<4.00 U

Method: 300.0 - Anions, Ion Cl	hromatography						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	834	10.0	mg/L			03/17/21 23:35	20

Method: TDS - SM 2540C Total	Dissolved	Solids (TI	OS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1960	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Eurofins Xenco, Midland

03/20/21 11:31

03/20/21 11:31

Released to Imaging: 1/9/2025 8:59:36 PMM

Client Sample Results

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Lab Sample ID: 880-387-5 **Client Sample ID: Windmill** Date Collected: 03/12/21 13:26

Matrix: Water

Date Received: 03/15/21 09:18

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/20/21 11:52	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/20/21 11:52	1
Toluene	<2.00	U	2.00	ug/L			03/20/21 11:52	1
Total BTEX	<2.00	U	2.00	ug/L			03/20/21 11:52	1
Xylenes, Total	<4.00	U	4.00	ug/L			03/20/21 11:52	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L			03/20/21 11:52	1
o-Xylene	<2.00	U	2.00	ug/L			03/20/21 11:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130				03/20/21 11:52	1
1,4-Difluorobenzene (Surr)	101		70 - 130				03/20/21 11:52	1
Method: 300.0 - Anions, Io	n Chromatogra	phy						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	252		2.50	mg/L			03/18/21 00:02	5

Analyte Result Qualifier **MDL** Unit **Prepared** Analyzed Dil Fac RL**Total Dissolved Solids** 745 K 5.00 mg/L 03/21/21 12:30 03/21/21 12:30

Client Sample ID: Dup-1 Lab Sample ID: 880-387-6

Date Collected: 03/12/21 00:00 **Matrix: Water**

Date Received: 03/15/21 09:18

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Toluene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Total BTEX	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/24/21 02:30	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/24/21 02:30	1
o-Xylene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130					03/24/21 02:30	1
1,4-Difluorobenzene (Surr)	101		70 - 130					03/24/21 02:30	1
Method: 300.0 - Anions, Io	n Chromatogra	phy							
Analyte	_	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	259		2.50		mg/L			03/18/21 00:11	5
		O . 11 . 1 . (TE	16)						
Method: TDS - SM 2540C T	Total Dissolved	Solias (11	J O)						
Method: TDS - SM 2540C T Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Surrogate Summary

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water Prep Type: Total/NA

			Percer	t Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
820-139-B-4 MS	Matrix Spike	93	99	
820-139-B-4 MSD	Matrix Spike Duplicate	97	101	
880-387-1	TWM-1	91	102	
880-387-2	TWM-3	102	99	
880-387-3	TWM-2	108	101	
880-387-4	TWM-4	107	101	
880-387-5	Windmill	108	101	
880-387-6	Dup-1	95	101	
890-344-A-1 MS	Matrix Spike	100	98	
890-344-A-1 MSD	Matrix Spike Duplicate	103	95	
LCS 880-592/3	Lab Control Sample	100	100	
LCS 880-750/33	Lab Control Sample	94	94	
LCSD 880-592/4	Lab Control Sample Dup	100	100	
LCSD 880-750/34	Lab Control Sample Dup	97	100	
MB 880-592/8	Method Blank	102	97	
MB 880-598/5-A	Method Blank	111	95	
MD 000 000/0 /1	Method Blank	115	96	

DFBZ = 1,4-Difluorobenzene (Surr)

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-592/8

Matrix: Water Analysis Batch: 592 **Client Sample ID: Method Blank** Prep Type: Total/NA

MB MB Analyte Result Qualifier RL Unit Analyzed Dil Fac D **Prepared** Benzene <2.00 U 2.00 ug/L 03/19/21 10:29 Ethylbenzene <2.00 U 2.00 ug/L 03/19/21 10:29 1 Toluene <2.00 U 2.00 ug/L 03/19/21 10:29 1 Total BTEX <2.00 U 2.00 ug/L 03/19/21 10:29 1 <4.00 U Xylenes, Total 4.00 ug/L 03/19/21 10:29 m-Xylene & p-Xylene <4.00 U 4.00 ug/L 03/19/21 10:29 <2.00 U 2.00 ug/L 03/19/21 10:29 o-Xylene

	11.0					
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130		03/19/21 10:29	
1,4-Difluorobenzene (Surr)	97		70 - 130		03/19/21 10:29	1

Lab Sample ID: LCS 880-592/3

Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 592 Spike LCS LCS

%Rec. Analyte Added Result Qualifier Unit %Rec Limits Benzene 100 104.1 ug/L 104 70 - 130 Ethylbenzene 100 114.1 ug/L 114 70 - 130 Toluene 100 110.0 ug/L 70 - 130 110 200 233.0 m-Xylene & p-Xylene ug/L 117 70 - 130o-Xylene 100 112.0 70 - 130 ug/L 112

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	100	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-592/4

Matrix: Water

Analysis Batch: 592

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	100	110.6		ug/L		111	70 - 130	6	20
Ethy l benzene	100	119.9		ug/L		120	70 - 130	5	20
Toluene	100	115.8		ug/L		116	70 - 130	5	20
m-Xylene & p-Xylene	200	244.2		ug/L		122	70 - 130	5	20
o-Xylene	100	117.1		ug/L		117	70 - 130	4	20

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-344-A-1 MS

Matrix: Water

Analysis Batch: 592											
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	<2.00	U F1	100	114.4		ug/L		114	70 - 130		_

Eurofins Xenco, Midland

Prep Type: Total/NA

Client Sample ID: Matrix Spike

Page 10 of 23

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-344-A-1 MS

Matrix: Water Analysis Batch: 592 Client Sample ID: Matrix Spike Prep Type: Total/NA

MS MS Sample Sample **Spike** %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <2.00 U F1 100 121.0 70 - 130 ug/L 121 Toluene <2.00 UF1 100 118.2 ug/L 118 70 - 130200 70 - 130 m-Xylene & p-Xylene <4.00 U F1 247.1 ug/L 124 o-Xylene <2.00 UF1 100 119.3 ug/L 119 70 - 130

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-344-A-1 MSD

Matrix: Water

Analysis Batch: 592

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Spike MSD MSD %Rec. **RPD** Sample Sample **RPD** Limit **Analyte** Result Qualifier Added Result Qualifier Unit %Rec Limits 25 Benzene <2.00 U F1 100 <2.00 U F1 ug/L 0 70 - 130 NC Ethylbenzene <2.00 UF1 100 <2.00 UF1 ug/L 0 70 - 130 NC 25 Toluene 100 <2.00 UF1 0 70 - 130 25 < 2.00 UF1 ug/L NC ug/L 0 25 m-Xylene & p-Xylene <4.00 UF1 200 <4.00 U F1 70 - 130NC o-Xylene <2.00 UF1 100 <2.00 UF1 ug/L 0 70 - 130 NC

MSD MSD

Surrogate	%Recovery Qu	ualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: MB 880-598/5-A

Matrix: Water

Analysis Batch: 750

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 598

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Ethylbenzene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Toluene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Total BTEX	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Xylenes, Total	<4.00	U	4.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
o-Xylene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	$\overline{03/23/21\ 10:55}$ $\overline{03/23/21\ 14:21}$	1
1,4-Difluorobenzene (Surr)	95		70 - 130	03/23/21 10:55 03/23/21 14:21	1

Lab Sample ID: MB 880-750/39

Matrix: Water

Analysis Batch: 750

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Analyte Result Qualifier RL Unit D **Prepared** Analyzed **Dil Fac** Benzene <2.00 U 2.00 ug/L 03/24/21 01:27 Ethylbenzene <2.00 U 2.00 ug/L 03/24/21 01:27

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-750/39 **Matrix: Water**

Analysis Batch: 750

Analyte

Toluene

Total BTEX

o-Xylene

Xylenes, Total

m-Xylene & p-Xylene

Client Sample ID: Method Blank

Prep Type: Total/NA

03/24/21 01:27

MB MB Result Qualifier RL Unit **Prepared Analyzed** Dil Fac <2.00 U 2.00 03/24/21 01:27 ug/L <2.00 U 2.00 ug/L 03/24/21 01:27 <4.00 U 4.00 03/24/21 01:27 ug/L <4.00 U 4.00 ug/L 03/24/21 01:27

ug/L

MB MB

<2.00 U

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130		03/24/21 01:27	1
1,4-Difluorobenzene (Surr)	96		70 - 130		03/24/21 01:27	1

2.00

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 750

Lab Sample ID: LCS 880-750/33

Spike	LCS	LCS				%Rec.	
Added	Result	Qualifier	Unit	D	%Rec	Limits	
100	96.25		ug/L		96	70 - 130	
100	93.87		ug/L		94	70 - 130	
100	99.05		ug/L		99	70 - 130	
200	191.1		ug/L		96	70 - 130	
100	93.23		ug/L		93	70 - 130	
	Added 100 100 100 200	Added Result 100 96.25 100 93.87 100 99.05 200 191.1	Added Result Qualifier 100 96.25 100 93.87 100 99.05 200 191.1	Added Result Qualifier Unit 100 96.25 ug/L 100 93.87 ug/L 100 99.05 ug/L 200 191.1 ug/L	Added Result Qualifier Unit D 100 96.25 ug/L 100 93.87 ug/L 100 99.05 ug/L 200 191.1 ug/L	Added Result Qualifier Unit D %Rec 100 96.25 ug/L 96 100 93.87 ug/L 94 100 99.05 ug/L 99 200 191.1 ug/L 96	Added Result Qualifier Unit D %Rec Limits 100 96.25 ug/L 96 70 - 130 100 93.87 ug/L 94 70 - 130 100 99.05 ug/L 99 70 - 130 200 191.1 ug/L 96 70 - 130

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	94	70 - 130
1,4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: LCSD 880-750/34

Matrix: Water

Analysis Batch: 750

Client	Sample	ID: I	Lab	Cont	rol	Samp	le Du	ıp
				Prep	Ту	pe: To	otal/N	IA

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	100	93.34	-	ug/L		93	70 - 130	3	20
Ethy l benzene	100	93.86		ug/L		94	70 - 130	0	20
Toluene	100	98.22		ug/L		98	70 - 130	1	20
m-Xylene & p-Xylene	200	183.2		ug/L		92	70 - 130	4	20
o-Xylene	100	92.33		ug/L		92	70 - 130	1	20

LCSD LCSD

, ,	%Recovery 0	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 820-139-B-4 MS

Matrix: Water

Analysis Batch: 750

Client Sample ID: Matrix Spike	
Prep Type: Total/NA	

7 maryolo Batom 700	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<2.00	U	100	96.80		ug/L		97	70 - 130	
Ethy l benzene	<2.00	U	100	95.39		ug/L		95	70 _ 130	
Toluene	<2.00	U	100	101.2		ug/L		101	70 - 130	

Eurofins Xenco, Midland

Page 12 of 23

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 820-139-B-4 MS **Matrix: Water Analysis Batch: 750**

Client Sample ID: Matrix Spike Prep Type: Total/NA

MS MS Sample Sample **Spike** %Rec. **Analyte** Result Qualifier Added Result Qualifier Unit %Rec Limits m-Xylene & p-Xylene <4 00 Ū 200 190.3 95 70 - 130 ug/L o-Xylene <2.00 U 100 91.70 ug/L 92 70 - 130

MS MS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 93 1,4-Difluorobenzene (Surr) 99 70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Matrix: Water Analysis Batch: 750

Lab Sample ID: 820-139-B-4 MSD

Sample Sample MSD MSD %Rec. RPD **Spike** Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Benzene <2.00 Ū 100 99.07 ug/L 99 70 - 130 2 25 100 6 25 Ethylbenzene <2.00 U 101.1 ug/L 101 70 - 130104 25 Toluene <2.00 U 100 104.3 ug/L 70 - 130 3 <4.00 U 200 201.7 ug/L 101 70 - 130 6 25 m-Xylene & p-Xylene 98.08 25 o-Xylene <2.00 U 100 ug/L 98 70 - 130

MSD MSD %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 97 101 70 - 130 1,4-Difluorobenzene (Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-549/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 549

мв мв **Analyte** Result Qualifier RL Unit D **Prepared** Analyzed Dil Fac Chloride <0.500 U 0.500 mg/L 03/17/21 22:13

Lab Sample ID: LCS 880-549/4 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 549

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 25.0 23.89 96 90 - 110 mg/L

Lab Sample ID: LCSD 880-549/5 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 549

LCSD LCSD RPD Spike %Rec. Added Result Qualifier Unit D %Rec Limits **RPD** Limit Analyte Chloride 25.0 23.77 95 90 - 110 mg/L

Client: Larson & Associates, Inc. Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-415-A-1 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 549

Sample Sample **Spike** MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Chloride 25.0 51.0 75.29 mg/L 97 90 - 110

Lab Sample ID: 880-415-A-1 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 549

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit D %Rec Chloride 51.0 25.0 75.26 mg/L 97 90 - 110 0 20

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Lab Sample ID: 3154281-1-BLK Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: WATER

Analysis Batch: 3154281 **BLANK BLANK**

Result Qualifier **Analyte** RL **MDL** Unit Prepared Analyzed **Dil Fac** 5 Total Dissolved Solids <5 Ū mg/L 03/21/21 12:30 03/21/21 12:30

Lab Sample ID: 3154281-1-BKS **Client Sample ID: Lab Control Sample Matrix: WATER** Prep Type: Total/NA

Analysis Batch: 3154281

Prep Batch: 3154281 P Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Total Dissolved Solids 1000 80 - 120 987 mg/L 99

Lab Sample ID: 3154281-1-BSD Client Sample ID: Lab Control Sample Dup

Matrix: WATER

Analysis Batch: 3154281

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Limits **Analyte** Unit %Rec RPD Limit Total Dissolved Solids 1000 955 96 80 _ 120 3 mg/L

Lab Sample ID: 692017-006 D **Matrix: WATER**

Analysis Batch: 3154281

DUP DUP Sample Sample **RPD** Result Qualifier Result Qualifier **RPD** Limit Analyte Unit D Total Dissolved Solids 798 742 10 mg/L

Eurofins Xenco, Midland

Prep Batch: 3154281_P

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 3154281 P

Prep Batch: 3154281 P

Client Sample ID: Duplicate

QC Association Summary

Client: Larson & Associates, Inc.

Project/Site: Apache-EBDU #37

Job ID: 880-387-1

GC VOA

Analysis Batch: 592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-2	TWM-3	Total/NA	Water	8021B	
880-387-3	TWM-2	Total/NA	Water	8021B	
880-387-4	TWM-4	Total/NA	Water	8021B	
880-387-5	Windmill	Total/NA	Water	8021B	
MB 880-592/8	Method Blank	Total/NA	Water	8021B	
LCS 880-592/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-592/4	Lab Control Sample Dup	Total/NA	Water	8021B	
890-344-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
890-344-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Prep Batch: 598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-598/5-A	Method Blank	Total/NA	Water	5035	

Analysis Batch: 750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	8021B	
880-387-6	Dup-1	Total/NA	Water	8021B	
MB 880-598/5-A	Method Blank	Total/NA	Water	8021B	598
MB 880-750/39	Method Blank	Total/NA	Water	8021B	
LCS 880-750/33	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-750/34	Lab Control Sample Dup	Total/NA	Water	8021B	
820-139-B-4 MS	Matrix Spike	Total/NA	Water	8021B	
820-139-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

HPLC/IC

Analysis Batch: 549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	300.0	
880-387-2	TWM-3	Total/NA	Water	300.0	
880-387-3	TWM-2	Total/NA	Water	300.0	
880-387-4	TWM-4	Total/NA	Water	300.0	
880-387-5	Windmill	Total/NA	Water	300.0	
880-387-6	Dup-1	Total/NA	Water	300.0	
MB 880-549/3	Method Blank	Total/NA	Water	300.0	
LCS 880-549/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-549/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-415-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-415-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Subcontract

Analysis Batch: 3154281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	TDS	3154281_P
880-387-2	TWM-3	Total/NA	Water	TDS	3154281_P
880-387-3	TWM-2	Total/NA	Water	TDS	3154281_P
880-387-4	TWM-4	Total/NA	Water	TDS	3154281_P
880-387-5	Windmill	Total/NA	Water	TDS	3154281_P
880-387-6	Dup-1	Total/NA	Water	TDS	3154281_P
3154281-1-BLK	Method Blank	Total/NA	WATER	TDS	3154281_P

Eurofins Xenco, Midland

_____ 3

4

6

8

9

11

14

15

Euromis Acrico, Midiario

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-387-1 Project/Site: Apache-EBDU #37

Subcontract (Continued)

Analysis Batch: 3154281 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
3154281-1-BKS	Lab Control Sample	Total/NA	WATER	TDS	3154281_P
3154281-1-BSD	Lab Control Sample Dup	Total/NA	WATER	TDS	3154281_P
692017-006 D	Duplicate	Total/NA	WATER	TDS	3154281_P

Prep Batch: 3154281_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	NONE	
880-387-2	TWM-3	Total/NA	Water	NONE	
880-387-3	TWM-2	Total/NA	Water	NONE	
880-387-4	TWM-4	Total/NA	Water	NONE	
880-387-5	Windmill	Total/NA	Water	NONE	
880-387-6	Dup-1	Total/NA	Water	NONE	
3154281-1-BLK	Method Blank	Total/NA	WATER	***DEFAULT PREP***	
3154281-1-BKS	Lab Control Sample	Total/NA	WATER	***DEFAULT PREP***	
3154281-1-BSD	Lab Control Sample Dup	Total/NA	WATER	***DEFAULT PREP***	
692017-006 D	Duplicate	Total/NA	WATER	***DEFAULT PREP***	

Job ID: 880-387-1

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Client Sample ID: TWM-1

Date Collected: 03/11/21 08:53 Date Received: 03/15/21 09:18 Lab Sample ID: 880-387-1

Matrix: Water

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	750	03/24/21 02:09	PXS	XM
Total/NA	Analysis	300.0		1	549	03/17/21 23:08	СН	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Lab Sample ID: 880-387-2 **Client Sample ID: TWM-3**

Date Collected: 03/11/21 09:12 **Matrix: Water**

Date Received: 03/15/21 09:18

Prep Type Total/NA	Batch Type Analysis	Batch Method 8021B	Run	Dilution Factor 1	Batch Number 592	Prepared or Analyzed 03/20/21 10:50	Analyst MR	Lab XM
Total/NA	Analysis	300.0		10	549	03/17/21 23:17	СН	XM
Total/NA Total/NA	Prep Analysis	NONE TDS		1 1	_	03/21/21 12:30 03/21/21 12:30	DTN	XS XS

Lab Sample ID: 880-387-3 Client Sample ID: TWM-2

Date Collected: 03/11/21 09:36

Date Received: 03/15/21 09:18

Date Received: 03/15/21 09:18

Released to Imaging: 1/9/2025 3:59:36 RMM

Batch Batch Dilution Batch Prepared **Prep Type** Type Method Run **Factor** Number or Analyzed Analyst Lab Total/NA Analysis 8021B 1 592 03/20/21 11:11 MR $\overline{\mathsf{XM}}$ Total/NA Analysis 300.0 10 549 03/17/21 23:26 CH XM 3154281_P 03/21/21 12:30 Total/NA NONE XS Prep 1 Total/NA Analysis TDS 3154281 03/21/21 12:30 DTN XS

Client Sample ID: TWM-4 Lab Sample ID: 880-387-4

Date Collected: 03/11/21 10:05 **Matrix: Water**

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 11:31	MR	XM
Total/NA	Analysis	300.0		20	549	03/17/21 23:35	СН	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Lab Sample ID: 880-387-5 **Matrix: Water**

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B	· ·	1	592	03/20/21 11:52	MR	XM
Total/NA	Analysis	300.0		5	549	03/18/21 00:02	СН	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Eurofins Xenco, Midland

10

Client Sample ID: Windmill Date Collected: 03/12/21 13:26 Date Received: 03/15/21 09:18

Lab Chronicle

Client: Larson & Associates, Inc.

Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Lab Sample ID: 880-387-6

Matrix: Water

Client Sample ID: Dup-1 Date Collected: 03/12/21 00:00

Date Received: 03/15/21 09:18

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	750	03/24/21 02:30	PXS	XM
Total/NA	Analysis	300.0		5	549	03/18/21 00:11	СН	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Laboratory References:

XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

XS = Eurofins Stafford, 4147 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Eurofins Xenco, Midland

9

3

4

6

Q

9

11

13

14

Accreditation/Certification Summary

Client: Larson & Associates, Inc.

Job ID: 880-387-1

Project/Site: Apache-EBDU #37

Laboratory: Eurofins Xenco, Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Texas NELAP T104704400-20-21 06-30-21	Authority	Program	Identification Number	Expiration Date
	Texas	NELAP	T104704400-20-21	06-30-21

Laboratory: Eurofins Stafford

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-21-39	06-30-21

Eurofins Xenco, Midland

1

2

4

5

7

0

11

12

14

Method Summary

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XM
300.0	Anions, Ion Chromatography	MCAWW	XM
2540C	SM 2540C Total Dissolved Solids (TDS)	SM	XS
5030B	Purge and Trap	SW846	XM

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

XS = Eurofins Stafford, 4147 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc. Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	A4 ID
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-387-1	TWM-1	Water	03/11/21 08:53	03/15/21 09:18	
880-387-2	TWM-3	Water	03/11/21 09:12	03/15/21 09:18	
880-387-3	TWM-2	Water	03/11/21 09:36	03/15/21 09:18	
880-387-4	TWM-4	Water	03/11/21 10:05	03/15/21 09:18	
880-387-5	Windmill	Water	03/12/21 13:26	03/15/21 09:18	
880-387-6	Dup-1	Water	03/12/21 00:00	03/15/21 09:18	

3

4

5

7

10

10

13

Released to Imaging: 1/9/2025 3:59:36 PM M

Login Sample Receipt Checklist

Client: Larson & Associates, Inc. Job Number: 880-387-1

Login Number: 387 List Source: Eurofins Midland

List Number: 1 Creator: Teel, Brianna

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

2

5

4

O

8

10

12

13

15

Table 2 1RP-5636

Groundwater Sample Analytical Data Summary Apache Corporation, EBDU 37, Lea County, New Mexico

Sample	Collection	Benzene	Toluene	Ethylbenzene	Xylenes	Chloride	TDS	Depth To
· ·	Date	(mg/L)	(mg/L)	, (mg/L)	, (mg/L)	(mg/L)	(mg/L)	Water
NMWQCC Stand		*0.005	*1	*0.7	*0.62	**250	**1,000	(Feet TOC)
Windmill	(') 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	
	(²) 09/23/2019							
	(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	
	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	
	(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	
	(³) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	255	781	
TMW-1	(²) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.90
	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
	(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	49.41
	(³) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	49.67
TMW-2	(²) 09/23/2019		<0.00200	<0.00200	<0.00200	338	1,220	55.80
	(²) 12/26/2019			<0.00200	<0.00200		1,170	57.50
	(³) 09/30/2020		0.00227	<0.00200	<0.00200		1,040	58.01
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200		1,050	58.06
	(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400		1,000	58.00
	(³) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	267	1,050	58.12
TMW-3	09/23/2019							
	12/26/2019							
	(³) 09/30/2020		0.00322	<0.00200	0.00448	212	891	57.62
	(³) 12/07/2020				<0.00200		948	57.68
	(³) 03/11/2021			<0.00200	<0.00400		900	57.59
	(³) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	57.90
TMW-4	09/23/2019							
	12/26/2019							
	(³) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	57.39
	(³) 12/07/2020		<0.00200	<0.00200	<0.00200		2,300	57.45
	(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400		1,960	57.40
	(³) 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400		1,190	57.60

Table 2 1RP-5636

Groundwater Sample Analytical Data Summary Apache Corporation, EBDU 37, Lea County, New Mexico

DUP-1 (Windmill)	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	276	794	
DUP-1 (Windmill)	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	278	908	
DUP-1 (Windmill)	(³) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	259	798	
DUP-1 (Windmill)	(³) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	256	781	

Notes:

('): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).

(²): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

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

(4): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride). Units reported as ug/L in report, converted to mg/L.

- < values: concentration is less than method reporting limit (RL).
- *: NMWQCC Human Health Standard
- **: NMWQCC Domestic Water Quality Standard
- --: no data available

TOC: top of casing

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

Bold and highlighted denotes analyte concentration exceeds NMWQCC domestic water quality standard



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-3001-1

Laboratory Sample Delivery Group: 19-0112-49

Client Project/Site: Apache - EBDU #37

For:

Larson & Associates, Inc. 507 N Marienfeld Suite 202 Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by: 6/21/2021 7:31:18 AM

Holly Taylor, Project Manager (806)794-1296

holly.taylor@eurofinset.com

Links

Review your project results through

Total Access

01017 10000

Have a Question?



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 1/9/2025 3:59:36 PM M

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

6

8

9

11

12

Client: Larson & Associates, Inc.

Project/Site: Apache - EBDU #37

Laboratory Job ID: 880-3001-1

SDG: 19-0112-49

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	8
QC Sample Results	9
QC Association Summary	12
Lab Chronicle	13
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Pagaint Chacklists	10

2

3

4

6

8

10

11

Definitions/Glossary

Job ID: 880-3001-1 Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37 SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier **Qualifier Description**

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) Limit of Quantitation (DoD/DOE) LOQ

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDI Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL **Practical Quantitation Limit**

PRES Presumptive QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.

Project/Site: Apache - EBDU #37

Job ID: 880-3001-1

SDG: 19-0112-49

Job ID: 880-3001-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative 880-3001-1

Receipt

The samples were received on 6/14/2021 8:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.0°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37

Result Qualifier

360

Job ID: 880-3001-1

SDG: 19-0112-49

Client Sample ID: TMW-1 Date Collected: 06/10/21 10:23

Lab Sample ID: 880-3001-1 Matrix: Water

Date Received: 06/14/21 08:37

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 15:31	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 15:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 15:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 15:31	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 15:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 15:31	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 15:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130		-		06/14/21 15:31	1
1,4-Difluorobenzene (Surr)	103		70 - 130				06/14/21 15:31	1
Method: 300.0 - Anions, Ion C	hromatography							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.5		0.500	mg/L			06/15/21 15:43	1

Client Sample ID: TMW-2 Lab Sample ID: 880-3001-2

RL

50.0

Unit

mg/L

Prepared

Analyzed

06/16/21 18:56

Dil Fac

Date Collected: 06/10/21 12:00 **Matrix: Water**

Date Received: 06/14/21 08:37

Analyte

Total Dissolved Solids

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 15:57	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 15:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 15:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 15:57	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 15:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 15:57	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 15:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130		-		06/14/21 15:57	1
1,4-Difluorobenzene (Surr)	102		70 - 130				06/14/21 15:57	1
Method: 300.0 - Anions, Ion C	hromatography							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			2.50	mg/L			06/15/21 15:49	5
Chloride	267							
Chloride General Chemistry	267							
•		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Date Received: 06/14/21 08:37

Client Sample Results

Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37 Job ID: 880-3001-1 SDG: 19-0112-49

Client Sample ID: TMW-3 Lab Sample ID: 880-3001-3 Date Collected: 06/10/21 11:05

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	•
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	•
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 16:22	
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 16:22	
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 16:22	

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112	70 - 130		06/14/21 16:22	1
1,4-Difluorobenzene (Surr)	107	70 - 130		06/14/21 16:22	1

Method: 300.0 - Anions, Ion Chromatography									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	180		2.50	mg/L	 _		06/15/21 15:56	5

General Chemistry							
Analyte	Result Qualif	fier RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	934	50.0	mg/L			06/16/21 18:56	1

Lab Sample ID: 880-3001-4 **Client Sample ID: TMW-4**

ate Collected: 06/11/21 10:50										
Date Received: 06/14/21 08:37										
Method: 8021B - Volatile Organ	ic Compounds (GC)									
Analyte	Posult Qualifier	DI	Unit	n	Drongrad	hazvled	Dil Fac			

Method: 8021B - Volatile Or	ganic Compounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 16:48	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 16:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 16:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 16:48	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 16:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 16:48	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130		06/14/21 16:48	1
1,4-Difluorobenzene (Surr)	105		70 - 130		06/14/21 16:48	1

Method: 300.0 - Anions, Ion Chromatography									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	745		10.0	mg/L			06/15/21 16:18	20

General Chemistry								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1990		100	mg/L			06/16/21 18:56	1

Client Sample Results

Client: Larson & Associates, Inc. Job ID: 880-3001-1 Project/Site: Apache - EBDU #37 SDG: 19-0112-49

Client Sample ID: Windmill

Date Collected: 06/10/21 12:26

Lab Sample ID: 880-3001-5 Matrix: Water

Date Received: 06/14/21 08:37

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 17:13	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 17:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 17:13	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 17:13	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 17:13	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 17:13	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 17:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130		-		06/14/21 17:13	1
1,4-Difluorobenzene (Surr)	102		70 - 130				06/14/21 17:13	1
Method: 300.0 - Anions, Ion C	hromatography							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	255		2.50	mg/L			06/15/21 16:25	5
General Chemistry								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: Dup-1 Lab Sample ID: 880-3001-6

Date Collected: 06/10/21 00:00 Matrix: Water

Date Received: 06/14/21 08:37

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 18:57	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 18:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 18:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 18:57	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 18:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 18:57	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 18:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130		-		06/14/21 18:57	1
1,4-Difluorobenzene (Surr)	88		70 - 130				06/14/21 18:57	1
Method: 300.0 - Anions, Ion C	hromatography							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	256		2.50	mg/L			06/15/21 16:32	5
General Chemistry								
	Pecult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifier	IXL	Oilit		riepaieu	Allalyzeu	Dilliac

Surrogate Summary

Client: Larson & Associates, Inc.

Project/Site: Apache - EBDU #37

SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-2930-A-1 MS	Matrix Spike	99	104	
880-2930-A-1 MSD	Matrix Spike Duplicate	100	101	
380-3001-1	TMW-1	108	103	
380-3001-2	TMW-2	105	102	
380-3001-3	TMW-3	112	107	
380-3001-4	TMW-4	110	105	
380-3001-5	Windmill	107	102	
380-3001-6	Dup-1	116	88	
_CS 880-4074/3	Lab Control Sample	104	104	
CSD 880-4074/4	Lab Control Sample Dup	99	107	
MB 880-4074/8	Method Blank	71	84	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

Client: Larson & Associates, Inc. Job ID: 880-3001-1 Project/Site: Apache - EBDU #37 SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-4074/8

Matrix: Water Analysis Batch: 4074 Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 06/14/21 12:59 4-Bromofluorobenzene (Surr) 71 70 - 130 1,4-Difluorobenzene (Surr) 84 70 - 130 06/14/21 12:59

0.100

0.09672

Lab Sample ID: LCS 880-4074/3

Matrix: Water

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 4074

Client Sample ID: Lab Control Sample Prep Type: Total/NA

70 - 130

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits D 0.100 0.09419 mg/L 94 70 _ 130 0.100 70 _ 130 0.1038 mg/L 104 0.100 0.1078 mg/L 108 70 - 130mg/L 0.200 0.1914 96 70 - 130

mg/L

LCS LCS Surrogate %Recovery Qualifier Limits 104 70 - 130 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) 104 70 - 130

Lab Sample ID: LCSD 880-4074/4

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

97

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09313		mg/L		93	70 - 130	1	20
Toluene	0.100	0.1006		mg/L		101	70 - 130	3	20
Ethylbenzene	0.100	0.1055		mg/L		106	70 - 130	2	20
m-Xylene & p-Xylene	0.200	0.1875		mg/L		94	70 - 130	2	20
o-Xylene	0.100	0.09438		mg/L		94	70 - 130	2	20

	LCSD LCS	D
Surrogate	%Recovery Qua	lifier Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: 880-2930-A-1 MS

Matrix: Water

Analysis Batch: 4074

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.00880		0.100	0.1055		mg/L		97	70 - 130

Eurofins Xenco, Midland

Prep Type: Total/NA

Client Sample ID: Matrix Spike

Page 9 of 19

Client: Larson & Associates, Inc. Job ID: 880-3001-1 Project/Site: Apache - EBDU #37 SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-2930-A-1 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4074

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Toluene	0.0123		0.100	0.1165		mg/L		104	70 - 130	
Ethylbenzene	<0.00200	U	0.100	0.1064		mg/L		106	70 _ 130	
m-Xylene & p-Xylene	0.00594		0.200	0.1952		mg/L		95	70 - 130	
o-Xylene	<0.00200	U	0.100	0.09681		mg/L		96	70 - 130	

MS MS %Recovery Qualifier

Surrogate Limits 70 - 130 4-Bromofluorobenzene (Surr) 99 1,4-Difluorobenzene (Surr) 104 70 - 130

Lab Sample ID: 880-2930-A-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4074

7 many ord Datem 101 i											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.00880		0.100	0.09846		mg/L		90	70 _ 130	7	25
Toluene	0.0123		0.100	0.1114		mg/L		99	70 - 130	4	25
Ethylbenzene	<0.00200	U	0.100	0.1028		mg/L		103	70 _ 130	3	25
m-Xylene & p-Xylene	0.00594		0.200	0.1878		mg/L		91	70 - 130	4	25
o-Xylene	<0.00200	U	0.100	0.09330		mg/L		92	70 - 130	4	25

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4120/3 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 4120

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			06/15/21 14:49	1

Lab Sample ID: LCS 880-4120/4 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 4120

	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier	Unit	D %Re	ec Limits	
Chloride	25.0	23.77		mg/L		90 - 110	

Lab Sample ID: LCSD 880-4120/5 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 4120

	Spik	e LCSD	LCSD				%Rec.		RPD
Analyte	Adde	d Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	25.	23.31		mg/L		93	90 - 110	2	20

Eurofins Xenco, Midland

Prep Type: Total/NA

Client: Larson & Associates, Inc. Job ID: 880-3001-1 Project/Site: Apache - EBDU #37 SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-3041-A-1 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4120

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	16.4		25.0	40.52		mg/L		96	90 - 110	

Lab Sample ID: 880-3041-A-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4120

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	16.4		25.0	41.69		mg/L		101	90 - 110	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-4150/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4150

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0	mg/L			06/16/21 18:56	1

Lab Sample ID: LCS 880-4150/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4150

		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Dissolved Solids	 	1000	989.0		ma/L		99	80 - 120	

Lab Sample ID: LCSD 880-4150/3 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 4150

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Total Dissolved Solids	 1000	997.0		mg/L		100	80 - 120	1	10	

Lab Sample ID: 880-3001-1 DU Client Sample ID: TMW-1 Prep Type: Total/NA

Matrix: Water Analysis Batch: 4150

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D **RPD** Limit **Total Dissolved Solids** 360 363.0 mg/L 10

Eurofins Xenco, Midland

6/21/2021

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-3001-1 Project/Site: Apache - EBDU #37 SDG: 19-0112-49

GC VOA

Analysis Batch: 4074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3001-1	TMW-1	Total/NA	Water	8021B	
880-3001-2	TMW-2	Total/NA	Water	8021B	
880-3001-3	TMW-3	Total/NA	Water	8021B	
880-3001-4	TMW-4	Total/NA	Water	8021B	
880-3001-5	Windmill	Total/NA	Water	8021B	
880-3001-6	Dup-1	Total/NA	Water	8021B	
MB 880-4074/8	Method Blank	Total/NA	Water	8021B	
LCS 880-4074/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-4074/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-2930-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
880-2930-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

HPLC/IC

Analysis Batch: 4120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-3001-1	TMW-1	Total/NA	Water	300.0	_ ;
880-3001-2	TMW-2	Total/NA	Water	300.0	
880-3001-3	TMW-3	Total/NA	Water	300.0	
880-3001-4	TMW-4	Total/NA	Water	300.0	
880-3001-5	Windmill	Total/NA	Water	300.0	
880-3001-6	Dup-1	Total/NA	Water	300.0	
MB 880-4120/3	Method Blank	Total/NA	Water	300.0	
LCS 880-4120/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-4120/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-3041-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-3041-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
880-3001-1	TMW-1	Total/NA	Water	SM 2540C	
880-3001-2	TMW-2	Total/NA	Water	SM 2540C	
880-3001-3	TMW-3	Total/NA	Water	SM 2540C	
880-3001-4	TMW-4	Total/NA	Water	SM 2540C	
880-3001-5	Windmill	Total/NA	Water	SM 2540C	
880-3001-6	Dup-1	Total/NA	Water	SM 2540C	
MB 880-4150/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-4150/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-4150/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-3001-1 DU	TMW-1	Total/NA	Water	SM 2540C	

Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37

Lab Sample ID: 880-3001-1

Matrix: Water

Client Sample ID: TMW-1 Date Collected: 06/10/21 10:23

Date Received: 06/14/21 08:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 15:31	MR	XEN MID
Total/NA	Analysis	300.0		1			4120	06/15/21 15:43	CH	XEN MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	4150	06/16/21 18:56	SC	XEN MID

Client Sample ID: TMW-2 Lab Sample ID: 880-3001-2

Date Collected: 06/10/21 12:00 **Matrix: Water**

Date Received: 06/14/21 08:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 15:57	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 15:49	CH	XEN MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	4150	06/16/21 18:56	SC	XEN MID

Client Sample ID: TMW-3 Lab Sample ID: 880-3001-3 Date Collected: 06/10/21 11:05 **Matrix: Water**

Date Received: 06/14/21 08:37

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab XEN MID Total/NA Analysis 8021B 5 mL 4074 06/14/21 16:22 MR 5 mL Total/NA Analysis 300.0 5 4120 06/15/21 15:56 СН XEN MID 200 mL 06/16/21 18:56 SC XEN MID Total/NA Analysis SM 2540C 1 100 mL 4150

Lab Sample ID: 880-3001-4 Client Sample ID: TMW-4 **Matrix: Water**

Date Collected: 06/11/21 10:50 Date Received: 06/14/21 08:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 16:48	MR	XEN MID
Total/NA	Analysis	300.0		20			4120	06/15/21 16:18	СН	XEN MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	4150	06/16/21 18:56	sc	XEN MID

Client Sample ID: Windmill Lab Sample ID: 880-3001-5

Date Collected: 06/10/21 12:26 Date Received: 06/14/21 08:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 17:13	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:25	СН	XEN MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	4150	06/16/21 18:56	SC	XEN MID

Eurofins Xenco, Midland

Matrix: Water

Lab Chronicle

Client: Larson & Associates, Inc.

Project/Site: Apache - EBDU #37

Job ID: 880-3001-1

SDG: 19-0112-49

Client Sample ID: Dup-1 Lab Sample ID: 880-3001-6

Date Collected: 06/10/21 00:00 Matrix: Water
Date Received: 06/14/21 08:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 18:57	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:32	СН	XEN MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	4150	06/16/21 18:56	SC	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

-

3

A

5

7

8

10

12

13

Accreditation/Certification Summary

Client: Larson & Associates, Inc.

Job ID: 880-3001-1

Project/Site: Apache - EBDU #37

SDG: 19-0112-49

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pro	ogram	Identification Number	Expiration Date	
Texas	NE	ELAP	T104704400-20-21	06-30-21	
The following analytes	are included in this report, bu	t the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for wl	
the agency does not of	fer certification.	•	ied by the governing authority. This list ma	ay include analytes for wl	
	•	t the laboratory is not certif Matrix	ied by the governing authority. This list ma	ay include analytes for wl	

4

<u>ء</u>

10

11

13

Method Summary

Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37

Job ID: 880-3001-1

SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	XEN MID
5030B	Purge and Trap	SW846	XEN MID

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Midland

2

3

4

7

8

11

13

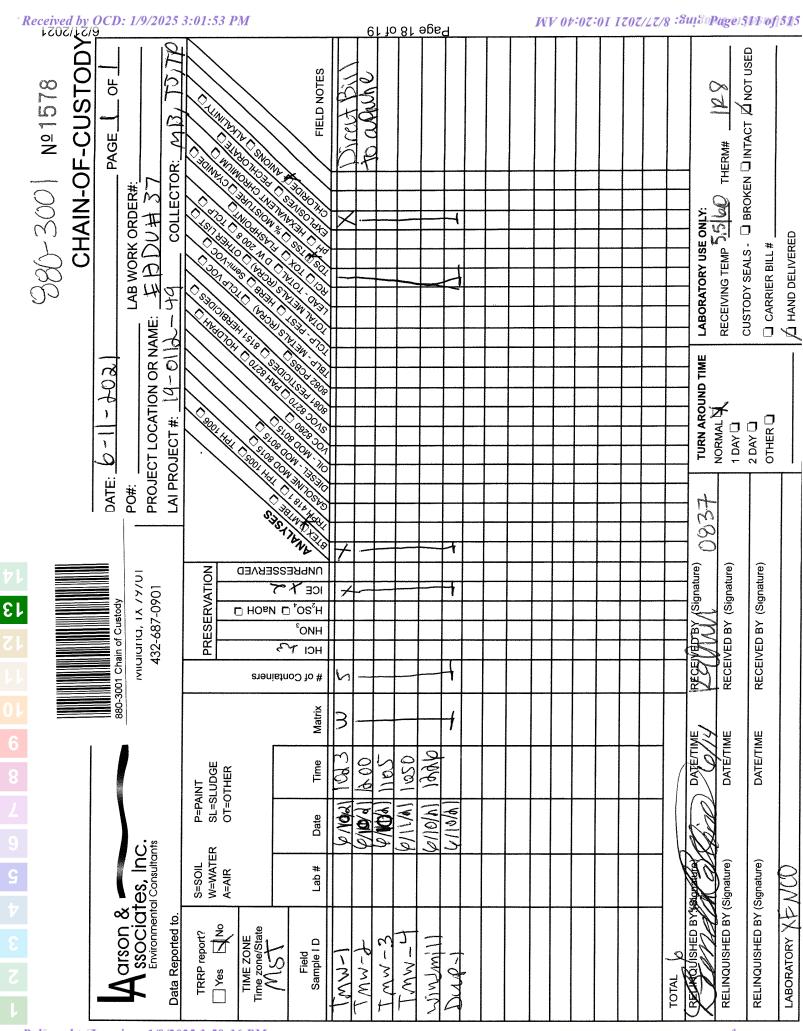
Ш

Sample Summary

Client: Larson & Associates, Inc. Project/Site: Apache - EBDU #37 Job ID: 880-3001-1

SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-3001-1	TMW-1	Water	06/10/21 10:23	06/14/21 08:37	
880-3001-2	TMW-2	Water	06/10/21 12:00	06/14/21 08:37	
880-3001-3	TMW-3	Water	06/10/21 11:05	06/14/21 08:37	
880-3001-4	TMW-4	Water	06/11/21 10:50	06/14/21 08:37	
880-3001-5	Windmill	Water	06/10/21 12:26	06/14/21 08:37	
880-3001-6	Dup-1	Water	06/10/21 00:00	06/14/21 08:37	



Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-3001-1

SDG Number: 19-0112-49

Login Number: 3001 List Source: Eurofins Xenco, Midland

List Number: 1

Creator: Phillips, Kerianna

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Eurofins Xenco, Midland

Released to Imaging: 1/9/2025 3:59:36 PM M

2

3

4

7

ŏ

10

12

13

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III 1000 Rio Brazos Rd., Aztec, NM 87410

Phone:(505) 334-6178 Fax:(505) 334-6170 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 17562

COMMENTS

Operator:	OGRID:
APACHE CORPORATION	873
303 Veterans Airpark Ln Midland, TX 79705	Action Number: 17562
	Action Type:
	[C-141] Release Corrective Action (C-141)

COMMENTS

Created By	Comment	Comment Date
chensley	Waiting on 1&2 quarter reports	8/5/2021

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 17562

CONDITIONS

Operator:	OGRID:
APACHE CORPORATION	873
303 Veterans Airpark Ln	Action Number:
Midland, TX 79705	17562
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	8/27/2021

Sante Fe Main Office Phone: (505) 476-3441

General Information Phone: (505) 629-6116

Online Phone Directory https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS

Action 419159

QUESTIONS

Operator:	OGRID:
APACHE CORPORATION	873
303 Veterans Airpark Ln	Action Number:
Midland, TX 79705	419159
	Action Type:
	[HEAR] Prehearing Statement (PREHEARING)

QUESTIONS

Testimony		
Please assist us by provide the following information about your testimony.		
Number of witnesses	3	
Testimony time (in minutes)	240	