

## ROSA ROMERO

Ruidoso, NM 88345 | 575 -590-3459 | [rosa4100@gmail.com](mailto:rosa4100@gmail.com)

### SKILLS PROFILE

- Supervisory Experience in both field and office setting.
- Skilled with field data collection and survey methods, including the use of backpack electrofishing units, bag seines, and gill nets, as well as radio telemetry, substrate and large woody debris data collection.
- Proficient using Field Data Recorders, GPS units, and other technical equipment.
- Recognized for quality use and experience of various software/hardware troubleshooting and instruction.
- Experience working/living in harsh conditions.
- Experience in teaching, advising in technical training programs and university coursework.
- FEMA Emergency Response Certifications 100, 200, 700 and 800, Emergency Management trained

### EDUCATION

#### **Bachelor's Degree**

Western New Mexico University, Silver City, NM  
**BS Zoology & Botany minor -2007**

### EMPLOYMENT HISTORY

#### **OCD Environmental Bureau Chief – New Mexico Office Energy Minerals & Natural Resource Dept. -04/2022-Present** *Artesia, NM*

- Oversees and manages the Oil Conservation Divisions Environmental Bureau, including the Administrative Permitting Programs, the Environmental Incidents Program, and the Environmental Projects and Compliance group to ensure OCD goals and objectives are met.
- Recommends selection of applicants, conducts training of personnel, acts upon leave requests, conducts performance evaluations administers disciplinary actions.
- Coordinates and implements OCD programs with OCD staff to ensure legal requirements are met.
- Advises senior management on legal and management issues, policies and rules.
- Has an in depth familiarity with the Oil and Gas Act and Rules and the Water Quality Act and Rules.

#### **Water Resource Professional III – New Mexico Office of the State Engineer. -03/2019-04/2022** *Roswell, NM*

- Performed advanced water rights analyses for water right applications and made technical recommendations for administrative decisions for water right applications of a complex nature, including modeling parameters, model sensitivity analysis, validity and pertinence of water rights and documentation, analysis of variance requests for well construction and abandonment.
- Provided technical support to junior professionals. Communicated complex water right issues to other agency staff including public attorneys, hydrologists, and engineers from other bureau's. Oversaw and monitored agency compliance with federal and state regulations, served as an expert witness on water resource matters.
- Determined appropriate actions for noncompliance issues. Completed investigations in which no agency specific guidelines existed.
- Performed water data collection and analysis, including groundwater and surface water analysis and calculation of irrigation water requirements. Reviewed and made recommendations on groundwater and surface water rights documents and applications in accordance with rules and regulations.
- Reviewed water resource permit applications and participated in special projects including field water level measurements, compliance issues and corrective actions, and drafted technical reports based on data collection and analysis.
- Performed stream flow measurements including stream gage operations, hydrologic calculations, data management and analysis. Groundwater and surface water analysis. Performed independent water inspections and investigations.
- Evaluated data, performed in depth data analysis using analytics, computer models and GIS databases.
- Participated in interagency water management and planning efforts to effectively manage water resources and the local regional and basin or interstate scale.

**Environmental Scientist, State of New Mexico Environment Dept.-12/2013-03/2019**

*Ruidoso, NM*

- Used knowledge of the natural sciences to protect the environment by identifying problems and finding solutions that minimize hazards to the health of the environment and the population.
- Analyzed measurements or observations of food, water, and soil to determine regulatory compliance.
- Understood the issues involved and found solutions to protect the environment from degradation, utilized this understanding to design and monitor waste disposal sites, preserve water supplies.
- Conducted research and perform investigations for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Utilized knowledge of various scientific disciplines to collect, synthesize, study, report and take actions based on data derived from measurements or observations of food, soil, water, and other sources. Review plans and permit applications for regulatory compliance and issue construction permits for food, liquid waste, and pool facilities. Completed inspections of construction sites at food facilities and new aquatic facilities for regulatory compliance.
- New Mexico State Representative for the Counsel for the Model Aquatic Health Code, voting member for review of changes to upcoming codes.
- NSPF Certified Pool Operator, Field Service Professional, Inspector, and Recreational Water Illness Certifications, NLAFT, NSPF and ATI Qualified Operator Certified.
- Reviewed course certification materials for compliance with the MAHC
- NLAFT Certified Instructor for Qualified Operators
- Work on the 2-5K liquid waste team to permit and transfer liquid waste system to EHB from Groundwater Bureau.
- Review and approve ATS liquid waste permits; monitor ATS maintenance.
- Certification and continuing educational in all areas of environmental health sciences.
- Educated the general public on federal and state environmental policies.

**New Mexico State University, Adjunct Professor-08/2014-05/2015**

*Alamogordo, NM*

- Developed and managed syllabus materials. Was responsible for selecting and compiling tests, assignments and/or online discussion exercises that permit measurement of performance relative to standardized learning objectives.
- Coordinated courseware and curriculum, reviewing any textbook and other courseware changes with the academic department chair and other full-time faculty teaching the course.
- Facilitated Class Instruction and teaching the Human Biology Lab in accordance with learning objectives and session plan outlines specified by the NMSU and coordination of lab material with attached curriculum.
- Evaluated Student Performance. Administered evaluations of student performance based on course deliverables and course rubrics.

**Wildlife Technician, United States Forest Service-05/2011-10/2012**

*Reserve, NM*

- Participated in large scale ecosystem restoration project using NEPA guidelines to edit, and evaluate for the Burro Analysis for the Restoration of Forest Health project. Proofread for the final environmental assessment, comment analysis and analyzed effector determinations for resident Mexican Spotted Owl, Chiricahua Leopard frog and Northern Goshawk populations.
- Planning, maintenance and recovery efforts in collaboration with the US Fish and Wildlife Services and private property owners for Chiricahua Leopard frog ranariums located within the reserve ranger districts. Extant populations captured, recovered and bred in captivity for reintroduction into the wild. Created training materials for statewide CLF survey protocols.
- Crew Leader and supervisor for 2-8 man crew performing inventory and monitoring of threatened and endangered species in the Gila National Forest with special focus on Mexican Spotted Owl, Chiricahua Leopard frog and Northern Goshawk.
- Federal trainings for fire, security awareness, defensive driving, first aid, CPR, horseback, ATV, and survey protocols for Mexican Spotted Owl, Chiricahua Leopard frog and Northern Goshawk. Participated in range monitoring, range transect surveys and acted as contact person for department including inter and intra agency coordination.

- Maintained daily observation records of endangered species, feedings and facilities maintenance for breeding habitats and captive facilities, including the planning and construction of a sterile ranarium for endangered amphibians. Completed large scale breeding and reintroduction project and participated in housing design for salvaged garter snake population.

**State of New Mexico Human Services Department-06/2008-04/2011**

*Silver City, NM*

- Interpretation and utilization of Federal and State policies and procedures to ensure efficiency and accuracy of state and federal benefits issued applicants. Documentation and accurate record keeping of confidential and legal data. Ensure statistical goals and deadlines are met.
- Head chair of the department's safety committee. Assessed working conditions and handled formal and informal complaints.
- Organized safety training and instructed employees on proper safety policies and procedures.
- Educated the general public in policies and procedures to obtain accurate data collection, handles client complaints, customer service and outreach programs.

**Office Manager- Signal Peak, Inc.-02/2005-06/2008**

*Silver City, NM*

- Distributed workload among employees and checked status and progress of work, making necessary adjustments. Served as the first-line interpreter of the protocol for employees. Assessed working conditions and ensured work is done safely and efficiently. Monitors performance and handled informal complaints among employees. Maintained reports on employee performance and recorded work time and leave of employees.
- Performs database review to assess errors and make appropriate corrections to database in Microsoft Access, Optigold and led technical training and presentations on technical processes and procedures based on factual data.
- Created and maintained technical reports and summaries for business purposes, including instructions for technical processes and business reports for research of anticipated fluctuations in revenue, equipment and supply inventory, budgeting for business growth, and customer data.

**Western New Mexico University – Project Assistant-12/2006-08/2007**

*Silver City, NM*

- Assisted in identifying habitat selection cues among rodent communities along a desert riparian cienega. Trapped, handled, and identified rodent, fish, amphibian and mammal species. Surveyed vegetation and identified individual plantspecies.
- Data collected was analyzed using Microsoft Excel, Pc Ordination, and SAS software, and an oral and written report were given.
- Used commonly accepted fisheries and aquatic techniques to collect a variety of field data concerning watershed health including, but not limited to: surveying channel profiles, tallying wood occurrences, measuring substrate dimensions, searching for terrestrial amphibians, collecting biological samples and using water chemistry meters.
- Organized and reviews data from data sheets and field data recorders (FDR's) to identify missing, illegible and/or incorrect data, and make necessary corrections. Downloads data from FDR's, GPS units and water chemistry meters into electronic spreadsheets and/or tables using various software programs.

**Western New Mexico University-Con Confianza-Laboratory Assistant/ Mentor- 08/2004-05/2005**

*Silver City, NM*

- Mentoring, counseling, and tutoring of students, and coordination of events between various departments. Teaching proper surveying techniques, equipment maintenance, appropriate handling of chemical compounds, working with aerosols, and neutralization of acidic compounds and disposal of laboratory hazardous materials to students.
- Preparation of agar, slants and other test media, bacterial analysis, gram staining and incubation of media, the identification of micro-organisms and bacteria from water samples.
- Instruction of onsite water quality tests for temperature, pH, Dissolved Oxygen (DO), and conductivity and the detection of pathogenic bacteria in water samples.

**Stream International – Senior Support Services Manager -10/2002-03/2004**  
*Silver City, NM*

- Supervised a team of representatives, and trained incoming representatives in technical processes, and office procedures for major corporations.
- Computer hardware repair and replacement of PC hardware components and became proficient in the use of Microsoft products and internet-based programs and various software needed to resolve PC hardware and software issues.
- Resolved conflicts with customer satisfaction issues.

**Phelps Dodge Mining Company-Security - 11/2000-10/2002**  
*Morenci, AZ*

MSHA and HAZMAT trained safety training visitors to the mine, ensured security procedures were followed for the protection of property and employees.

- Trained in basic first aid and management of situations in which dangerous materials are exposed.
- Detected safety threats and participated in the proper clean-up of hazardous materials.
- Dispatched for Fire, and accident EMS.

PROFESSIONAL PUBLICATIONS

- Lead author of a technical presentation and publication for The Wildlife Society, February 2013, entitled *Quick Response Experimental Post-Wildfire Translocation on the Narrow Headed Gartersnake (Thamnophis rufipunctatus)*.
- Co-Presented a technical dissertation for New Mexico Network for Women in Science and Engineering annual meeting, October 28, 2006, entitled *The Importance of the Preservation of Native Wildlife of the Southwest*.

VOLUNTEER WORK

- Fort Stanton Cave Restoration Project. 2019-present
- Expanding Your Horizons in Science and Mathematics Annual Conference. 2005-2011
- New Mexico Network for Women in Science and Engineering 2007-2010

REFERENCES

Jack king                      State of New Mexico Environment Department Bureau Chief (Retired)  
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Eugene Knight              State of New Mexico Environment Department Program Manager (Retired)  
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Howie Morales              NM State Governors Office District 28  
Contact info: 575-590-7804



# Apache Corporation (873)

East Blinebry Drinkard Unit #37 (30-025-06556)

Incident #nDHR1922141227 (1RP-5636)

Incident Timeline of Remediation and Subsurface Investigation

# Presentation Overview

- This presentation provides a detailed timeline of events related to the remediation and investigation efforts for the East Blinebry Drinkard Unit #37 (EBDU #37) incident. The content for each slide is derived from comprehensive substance material and serves to chronologically document key milestones, decisions, and actions taken.
- Structure:
  - Initial discovery and incident description.
  - Remediation plans and updates.
  - Soil and groundwater sampling results.
  - Stakeholder meetings and regulatory communications.
  - Future plans and compliance strategies.

Note: The primary focus is on presenting a timeline of events rather than exhaustive technical details.

## Nature and Volume of the release

**Date of Discovery:** July 14, 2019

**Location:** Corroded isolation valve at pipeline junction approximately 720 feet east of East Blinebry Drinkard Unit #37 (EBDU 37).

**Initial C-141 Received Date:** July 26, 2019

- **Released Volumes:** Unknown amount of produced water and crude oil.

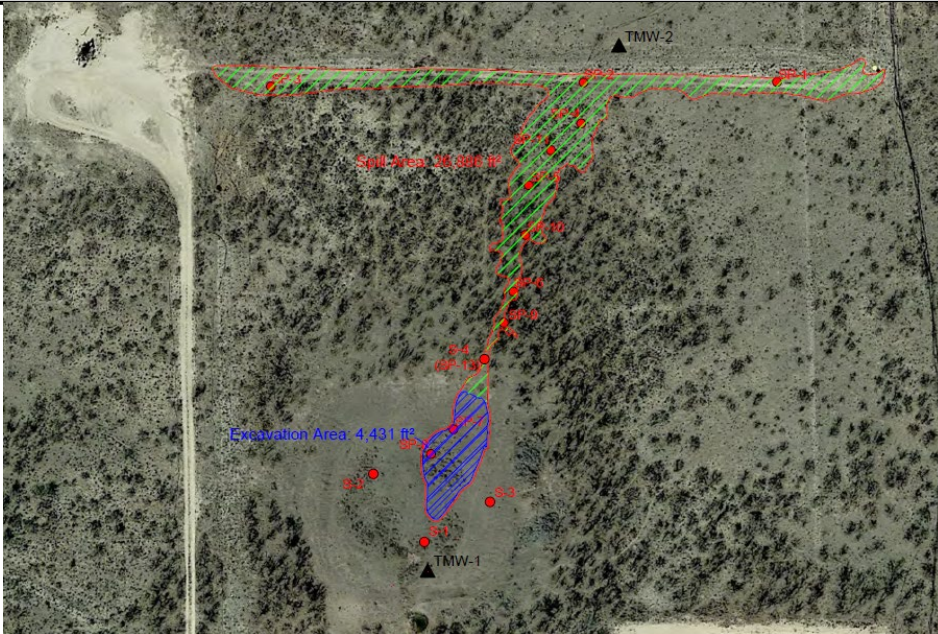
## Remediation Plan

**Date Received:** November 7, 2019

- **Description of release:** “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.”<sup>1</sup>

### Soil Sampling

Soil sampling at the site occurred between July 17, 2019 and September 19, 2019. Numerous sample were reported above applicable closure criteria.



### Groundwater Sampling

- **August 1, 2019:** Groundwater sample from the windmill, approximately 300 feet south of the terminal of the release collected.
- **September 24, 2019:** Samples collected from 2 groundwater monitoring wells drilling on September 19, 2019 and developed on September 23, 2019.

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)
QCC Standard:		*0.01	*0.75	*0.75	*0.62	**250	**1,000
(1) 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:

(1) 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

# Soil Sample Analytical Data

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (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
	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
Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (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
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

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50				100	600
SP-13 (S-4/NB)	15	08/28/2019	In-Situ	*<0.050	*<0.600	*<10.0	*<10.0	*<10.0	*<10.0	2,880
	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										
B0	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)										
<: denotes concentration less than analytical method reporting limit										
* Represents possible cross contamination from trackhoe during sample collection										
Highlighted denotes concentration above chloride remediation level (600 mg/Kg) in Table 1 (19.15.29 NMAC)										

Sample	Depth (Feet)	Collection Date	Status (mg/Kg)	Chloride (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
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	

2-0008

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

## **Remediation Plan Continued**

**Date:** December 23, 2019 - Email from the operator's consultant (Larson & Associates, Inc.) was sent to OCD providing details of a telephone conversation held with former OCD employee, Mr. Bradford Billing, which occurred on December 20, 2019. This email served as an addendum to the remediation plan, which included:

- "Installing 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 ground water is encountered.
- Installation of 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.
- Close the excavation at Area 1 according to the remediation plan dated October 29, 2019.
- 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."<sup>2</sup>

OCD representative Mr. Bradford Billings approved the workplan addendum on December 23, 2019.

**Date:** July 01, 2020 - Correspondence between the OCD and Apache allowed a three (3) week extension to complete the soil remediation for the release. Extension was approved by OCD on July 8, 2020, with a new due date of July 27, 2020.

## August 2020 Addendum to Remediation Plan

**Date:** August 7, 2020 - Email received indicating:

- Completion of backfilling the deep excavation (Area 2) with clean caliche to approximately five (5) feet 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.
- On August 3, 2020, soil samples collected near the center of the excavation (BH-1) and chloride results were:
  - 10 feet – 11.6 mg/kg
  - 12 feet – 13.3 mg/kg
  - 14 feet – 13.4 mg/kg
  - 16 feet – 22.9 mg/kg
  - 20 feet – 24.7 mg/kg
- Email states previous samples from B15 collected August 8, 2019 indicated possible sample cross contamination (see slide 3).
- Approval requested for additional delineation samples to be collected via Geoprobe from four locations (north, south, east, and west) from BH-1 at depths of 10, 12, 14, 16, 18, and 20 feet and analyze the samples for chloride.
- Approval to forego installing the 20 mil thickness polyethylene liner at the bottom of the “large” excavation if chloride concentrations were below 600 mg/kg chloride (OCD closure criteria).
- OCD approved modification of remediation plan on August 10, 2020.

**Date:** August 13, 2020 – Email received indicating that soil sampling was completed on August 11, 2020 and chloride results were:

- BH-3 at 10 feet – 774 mg/kg
- BH-3 at 12 feet – 666 mg/kg
- BH-3 at 14 feet – 419 mg/kg
- 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 topsoil from 3 feet to ground surface.
- Drilling and installation of two (2) monitoring wells was scheduled for August 18, 2020.

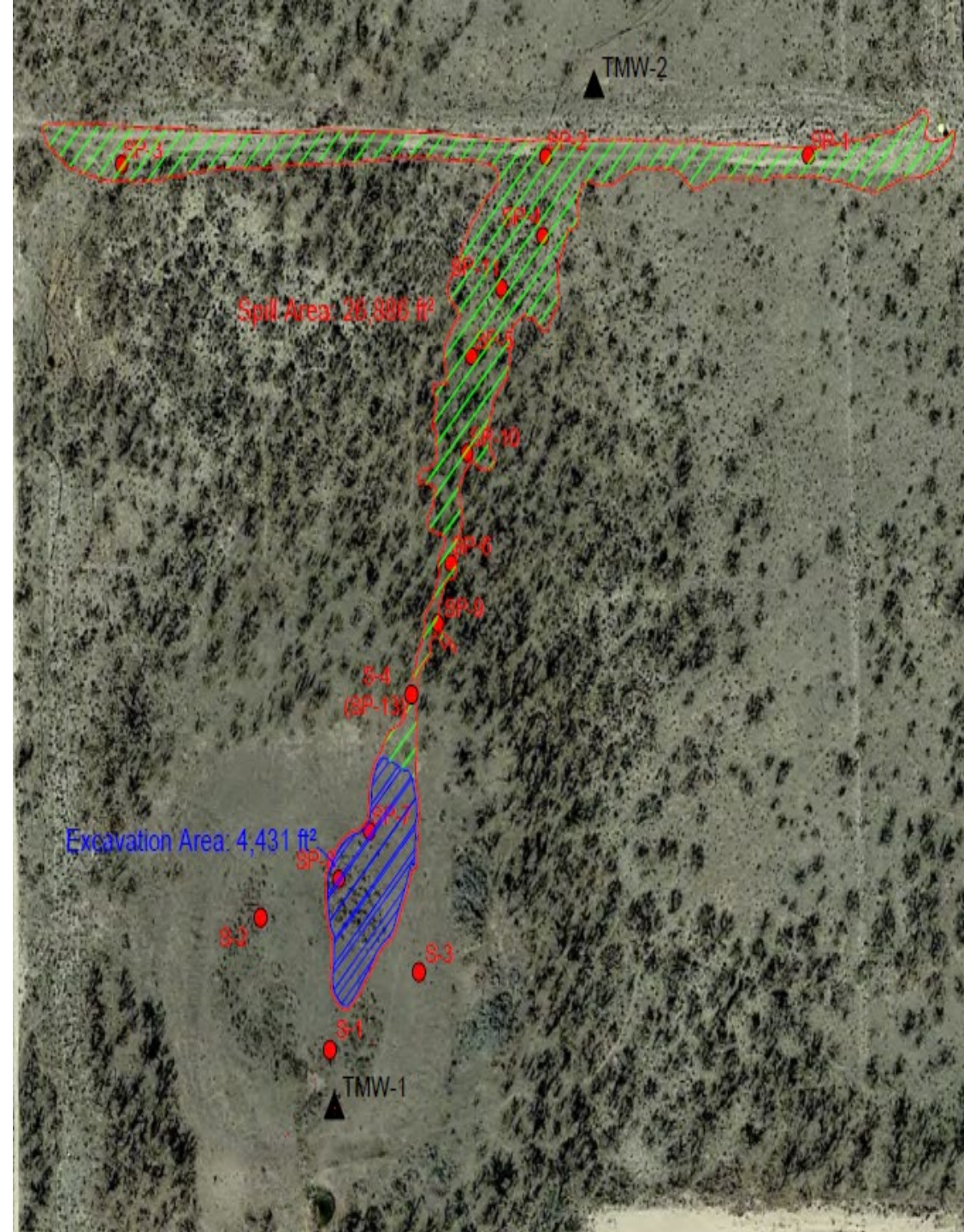


## August 2020 Addendum to Remediation Plan Continued

- **Date:** September 1, 2020 – Email received as confirmation of telephone call:
  - NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil.
  - 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 to NMOCD at least 7 days excluding weekends prior to installing monitoring wells.
- On September 1, 2020, OCD confirmed that the above was agreed to in the telephone conversation.

## Remediation Closure Report

- **Date:** February 9, 2021 – Remediation Closure Report received by OCD.
  - Spill Area 1 measured 26,886 square feet.
  - Spill Area 2 measured 4,431 square feet.
  - Sidewall samples were collected every 200 square feet for a total of thirty-eight (38) five-point composite confirmation soil samples.
    - Total petroleum hydrocarbons (TPH) as gasoline range organics (GRO), diesel range organics (DRO), and oil range organics (ORO) were below OCD closure criteria.
    - BTEX concentrations were below OCD closure criteria.
    - Chloride concentrations were above OCD closure criteria in twenty (20) of the thirty-eight (38) five-point composite confirmation soil samples collected from the excavation sidewalls.
    - By August 4, 2020 all remaining excavation sidewall samples returned results below OCD closure criteria.
    - Excavation base composite confirmation soil samples were not collected.
      - Excavation base samples were collected as grab samples that were collected at 10, 12, 14, 16, 18, 20 and 25 feet bgs in BH-2, BH-3, and BH-4. Grab samples were collected at 10, 12, 14, 16, 18, 20 and 25 feet bgs in BH-1 BH-5.



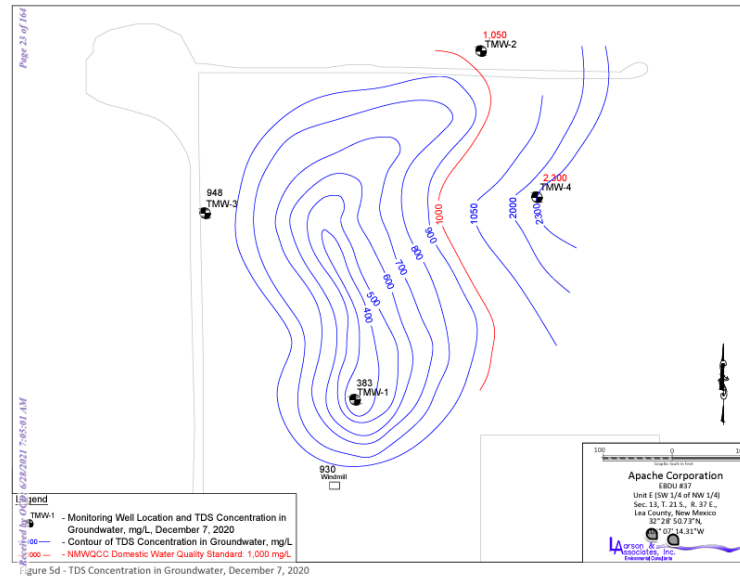
# Annual Groundwater Monitoring Report (December 2019 to December 2020)

**Date:** Received June 28, 2021

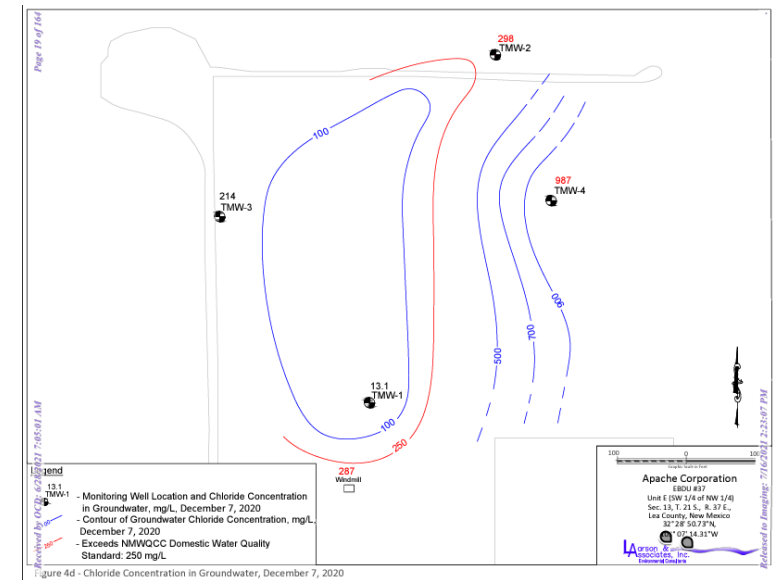
- Samples were collected from four (4) groundwater monitor wells (TMW-1, TMW-2, TMW-3, and TMW-4) and the windmill.
- Samples were analyzed for:
  - BTEX
  - TDS
  - Chloride

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To Water (Feet TOC)
NMWQCC Standard:		*0.01	*0.75	*0.75	*0.62	**250	**1,000	
Windmill	(1) 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	--
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	48.9
	(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
TMW-2	(2) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	55.8
	(2) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	57.5
	(3) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	58.01
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	58.06
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	(3) 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
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	<0.00200	987	2,300	57.45
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	--

TDS Concentrations in Groundwater, 12/7/2020



Chloride Concentrations in Groundwater, 12/7/2020



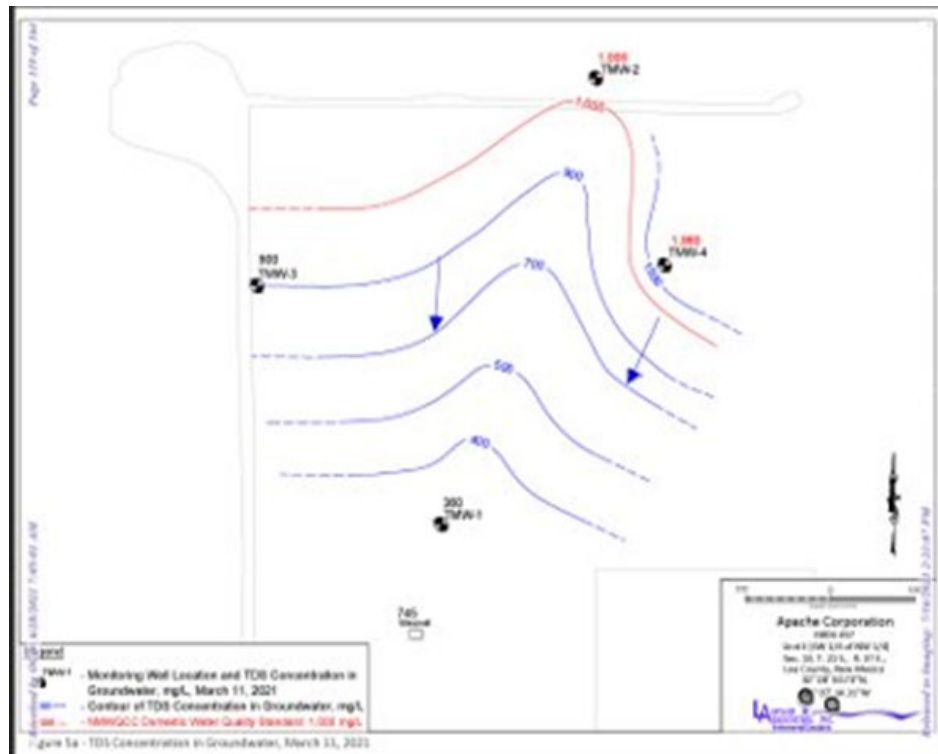


# First Quarter 2021 Groundwater Monitoring Report (January-March)

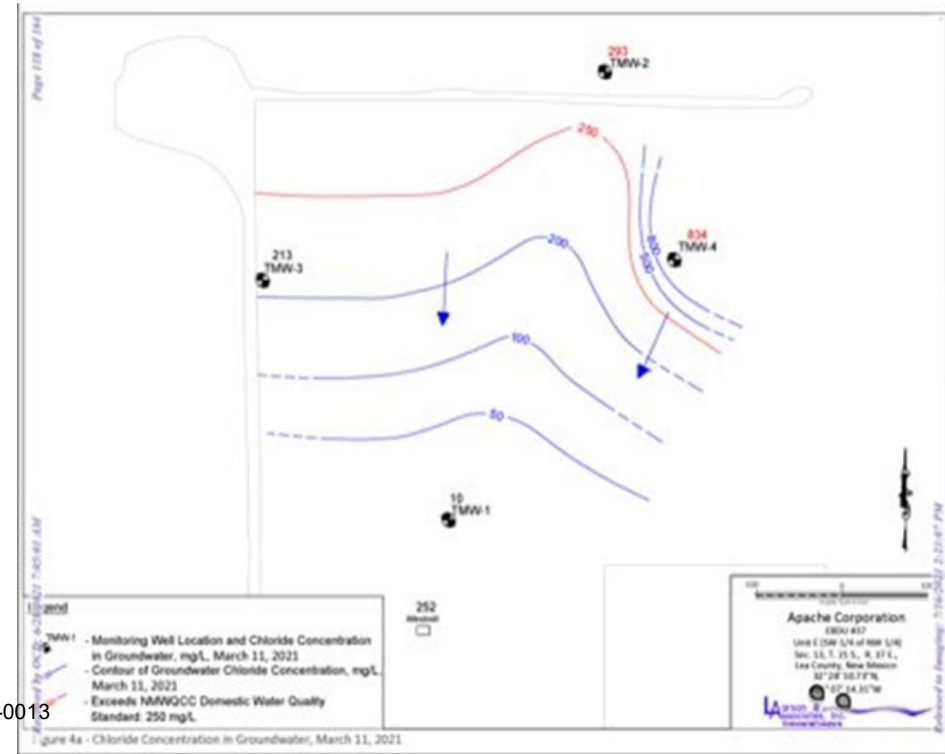
**Date:** Received February 9, 2021

- Samples were collected from four (4) groundwater monitor wells (TMW-1, TMW-2, TMW-3, and TMW-4) and the windmill.
- Samples were analyzed for:
  - BTEX
  - TDS
  - Chloride
- Chloride concentrations were detected above the regulatory limits in TMW-2, TMW-4, Windmill, and DUP-1 (Windmill).
- TDS concentrations were detected above the regulatory limits in TMW-2 and TMW-4.

TDS Concentrations in Groundwater, 3/11/2021



Chloride Concentrations in Groundwater, 3/11/2021



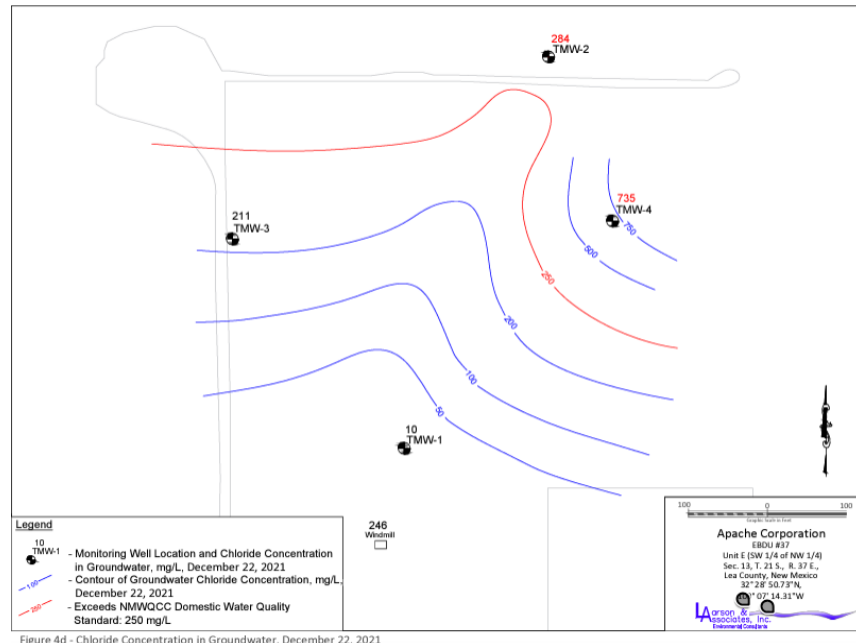
OCD Ex. 2-0013

# 2021 Annual Groundwater Monitoring Report

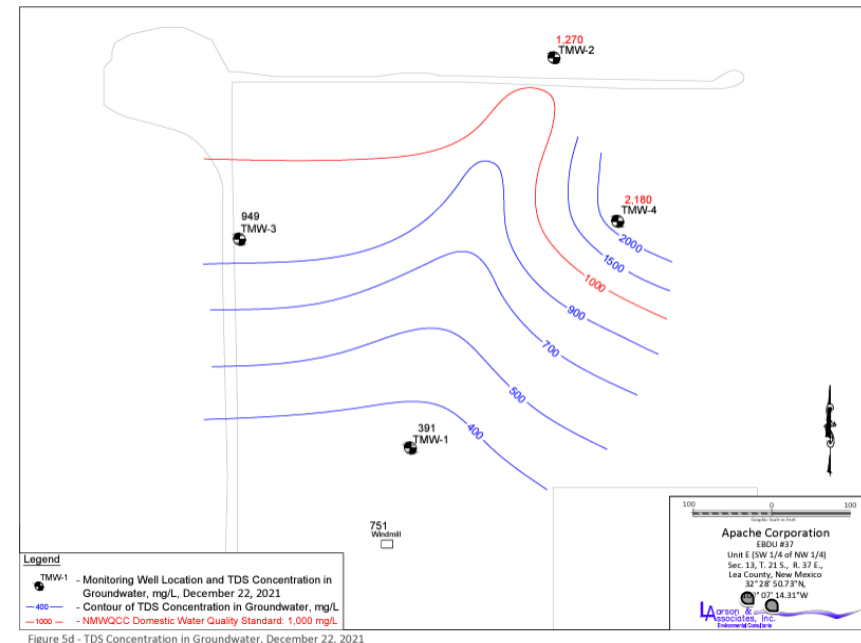
**Date:** February 28, 2022

- A report titled *2021 Annual Groundwater Monitoring Report* was submitted via the OCD Permitting website but was subsequently rejected on March 1, 2022 due to the report being submitted under a C-141 application and not under a UF-GWA application. Operator was instructed to resubmit under the UF-GWA application. Groundwater samples were collected from TMW-1, TMW-2, TMW-3, TMW-4, and Windmill on October 11, 2021 and December 22, 2021 (samples collected in March and June 2021 were discussed on previous slide).
  - Chloride concentrations were detected above the regulatory standard in TMW-2 and TMW-4. The samples collected from the Windmill and DUP-1 (Windmill) returned chloride concentrations above the regulatory limits in the October 11, 2021 sampling event.
  - TDS concentrations were detected above the regulatory limits in TMW-2 and TMW-4.

Chloride Concentrations in Groundwater, December 22, 2021



TDS Concentrations in Groundwater, December 22, 2021



OCD Ex. 2-0014

## Communication between Landowner and OCD

- **Date:** June 3, 2022
  - Email titled *EBDU #37* received by OCD from legal counsel representing the landowner requesting a meeting and site inspection regarding the EBDU #37.
- **Date:** June 15, 2022
  - Landowner's legal counsel sent follow-up email requesting a meeting or telephone call.
  - OCD legal counsel responded that an internal OCD meeting with the Environmental Bureau staff was to be held tomorrow (June 16, 2022). OCD legal counsel also offered various date and times to schedule a meeting.
- **Date:** June 17, 2022
  - OCD sent email to landowner's legal counsel stating that an inspector would be sent to the site and requested any information the landowner had concerns about (i.e. water at the surface) the site as it is a buried flowline. Landowner concerns regarding the sampling report were going to be re-reviewed by OCD staff.
  - OCD Inspection group was provided information regarding the site location and instructed to photograph site and look for any additional releases that may be present at the EBDU #37 or along the previously remediated area.
- **Date:** June 23, 2022
  - Former OCD Compliance Officer, Kelly Fortner, inspected the Apache EBDU #37.
    - No signs of a leak and no petroleum product odor was observed.
    - Signs of water movement in the fresh sand used during the remediation process were observed but appeared to be from heavy rains the week before the inspection occurred.
    - An area of water pooled near an aboveground poly line but was dry and flaking during the inspection.

## Communication between Landowner and OCD, continued

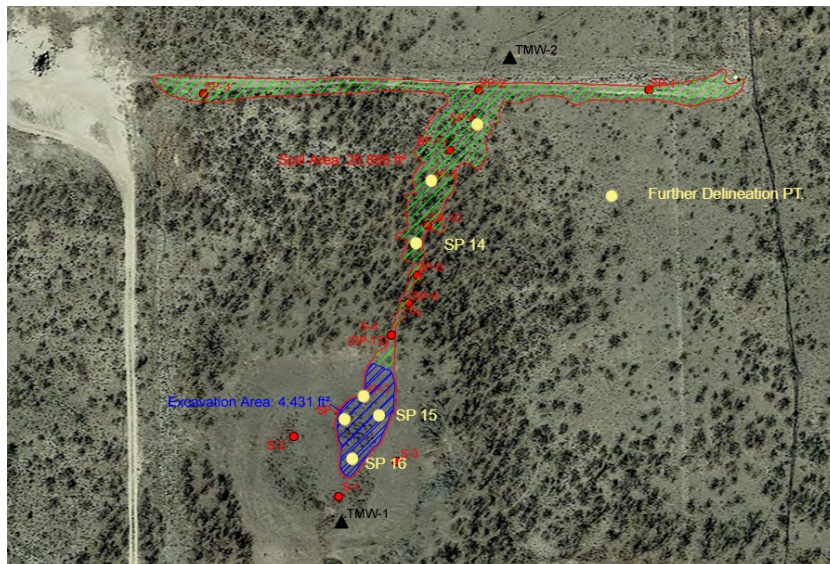
- **Date:** July 8, 2022
  - Email titled *Stephens Ranch EBDU #37* received by former OCD director, Ms. Adrienne Sandoval, from Mr. David Gallegos, State Senate District 41. The email requested the person who would he should contact in order to get help with "this issue". The email also requested if there "is a chance" for a group meeting.
    - Email included a forwarded email from the landowner sent to Mr. Gallegos regarding the site they visited on July 8, 2022. The landowner indicated:
      - "Note the site assessment document: Some of the content within the report is inaccurate.
      - GW sampling data in MW 2, 4 are impacted above NMOCD guidelines.
      - The remediation plan should not have been approved since the release occurred in an environmentally sensitive area. Numerous triggers within the site data, reports and sampling data should have put this remediation into the most stringent remediation requirements of the NMOCD rule.
      - As requested, the NMOCD contacts we have been in contact with is Mike Bratcher , Jesse Tremaine, Kaitlyn Luck. Dylan Rose Coss approved the initial C-141, I believe he works in another division of OCD currently.
      - Cristina Eads approved the site assessment/characterization report and I think she has since left the NMOCD."
- **Date:** July 12 and 13, 2022
  - Additional communication between OCD Environmental Staff, Apache, and their consultants regarding contamination and remediation samples collected in the "top of the T of the excavation".
- **Date:** July 20, 2022
  - Email titled *[EXTERNAL] EBDU 37* received by OCD which contained an attachment for "all the groundwater data from the sampling events of the monitor wells".

## Further Soil Delineation and Additional Monitoring Well Locations 2022

**Date:** August 8, 2022

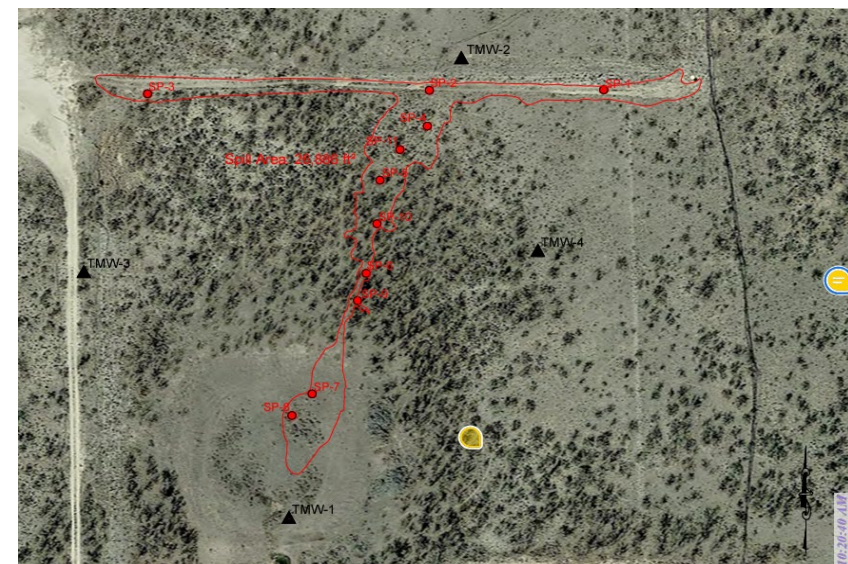
- Email received from Operator indicating that further vertical delineation was to occur at SP4, SP5, SP7, SP8, SP14, SP15, and SP16.
- Operator also asked OCD to advise on the placement of two additional monitoring wells.
- Email was sent to OCD again on September 16, 2022.
- OCD approved boring locations October 3, 2022 and required:
  - Field screening soils for chloride levels during drilling ops at a minimum of 5' increments, with each 10' increment obtained for lab analysis of chloride levels.
  - A formal update of activities sent to OCD by December 12, 2022.
  - Current monitoring activities to be continued on current schedule.

Approved Boring Locations



OCD Ex. 2-0017

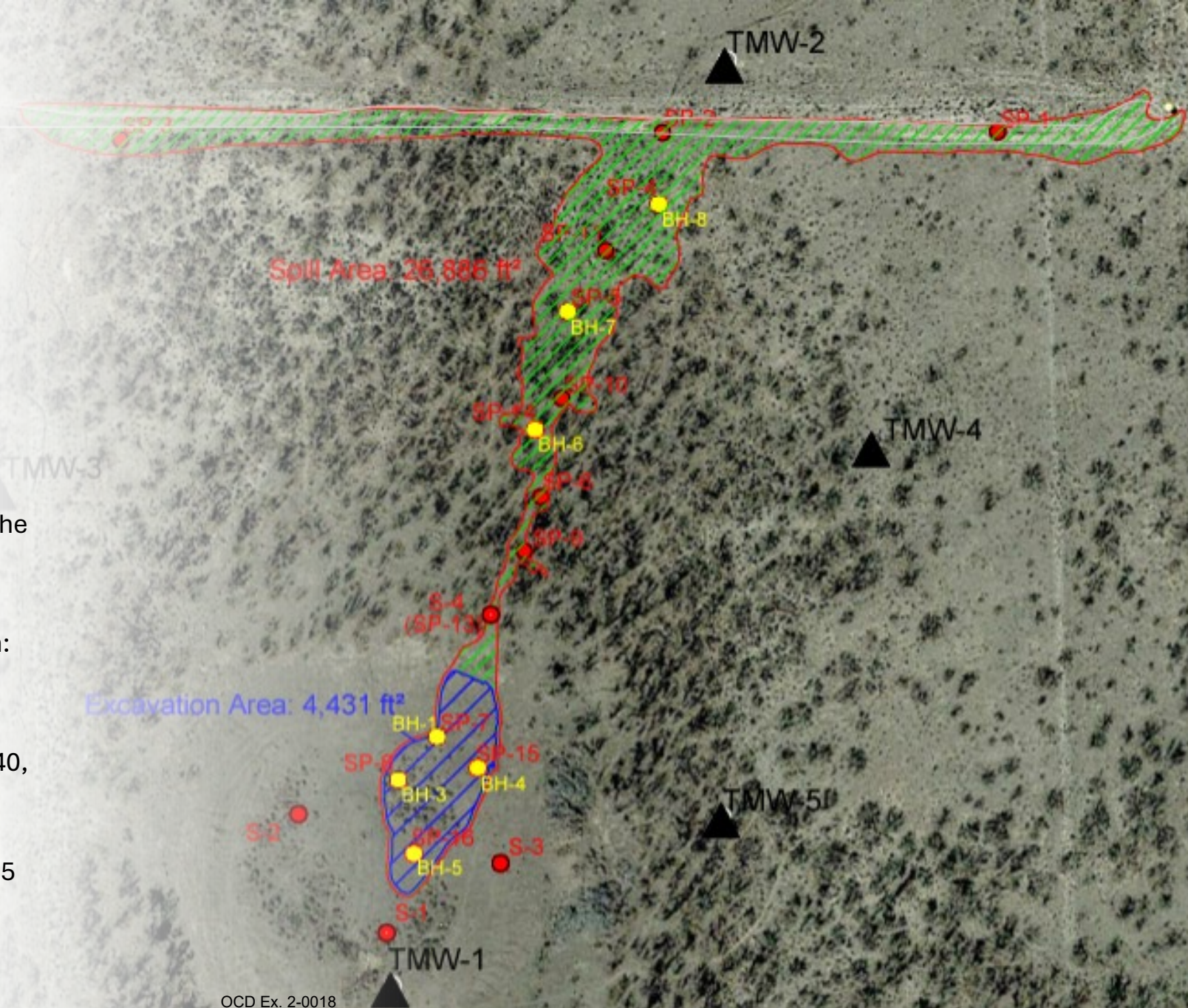
Approved Monitoring Well Locations





## Further Soil Delineation and Additional Monitoring Well Locations

- **Date:** January 10, 2023 – Email received from operator with delineation data collected.
- Samples collected November 29 and 30, 2022.
  - Seven (7) boreholes drilled for soil sampling:
    - BH-1, BH-3, BH-4, BH-5: Located in the playa.
    - BH-6, BH-7, BH-8: Located in the release corridor north of the playa.
- Soil analytical results provided on table show chloride concentrations above the NMOCD closure standard of 600 mg/kg in:
  - BH-3 at 10 and 12 feet bgs
  - BH-6 at 5, 10, 15, 20, 30, 35, 42, 45, and 50 feet bgs
  - BH-7 at 3, 5, 10, 15, 20, 25, 30, 35, 40, 45, and 50 feet bgs
  - BH-8 at 5 and 10 feet bgs
- Installation of two (2) monitoring wells (TMW-5 and TMW-6) east of the playa between November 28–30, 2022.



## 2022 Annual Groundwater Monitoring Report

**Date:** March 7, 2023

- A report titled *2022 Annual Groundwater Monitoring Report* was submitted via email. The report was never resubmitted through the OCD Permitting website.
  - Groundwater samples were collected from TMW-1, TMW-2, TMW-3, TMW-4, and Windmill on March 1, 2022; May 23, 2022; August 16, 2022; and from MW-1, TMW-2, TMW-3, TMW-4, TMW-5, TMW-6 and Windmill December 15, 2022.

March 1, 2022	May 23, 2022	August 16, 2022	December 15, 2022
Chloride concentrations were above the regulatory limits in TMW-2, TMW-4 (both samples collected on 3/1/2022 and 3/29/2022), TMW-5, TMW-6, Windmill, Dup-1 (TMW-2), and Dup-2 (Windmill).	Chloride concentrations were above the regulatory limits in TMW-2 and TMW-4.	Chloride concentrations were above the regulatory limits in TMW-4, Windmill, and Dup-1 (Windmill).	Chloride concentrations were above the regulatory limits in TMW-4, TMW-5, TMW-6, and Dup-1 (TMW-5).
TDS concentrations were above the regulatory limits in TMW-2, TMW-4 (both samples collected on 3/1/2022 and 3/29/2022), and Dup-1 (TMW-2).	TDS concentrations were above the regulatory limits in TMW-2 and TMW-4	TDS concentrations were above the regulatory limits in TMW-3, TMW-4, Windmill, and Dup-1 (Windmill).	TDS concentrations were above the regulatory limits in TMW-4, TMW-5, TMW-6, and Dup-1 (TMW-5).

**Date:** March 27-31, 2023

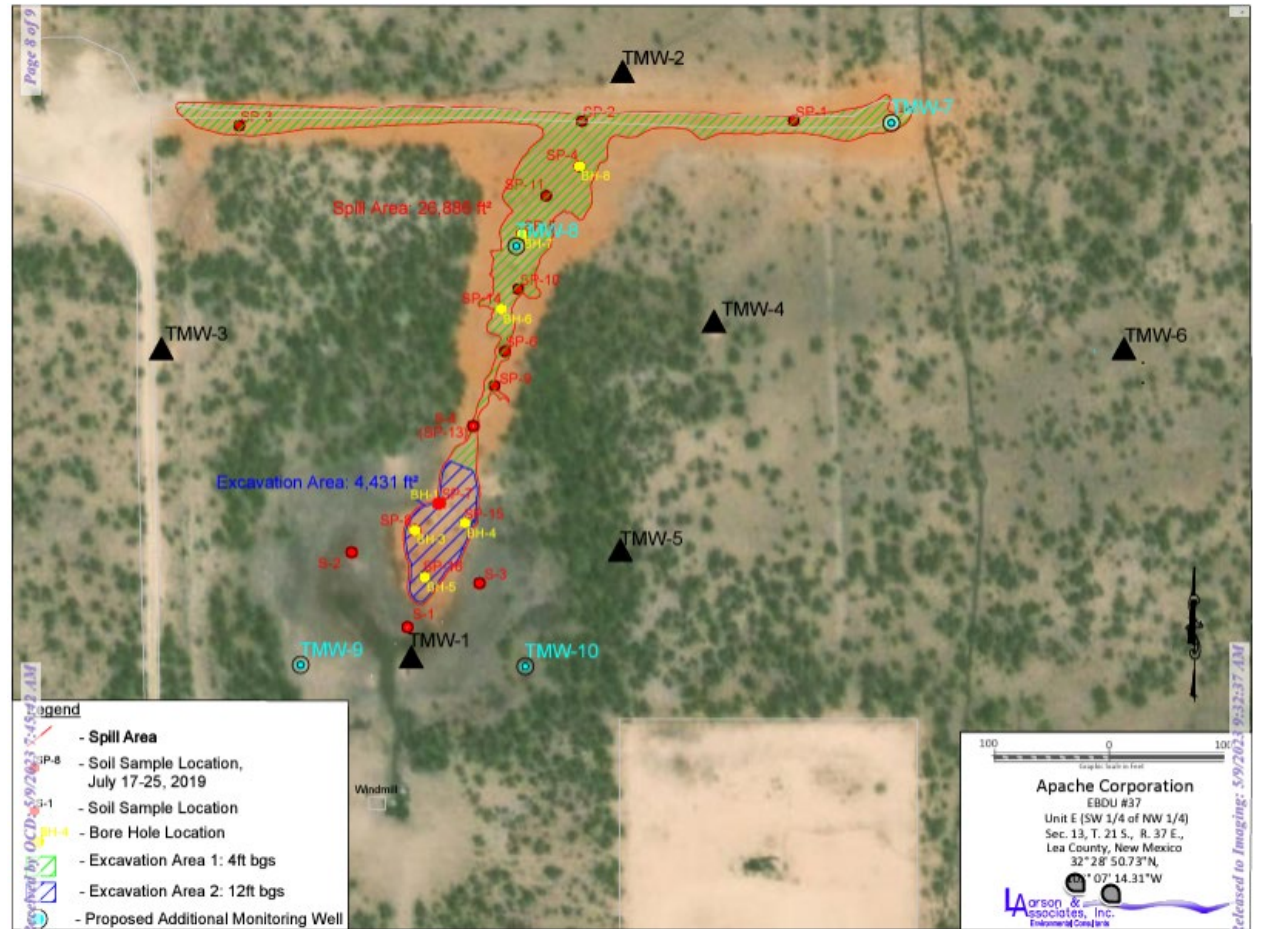
- Email correspondence between OCD environmental bureau staff, Apache, and their consultants regarding a meeting. Meeting was set for April 4, 2023



# Scope of Work for Additional Monitoring Wells 2023

**Date:** April 27, 2023

- *Scope of Work for Additional Monitoring Wells* received via email and the report was uploaded through the OCD Permitting website May 5, 2023.
  - Scope of work included:
    - Installation of four (4) additional groundwater monitoring wells:
      - TMW-7
      - TMW-8
      - TMW-9
      - TMW-10
    - Analysis of the groundwater including:
      - BTEX
      - TDS
      - Cations (calcium, magnesium, potassium, and sodium)
      - Anions (chloride and sulfate)
      - Alkalinity
  - OCD approved the scope of work on May 5, 2023, with the following conditions:
    - Drilling must be performed within 30 days or an extension for cause shall be provided to the OCD for review and approval.
    - The reported findings must be supplied to the OCD within 30 days of the sampling activities or within 14 days of the receipt of the sampling results from the laboratory, whichever is greater.
    - Apache shall provide OCD the drilling schedule no later than 3 business days prior to starting.
  - Apache requested 15 day extension on May 24, 2023 which was approved by Michael Bratcher, OCD Incidents Supervisor on May 30, 2023.



OCD Ex. 2-0020



## Groundwater Analytical Results through September 2023

**Date:** July 6, 2023

- A *Groundwater Sample Analytical Data Summary* table and laboratory analytical results were submitted through the OCD Permitting website.
  - Table included sample results for all monitoring wells (TMW-1 through TMW-10) and windmill through June 22, 2023.
    - Groundwater analytical results were above regulatory limits for chloride (250 mg/kg) in the following wells during the June 2023 sampling event:
      - TMW-1, TWM-4, TMW-5, TMW-6, TMW-7, TMW-8, Windmill, and Dup-1 (Windmill)
    - Groundwater analytical results were above regulatory limits for TDS (1,000 mg/kg) in the following wells during the June 2023 sampling event:
      - TMW-2, TMW-3, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8
    - Groundwater analytical results returned low results of toluene in all samples during the June 2023 sampling event.

**Date:** August 22, 2023

- Email titled *[EXTERNAL] Apache Corp. EBDU #37 (1RP-5636 / nDHR1922141227) Groundwater Notice* was received by OCD indicating that groundwater samples would be collected from ten monitoring wells and one windmill on September 6, 2023.

**Date:** September 19, 2023

- A *Groundwater Sample Analytical Data Summary* table, Aerial Map, and Groundwater Potentiometric Surface Elevation Map were submitted via email.
  - Table included sample results for all monitoring wells (TMW-1 through TMW-10) and windmill through September 6, 2023.
    - Groundwater analytical results were above regulatory limits for chloride (250 mg/kg) in the following wells during the June 2023 sampling event:
      - TMW-1, TMW-2, TWM-4, TMW-5, TMW-6, TMW-7, TMW-8, Windmill, and Dup-1 (TMW-5)
    - Groundwater analytical results were above regulatory limits for TDS (1,000 mg/kg) in the following wells during the June 2023 sampling event:
      - TMW-2, TMW-3, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, and Dup-1 (TMW-5)

## OCD requests meeting with Apache – Took place on October 30, 2023

### Participants:

- OCD
- Apache
- LAI (Consulting Group)

### Meeting Overview:

- Additional Monitoring Wells Analysis
- Apache's proposal for the installation of new monitoring wells was partially contested due to technical disagreements.
- OCD emphasized compliance with comprehensive delineation requirements and outlined necessary conditions, including drilling schedules and detailed analytical results.

### Key Outcomes:

- From prior sampling it appeared there may be additional groundwater contamination in the area which is undetermined if it is unrelated to the surface release. As a result of this appearance, OCD required several additional groundwater monitoring wells and additional investigation to be completed by Apache

### Next Steps:

- Ensure adherence to OCD's specified conditions.
- Submit all reports within designated timelines for regulatory review and approval.
- Address any discrepancies or objections through established procedures.

### November 10, 2023 via email:

- “Per the meeting on October 30, 2023, Larson & Associates, Inc. (LAI), on behalf of Apache Corporation (Apache), submits the attached scope of work (SOW) for installing additional monitoring wells (TMW-11 through TMW-16) at the East Blinbry Drinkard Unit (EBDU) #37 (Site)”
- \*Scope of work is dated November 8, 2024. OCD responds via email (Bratcher), approving additional well installation and “OCD requests in addition to those proposed, one more well be installed approximately half way between TMW-5 and the proposed TMW-15 well. “
- Apache responded on November 21, 2023 to inform OCD that the well installation was scheduled for November 28, 2023.

### November 29, 2023 via email:

- Email titled *[EXTERNAL] Re: Stephens v. Apache, NMOCE Incident NDHR1922141227/IRP-5636* received from legal counsel requesting information as "this matter is part of a lawsuit already".

December 4, 2023, via email titled *[EXTERNAL] Re: OCD and Senator Gallegos* from Ken Dugan to Dylan Fuge.

- Email is a request to "be kept in the loop on all of this".
- Email includes
  - Landowner's complaint against Apache filed with the 5th Judicial District Court
  - OSE Permit filed by Apache for additional monitoring well installation at the site
  - A copy of the Remediation Plan submitted to the OCD on November 7, 2019

January 9, 2024, via email from Apache,

- Chloride/TDS concentration maps

January 16, 2024, via email from Mark Larson

- Figure 2 - Aerial drawing
- Figure 3 - Site drawing
- Figure 4 - Groundwater potentiometric surface map, December 20 – 21, 2023
- Figure 5 – Chloride isopleth map from groundwater samples, December 20 – 21, 2023
- Figure 6 – TDS isopleth map from groundwater samples, December 20 – 21, 2023
- Figure 7 – Combined groundwater potentiometric surface and chloride isopleth map, December 20 – 21, 2023
- Figure 8 – Combined groundwater potentiometric surface and TDS isopleth map, December 20 – 21, 2023
- Table 1 – Monitoring well completion and gauging summary
- Table 2 – Groundwater sample laboratory analytical data summary
- Groundwater sample laboratory report 37226-1
- Groundwater sample laboratory report 37238-1

Detailed results for chloride, TDS, and other analytes show exceedance of regulatory limits in key monitoring wells.

Apache highlighted variability in groundwater flow direction and proposed collecting additional data to refine the conceptual site model.

## Meeting requested by OCD, took place on April 1, 2024

### Participants:

- OCD
- Apache
- LAI (Consulting Group)
- Dalva Mollenberg (Gallagher & Kennedy)

### Meeting Objective:

- OCD/Apache discuss provided results. OCD requests further investigation and complete delineation of contaminants found during additional sampling to resolve technical disputes, clarify groundwater flow, determine background levels.
- OCD outlined clear expectations for comprehensive groundwater and soil investigation to characterize contamination.

### Key Outcomes:

- A complete delineation is needed. OCD suggestions include additional soil and groundwater. OCD states that prior approval to any additional wells does not need to be explicit if needed to complete delineation.

### Next Steps:

- Apache to finalize and submit revised Scope of Work incorporating OCD's feedback, collaborate with OCD to establish mutually agreeable investigative measures and proactively engage with all stakeholders to mitigate potential delays in remediation efforts.

April 12, 2024-Additional scope of work submitted via email, **OCD requested a meeting date to discuss the submission.**

## Scope of Work for Additional Investigation, April 2024

- A report titled *Apache Corp., EBDU #37 Incident NDHR1922141227 (1RP-5636) - Scope of Work for Additional Investigation, Lea County, New Mexico* was submitted via email on NEED TO FIND DATE.
  - The scope of work was submitted in response to the April 1, 2024 meeting between OCD, Apache, LAI (Consulting Group), and Dalva Mollenberg (Gallagher & Kennedy) which Apache states "During the call, NMOCD requested Apache to among other things:
    - Install additional monitoring north of TMW-11 and TMW-12 to establish the northern (upgradient) limit or background for chloride in groundwater.
    - Install additional monitoring well south of TMW-23 and TMW-24 to establish the southern extent for chloride background for chloride in groundwater.
    - Determine the source for chloride (5,850 mg/L) reported in the groundwater sample from monitoring well TMW-17.
    - Implement measures to prevent further impact to the onsite water well (windmill) from chloride.
    - Collect and analyze groundwater samples from the water well (windmill) for the entire list of constituents in 20.6.2.3102 NMAC including Human Health Standards in A (1) (a) through (tt), Other Standards for Domestic Water Supply in B. (1) through (10), and Standards for Irrigation Use in C (1) through (5)."
  - Apache's scope of work included
    - Collecting soil samples from a soil bore drilled in close proximity to the suspected point of such a leak, which most likely would have been around the junction box (suspected source of contamination). Soil samples to be collected and analyzed for chloride starting at surface and every five feet to approximately fifty-five feet bgs.
    - Install four (4) monitoring wells (TMW-25 through TMW-28).
    - Collect groundwater samples from TMW-1 through TMW-24 and the windmill and submit the samples to be analyzed for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, cations (calcium, magnesium, potassium, and sodium) by Method SW-6020B, anions (chloride and sulfate) by EPA Method 300, alkalinity by EPA Method M-2320B, and total dissolved solids (TDS) by EPA Method M-2540C.
    - Complete monitoring well TMW-27 for an aquifer test to test the feasibility of remediation. Depending upon the evaluations discussed below, TMW-27 may be converted in the future to a remediation well (RW-1).
    - Conduct semi-annual monitoring of groundwater monitoring wells.

Follow up meeting requested by OCD, took place on May 1, 2024

Participants:

- OCD
- Apache
- LAI (Consulting Group)
- Dalva Moellenberg (Gallagher & Kennedy)

Meeting Objective:

- Discussion aimed at resolving technical disputes and determine reason delineation efforts have not been exhausted.
- OCD outlined clear expectations for comprehensive groundwater and soil investigation to characterize contamination.

Key Outcomes:

- OCD felt it was necessary to document and issue formal requirements through OCD Permitting.
- Soil testing was essential to determining whether there was anything still happening on the original site and where we are seeing additional contamination.
- Apache must continue to sample the windmill to monitor the potential effects on the landowner.
  - OCD requests Apache Leverage collaborative opportunities to align project outcomes with stakeholder expectations.
  - Ensure transparent communication and timely reporting to maintain regulatory compliance.

Next Steps:

- Apache committed to addressing OCD's conditions through iterative updates and technical justifications, emphasizing proactive monitoring and remediation efforts.
  - OCD scheduled follow up meeting May 16, 2024

# Scope of Work for Additional Investigation, May 2024

**Date:** May 9, 2024

- Report titled *Scope of Work for Additional Investigation* was submitted through the OCD Permitting website. This report was submitted in response to video/telephone calls on April 1, 2024 and May 1, 2024, between Apache, OCD and LAI representatives (operators' consultant). OCD requested:
  - Install additional monitoring well (TMW-28) north of TMW-11 and TMW-12
  - Install additional monitoring well south (TMW-25) of TMW-23 and TMW-24
  - Determine the source for chloride (5,850 mg/L) reported in the groundwater sample from monitoring well TMW-17.
  - Implement measures to prevent further impact to the onside water well (windmill) from chloride.
  - Collect and analyze groundwater samples from the water well (windmill) for the entire list of constituents in 20.6.2.3102 NMAC including Human Health Standards in A (1) (a) through (tt), Other Standards for Domestic Water Supply in B. (1) through (10), and Standards for Irrigation Use in C (1) through (5).
  - Install a monitoring well (TMW-29) north (up gradient) from monitoring well TMW-13.
  - Update the analytical data table with complete analysis of the groundwater sample collected from the windmill on April 3, 2024.
  - Collect and analyze groundwater samples for barium from monitoring wells TMW-1, TMW-3, and TMW-21.
- Operator's scope of work includes:
  - Install bore hole near junction box and TMW-7 to investigate potential source of contamination. Collect samples at surface and every 5 feet to approximately 55 feet bgs.
  - Install 5 monitoring wells (TMW-25 through TMW-29). TMW-27 will be completed as a recovery test well.
  - Collect groundwater samples and analyze for BTEX, cations, anions, alkalinity, and TDS.
  - Remediation scope of work:
    - Evaluate TMW-27 by performing pump test.
    - Conduct semi-annual monitoring of TMW-1 through TMW-28 and RW-1. Analyze samples for BTEX, chloride, and TDS.
    - Submit annual monitoring report to OCD.
    - Discontinue sampling for WQCC human health, domestic water quality and irrigation standards in 20.6.2.3103 from Windmill.

## Overview of Groundwater Analytical Results 2023 submitted with Scope of Work for Additional Investigation, May 2024

**Date:** May 9, 2024

- Report titled *Scope of Work for Additional Investigation* was submitted through the OCD Permitting website.
  - Groundwater samples were collected:
    - March 14, 2023 at Windmill and TMW-1 through TMW-6.
    - June 22, 2023 at Windmill and TMW-1 through TMW-10.
    - September 7, 2023 at Windmill and TMW-1 through TMW-10.
    - December 20, 2023 at Windmill and TMW-1 through TMW-24.

March 14, 2023	June 22, 2023	September 7, 2023	December 20, 2023
Chloride concentrations were above the regulatory limits in Windmill, TMW-4 , TMW-5, TMW-6, and Dup-1 (Windmill).	Chloride concentrations were above the regulatory limits in Windmill, TMW-1, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, and Dup-1 (Windmill).	Chloride concentrations were above the regulatory limits in Windmill, TMW-1, TMW-2, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, and Dup-1 (TMW-5).	Chloride concentrations were above the regulatory limits in Windmill, TMW-2, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, TMW-11, TMW-12, TMW-13, TMW-14, TMW-15, TMW-17, TMW-18, TMW-19, TMW-20, TMW-21, TMW-22, TMW-23, TMW-24, Dup-1 (TMW-17), and Dup-2 (TMW-2).
TDS concentrations were above the regulatory limits in Windmill, TMW-2, TMW-4, TMW-5, TMW-6, and Dup-1 (Windmill).	TDS concentrations were above the regulatory limits in TMW-2, TMW-3, TMW-4, TMW-5, TMW-6, TMW-7, and TMW-8.	TDS concentrations were above the regulatory limits in TMW-2, TMW-3, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, and Dup-1 (TMW-5).	TDS concentrations were above the regulatory limits in Windmill, TMW-2, TMW-3, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, MW-11, TMW-12, TMW-13, TMW-14, TMW-15, TMW-17, TMW-18, TMW-19, TMW-23, TMW-24, Dup-1 (TMW-17), and Dup-2 (TMW-2).



# Overview of Groundwater Analytical Results 2024 submitted with Scope of Work for Additional Investigation, May 2024

Date: May 9, 2024

- Report titled *Scope of Work for Additional Investigation* was submitted through the OCD Permitting website.
  - Groundwater samples were collected:
    - March 14, 2024 at Windmill and TMW-1 through TMW-24.
    - April 3, 2024 at Windmill and analyzed for all analytes found on the "3103 Table".
    - May 2, 2024 at Windmill, TMW-1, TMW-3, and TMW-21. Analysis included barium only.

March 14, 2024	April 3, 2024	May 2, 2024
Chloride concentrations were above the regulatory limits in Windmill, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, MW-11, TMW-12, TMW-13, TMW-14, TMW-15, TMW-17, TMW-18, TMW-19, TMW-20, TMW-21, TMW-22, TMW-23, TMW-24, Dup-1 (TMW-3), and Dup-2 (TMW-14).	Sample collected from the Windmill and analyzed for all Parameters of 20.6.2.3103 NMAC.  <u>Analysis that operator reported (on Table 3) above the regulatory standards for the parameters of 20.6.2.3103 NMAC:</u> <ul style="list-style-type: none"><li>• Barium (2.18 mg/L) Operator identified that this analysis was not performed for dissolved portion of the contaminate per 20.6.2.3103 NMAC.<ul style="list-style-type: none"><li>• Chloride (440 mg/L)</li></ul></li></ul> <u>OCD comments on this sampling event:</u> <ul style="list-style-type: none"><li>• Barium results on laboratory analytical report are 0.218 mg/L.</li><li>• Ethylene Dibromide/1,2-Dibromoethane (EDB) and phenols were reported as "less than the reporting limit" but the lab reporting limit is greater than the regulatory standard</li><li>• Total naphthalene plus monomethylnaphthalenes; benzo-a-pyrene, pentachlorophenol, atrazine were reported as ug/L and the reporting limits were not converted on the table to mg/L.<ul style="list-style-type: none"><li>• PH was out of hold time</li></ul></li></ul>	Samples collected from Windmill, TMW-1, TMW-3, and TMW-21 and analyzed for barium only.  Chain of Custody indicates samples to be lab filtered. All samples analyzed for dissolved barium using EPA Method 200.8.  All samples returned results below the regulatory limit of 2.0 mg/L
TDS concentrations were above the regulatory limits in Windmill, TMW-4, TMW-5, TMW-6, TMW-7, TMW-8, MW-11, TMW-12, TMW-13, TMW-14, TMW-15, TMW-17, TMW-18, TMW-19, TMW-23, TMW-24, and Dup-2 (TMW-14).		

## Follow up Meeting May 16, 2024

### Participants:

- OCD
- Apache
- LAI (Consulting Group)
- Dalva Mollenberg (Gallagher & Kennedy)

### Meeting Objective:

- Discuss OCD's review of the May 9, 2024, scope of work submitted by Apache

### Key Outcomes:

- OCD demonstrated that the proposed work was not sufficient to provide complete delineation.
- OCD indicated that a thorough review would take place and formal Conditions of Approval (COA's) would likely be included in any approvals to meet investigative goals.

### Next Steps:

- OCD to complete final review.

# OCD's Approval of Scope of Work for Additional Investigation, May 2024

**Date:** July 24, 2024

- OCD approved operator's *Scope of Work for Additional Investigation, May 2024* which was received by the OCD on May 9, 2024 with conditions:
  - A current and up-to-date site map showing proposed monitoring wells in the SOW, and the OCD prescribed additional monitoring wells (see table below).
  - Any quarterly monitoring collected to the present (summary table and lab analyses are sufficient).
  - Sampling and analysis of barium at the windmill
  - Sampling and analysis of all human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC in TMW-5 and TMW-17
  - All additional wells (include those proposed by Apache and OCD) must have soil sample analyses for TPH, chloride, and BTEX in five (5) foot interval composite samples.
  - Drilling for all wells is required to commence within ninety (90) days from this date of approval.

Well ID	Location Description	Purpose	Coordinates
TMW-30	~ 430 feet east of TMW-28, 50 feet south	Better defining background concentrations	(32.482591, -103.120003)
TMW-31	~ 350 feet northwest of TMW-22	Reduces the distance between TMW-12 and TMW-22 for more precise characterization	(32.481806, -103.119008)
TMW-32	~ 275 feet east of TMW-12	Reduces distance between adjacent wells for more precise characterization	(32.481354, -103.119876)
TMW-33	~ 415 feet southwest of TMW-22	Reduces the distance between TMW-21 and TMW-13 for more precise characterization	(32.480643, -103.118728)
TMW-34	~ 350 feet west of TMW-14	Achieves more characterization near TMW-17 which conveys a high chloride level	(32.479492, -103.120080)
TMW-35	~ 190 feet northeast of TMW-15	Addresses more necessary characterization near TMW-17	(32.479341, -103.119302)
TMW-36	~ 175 feet southwest of TMW-17	Addresses need for more characterization near TMW-17	(32.478749, -103.120871)
TMW-37	~ 275 feet southeast of TMW-17	Addresses need for more characterization near TMW-17	(32.478577, -103.119850)
TMW-38	~ 300 feet northwest of proposed TMW-26	More characterization and assessment needed in the southeast region of the release area	(32.477683, -103.119429)
TMW-39	~ 200 feet southeast of TMW-18	The release area in southeast area needs tighter monitoring network of characterization and assessment for chloride	(32.477447, -103.120144)
TMW-40	~ 200 feet southeast of TMW-16	Addresses lack of characterization and assessment between MW-19 and MW-18	(32.477640, -103.121407)
TMW-41	~ 275 feet east of TMW-24	Addresses lack of characterization and assessment between TMW-24 and TMW-23	(32.476499, -103.121560)
TMW-42	~ 220 feet east of TMW-23	Addresses lack of characterization and assessment between TMW-25 and TMW-26	(32.476456, -103.119774)
TMW-43	~ 75 feet northeast of TMW-13	Addresses lack of characterization between TMW-13 and TMW-22	(32.4811185, -103.1189847)

## Apache Contesting of OCD Conditions of Approval sent July 24, 2024

**Date:** August 6, 2024

- A letter titled *Re: Apache Corp., EBDU #37 Incident NDHR1922141227 (1RP-5636)* was received by the OCD via email and certified mail dated August 23, 2024. This letter outlined Apache's objection to some of the conditions stated in the email requiring the installation and monitoring of additional monitoring wells. The objections included:
  - Under what rules, the Oil Conservation Division (“Division”) is acting in this matter as the submittal was not a Ground Water Abatement Plan and Apache has no record of receiving any other notice from the Division concerning Ground Water Abatement.
    - Apache states notice that the Division is requiring an abatement plan proposal under 19.15.30.13.A NMAC has not been received, nor has Apache submitted a proposal for voluntary abatement under 19.15.30.13.B NMAC.
  - Apache considers the conditions imposed by OCD as a request for additional information under 19.15.29.11.C NMAC.
    - Apache notes that, under this rule, the Division’s request for additional information was not timely, as it was not made within 30 days of the submission of the May 8, 2024, proposal and therefore Apache objects to the request for additional information on that basis.
  - Consistent with what was discussed and agreed during the May 1, 2024 telephone conference, Apache submitted its proposal to install five additional monitoring wells (TM 25-29) on May 8, 2024.
    - Apache's states that several of the OCD additional monitor wells added in the conditions of approval are unnecessary because additional information to appropriately characterize groundwater can be derived either (1) from data from existing monitoring wells, or (2) from the installation of fewer monitoring wells in only a limited area.
      - Apache is willing to agree to the installation of two additional monitoring wells as identified in the conditions of approval- specifically the location identified as TMW-39 and the location of TWM-42.'
      - Apache objects to the installation of wells TMW-32, -33, -31, -35, -36, -37, -38 and -40 as concentration isopach maps can be prepared using data from surrounding wells.
      - Apache's states the need for additional monitoring wells identified as TMW-30 and -34 should be described as conditional, depending upon the results of monitoring proposed TWM-28 and -29.
      - Apache objects to the installation of the well identified as TWM-42 as Apache believes that there is sufficient characterization.
      - Apache objects to the need of additional monitor well due to “significant differences in groundwater flow direction in the source area shown between Figure 5a and Figure 5b,” as groundwater flow has consistently been generally to the South. The interpretation of the results of a single groundwater monitoring event, and are insufficient to justify significant additional work.
        - Apache proposes to collect at least one additional round of groundwater elevation measurements to evaluate groundwater flow direction. If there is still an unexplained difference in groundwater flow direction, then Apache may be willing to discuss whether there is a need for additional monitor wells.
    - Apache states that the Division should recognize that where characterization can be accomplished consistent with technical standards without the need for additional monitoring wells, due to costs, access issues and land disturbance.

## **Additional meeting, which took place on August 28, 2024, as requested by Apache**

### **Participants:**

- OCD
- Apache
- LAI (Consulting Group)
- Dalva Mollenberg (Gallagher & Kennedy)

### **Meeting Objective:**

To discuss the Scope of Work (COAs) necessary to address and remediate the identified incident.

### **Key Outcomes:**

- Apache committed to resubmitting a revised Scope of Work, including a more detailed and comprehensive plan.
- OCD did not provide specific well locations but emphasized the need for substantial revisions to the proposed Scope of Work to ensure compliance. OCD clarified that the revised Scope of Work must include sufficient data to support a complete investigation to facilitate OCD's decision-making process.
- OCD reiterated its expectations and requirements as previously discussed during the April 26, 2024, meeting.
- Discussions emphasized the importance of a plan designed to fully delineate, characterize, and identify the point source of the release.

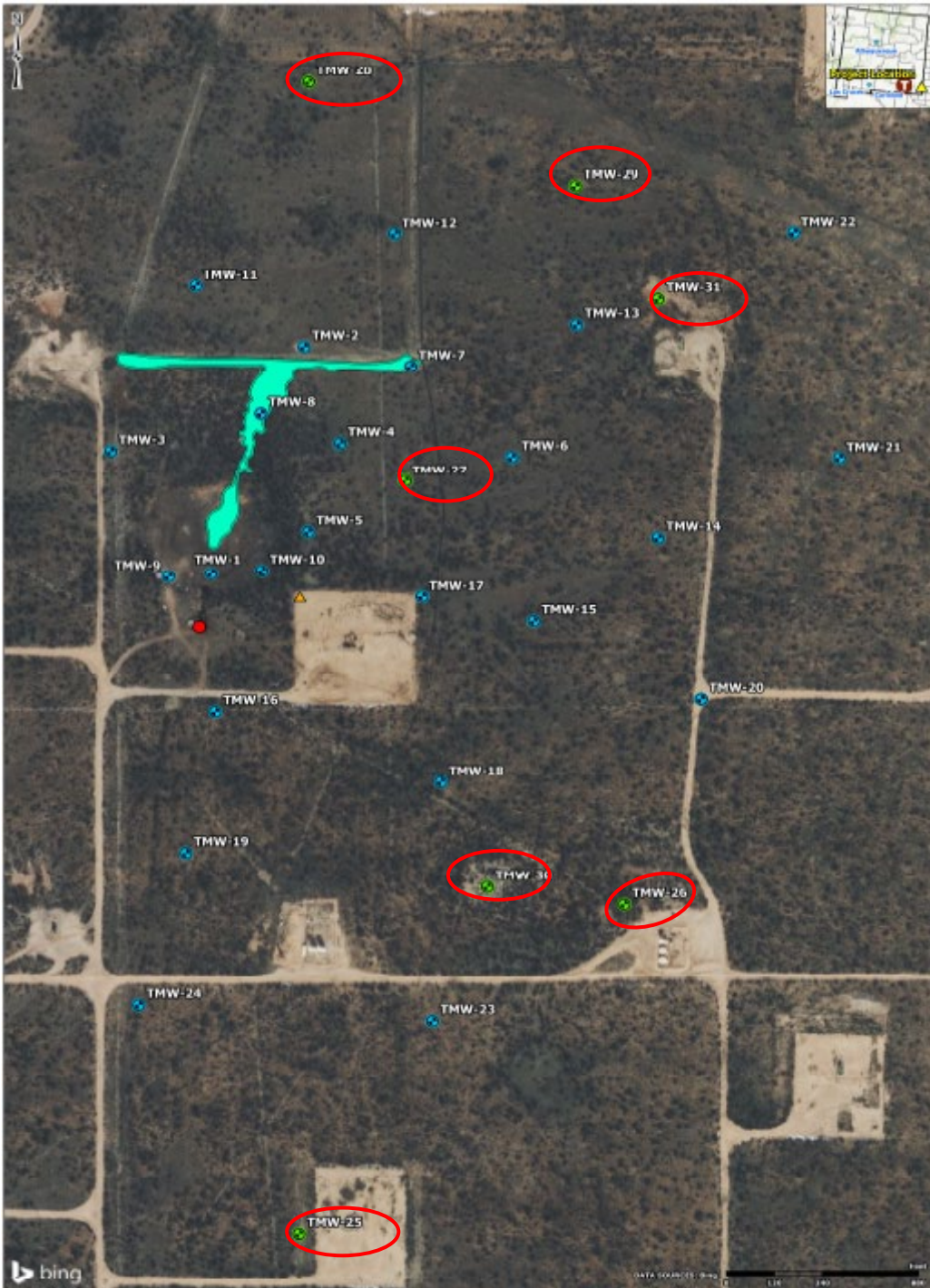
### **Next Steps:**

Apache agreed to provide a revised plan that addresses all outlined requirements and incorporates the necessary revisions discussed during the meeting. OCD grants additional time to revise the workplan.

# Additional Groundwater Delineation Workplan

**Date: September 24, 2024**

- A report titled *Additional Groundwater Delineation Work Plan* was received by the OCD via email. The scope of work provided in this plan included:
  - Installation of seven (7) additional monitoring wells:
    - TMW-25, TMW-26, TMW-27, TMW-28, TMW-29, TMW-30, and TMW-31.
    - At each of the monitoring well locations, soil samples will be collected at five-foot intervals and will be submitted to a laboratory for analyses for TPH, chloride, and BTEX.
  - Advance four soil borings to evaluate potential source areas for chlorides. Precise locations will be determined in consultation and agreement with NMOCD. Soil samples from the borings will be analyzed in the field using titration methods. Borings will be advanced to a depth of 30' and sampling will cease if no samples are found above RALs.
  - Collect groundwater samples in September from existing monitoring wells and windmill. Samples will be analyzed for chloride and TDS
  - Collect groundwater samples in December from the existing monitoring wells, windmill, and seven newly installed wells. Analyze all wells and windmill for TDS and chloride. The samples from the seven newly installed wells will be analyzed for BTEX and TPH. If BTEX and TPH are below detections limits, all additional sampling events will be analyzed for chloride and TDS.
  - Samples from the Windmill Well, TMW-5 and TMW-17 will be sampled for the human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC.
  - Samples from the Windmill Well, TMW-1, TMW-3, and TMW-21 will also be sampled for Barium
  - TMW-17 will be purged dry (to maximum extent possible prior to sampling in September to ensure water being sampled is formation water and not related to water introduced when the well was installed.
  - TMW-27 will have a pump test performed to gauge the characteristics of the aquifer. Drawdown will be measured in the pumping well and select monitoring wells using pressure transducers.



## Apache's proposed additional groundwater monitoring well locations and purposes

Well ID (circled on map)	Purpose	Coordinates
TMW-25	downgradient delineation	32.475248°, -103.121412°
TMW-26	downgradient and lateral delineation on southeast edge of the plume	32.477315°, -103.119178°
TMW-27	confirm the chloride plume is continuous between the source (near TTMW-7) and TTMW-17	32.479989°, -103.120675°
TMW-28	upgradient Delineation wells located approximately 750 feet (TMW-28) and 550 feet (TMW-29) upgradient of the source. The average of these two wells is intended to serve as representative background conditions.	32.482492°, -103.121341°
TMW-29		32.481836°, -103.119511°
TMW-30	provide information on stratigraphy and groundwater chemistry in the space	32.477428°, -103.120114°
TMW-31 OCD Ex. 2-0035	downgradient and lateral (southeast) delineation of the plume	32.476425°, -103.119734°

**OCD reviewed the revised work plan from Apache in response to the previously discussed Conditions of Approval (COAs). Following a thorough review by OCD's technical team and leadership, the plan was rejected on the grounds that it failed to demonstrate a good faith effort to meet OCD's requests for further delineation and substantive updates.**

- OCD communicated its decision to cancel the meeting scheduled for the following day, stating that discussing the proposal would not be productive. OCD clarified that the submitted plan did not align with the previously outlined COAs and was viewed as a rejection of those conditions.
- OCD informed Apache that it had the option to contest the COAs by filing an application for a hearing under 19.15.29.12.C(5) NMAC.
  - Despite the expiration of the formal appeal period, OCD extended the opportunity for Apache to file such an application within seven days, in recognition of delays caused by ongoing discussions.
  - OCD further advised that failure to comply with the COAs or to file an application would likely result in a Notice of Violation.
- Subsequently, Apache prepared and submitted a revised work plan for discussion, including a compromise proposal that incorporated certain boring locations in lieu of monitoring wells.
- Apache reiterated objections to the COAs and asserted that portions of the requested work exceeded the scope of the incident.
- Additionally, Apache initiated a technical dispute resolution process under 19.10.30.20 NMAC and requested a 30-day extension of the resolution period due to delays in arranging further meetings.

Ultimately, Apache elected to pursue a hearing to contest the COAs.



## **CURRICULUM VITAE**

### **BRANDON POWELL**

#### **SUMMARY**

Mr. Powell is the Oil Conservation Division's (OCD) Deputy Director overseeing the Engineering and Environmental bureaus. He has served with OCD for more than eighteen years. He began his career in 2006 as an environmental specialist overseeing environmental releases and remediation. In 2011, he was promoted to inspection and enforcement supervisor for OCD's district office in Aztec. In that position, he supervised down-hole engineering and compliance with OCD rules. In 2019, he was promoted to District Supervisor, which involved oversight of day-to-day operations for the San Juan Basin. In 2020 he was promoted to the Engineering Bureau Chief and then in 2023 was promoted to Deputy Director. Mr. Powell has extensive experience applying OCD rules to all aspects of oil and gas development and has testified as an expert in OCC rulemakings, including the pit rule (19.15.17 NMAC), the produced water rule (19.15.34 NMAC), the release rule (19.15.29 NMAC) and the natural gas waste rules (19.15.27 and 19.15.28 NMAC).

#### **EMPLOYMENT**

##### **May 2023- Current**

##### **New Mexico Oil Conservation Division**

##### **Deputy Director**

- As Deputy Director, Mr. Powell provides oversight and management for the OCD's Engineering Bureau and Environmental Bureau. In his position he has 2 direct reports which are the Environmental Bureau Chief and Engineering Bureau Chief. He also has ~60 additional indirect reports in those groups.
  - The Engineering bureau is made up of 4 major groups Inspection Compliance Program, Underground Injection Control (UIC) Program, Administrative Permitting Program, Engineering Projects and Hearings group.
  - The environmental program contains 3 major groups, Permitting, Environmental Special Projects and Incident/Inspections.

##### **November 2020 – May 2023**

##### **New Mexico Oil Conservation Division**

##### **Chief, Engineering Bureau**

- Oversight and Management of the OCD's Engineering Bureau which includes
  - Administrative Compliance Program
  - Underground Injection Control (UIC) Program
  - Administrative Permitting Program.
- Ensures that OCD goals and objectives are met by assigning and directly supervising the work of the Administrative Compliance, UIC, and Administrative Permitting Programs.
- Conducts training and performance evaluations of personnel and acts upon leave requests. This position designs and develops programs to address new technical issues as they arise and as technical advances in the oil and gas industry are implemented.

##### **May 2019- November 2020**

##### **New Mexico Oil Conservation Division**

##### **District Supervisor**

- Managed operations for OCD's Northern District, ensuring the proper management of more than 24,000 oil and gas wells and associated facilities to protect public health and the environment.
- Managed relations with four tribes and allottees, federal agencies including Bureau of Land Management, Bureau of Reclamation, and Forest Service, and private landowners.
- Supervised seven staff members, including geologist, compliance officers, and environmental specialists.
- Managed office assignments, fleet repair and maintenance, and the District's Reclamation Fund (RFA) plugging program.
- Coordinated with the Engineering and Environmental Bureaus to ensure consistency in permitting and enforcement across the state.
- Supervised the District's UIC activities and coordinated with the UIC Program Manager to ensure consistency in testing and compliance.
- Conducted training for OCD and District staff.
- Assisted in the tasks described below when necessary for District operations, particularly in the absence of staff.
- Served as the District's representative on the New Mexico Oil and Gas Northwest Public Lands Committee.
- Assisted in development of standard operating procedures for wide range of OCD's business practices.
- Participated in strategic planning for OCD, including crisis management, electronic transition, enforcement, and rulemaking.

#### **April 2011-May 2019**

##### **New Mexico Oil Conservation Division**

##### **Staff Manager & Inspection and Enforcement Supervisor**

- Supervised four district compliance officers and their activities regarding oil, gas, injection, brine and non-hazardous waste wells to protect public health, fresh water and other natural resources, including the review and approval of applications the conduct of investigations, and the recommendation of engineering solutions.
- Supervised environmental specialists, geologists, and data managers when the District Supervisor was not available and after he retired.
- Substituted for the geologist and environmental specialists during their absence and position vacancy for two years, including reviewing pools, logs and formation tops.
- Reviewed drilling, production, and closure of wells and other oil and gas facilities to ensure compliance with OCD rules, including:
  - Scheduled and conducted field inspections;
  - Initiated enforcement actions;
  - Reviewed applications for well work-overs, completion and plugging; and
  - Observed field activities.
- Provided technical assistance to OCD staff and operators.
- Coordinated office activities, including the review and approval of personnel documents and the conduct of other supervisory duties on behalf of the District Supervisor.
- Assisted in the development of rules.
- Served as the District's representative for the New Mexico Oil and Gas Northwest Public Lands Committee.

#### **April 2006 thru April 2011 New Mexico Oil Conservation Division**

##### **Environmental Specialist, Deputy Oil and Gas Inspector, and Loss Control Officer**

- I Supervised industries operations to ensured proper remediation of releases.
- I would respond to urgent releases which endangered the environment or the public.
- Reviewed permits for work requested to be performed, and subsequent reports for work already performed.
- I would draft environmental compliance and enforcement documents
- Testify in environmental compliance and enforcement cases.
- Work with other governmental agencies to find solutions to problems that arise
- Prepare and give environmental training to industry and other agencies.
- Work with Companies to ensure their continual compliance.
- Track District internal injuries and incidents and prepare yearly OSHA forms.

- Respond to citizen complaints.

**June 2004-April 2006 Envirotech, Inc.**

**Sr. Environmental Technician, Soil Remediation Facility Manager, and Mold Inspector.**

- Prepared reports for various agencies for the on-site documentation for various types of releases.
- Managed the soil remediation facility and subsequent personnel which averaged 1-3 people. I categorized waste to determine if waste was acceptable pursuant to the facility permits.
- Performed hazardous waste characterization and disposal of oil field and non-oilfield waste.
- Project manager and field supervisor which included supervising multiple people.
- Prepared job quotes and project summaries.

**TESTIMONY IN RULEMAKING PROCEEDINGS**

19.15.17 NMAC – *Pits, Close-Loop Systems, Below-Grade Tanks and Sumps, 2008 and 2013*

19.15.34 NMAC – *Produced Water, Drilling Fluids, and Liquid Oil Field Waste, 2015*

19.15.29 NMAC – *Releases, 2018*

19.15.27 NMAC – *Venting and Flaring of Natural Gas, 2021*

19.15.28 NMAC – *Natural Gas Gathering Systems, 2021*

19.15.7 NMAC – *Forms and Reports, 2022*

**CERTIFICATIONS AND TRAINING**

Hazardous Waste Management Certification, Lion Technologies, September 2004

Hazmat Site Supervisor Training, High Desert Safety, 2005

Confined Space Certification, High Desert Safety, 2005

Hot Work Certification, High Desert Safety, 2005

OSHA Forty Hour Certification, 2005

Surveillance Detection Course for Commercial Operators, Department of Homeland Security, 2008

# EMNRD OCD Information

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NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

# OCD Overview

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- **This presentation provides information received from Apache's history of investigations into this area. Specifically note during the presentation these specific points**
  - The basic rules and principals of 19.15.29 NMAC.
  - At this point, the investigation area this release encompasses is over 4 million square feet or approximately 94 acres. This area contains a contaminated area of roughly 2.6 million square feet or approximately 60 acres. Both areas have the potential to continue growing until Apache fully delineates the release area and can start abatement.
  - The groundwater chloride limit is 250mg/L or background. The most contaminated area is over 20 times that limit.
  - Apache's groundwater flows and concentration contours drastically change after every new set of wells are set showing additional investigation is needed.
  - Groundwater in the area continues to potentially degrade and/or spread while Apache delays additional action.
- **The goal of OCD's COA's is not to make any final determinations. The actions are an effort to continue to expedite the delineation of the release which is one of the very first steps that should be taken when classifying a release, a step Apache has taken years to perform so far and has not yet accomplished.**

# Specific Rules and Statues

# 19.15.29.11 NMAC Overview

**19.15.29.11 SITE ASSESSMENT/CHARACTERIZATION:** After the responsible party has removed all free liquids and recoverable materials, the responsible party must assess soils both vertically and horizontally for potential environmental impacts from any major or minor release containing liquids.

**A. Characterization requirements.** The responsible party must submit information characterizing the release to the appropriate division district office within 90 days of discovery of the release or characterize the release by submitting a final closure report within 90 days of discovery of the release in accordance with Subsection E of 19.15.29.12 NMAC. The responsible party may seek an extension of time to submit characterization information for good cause as determined by the division. The responsible party must submit the following information to the division.

...

**C.** If the division determines that more information is needed to understand the character of the release and its potential impact on fresh water, public health and the environment, the division may request the responsible party submit additional information. Should the division request additional information, it must do so in writing to the responsible party within 30 days from receipt of the characterization report or remediation plan with what specific information the division is requesting and reasons why the additional information is needed. The responsible party has 14 days to respond to a written request for additional information. If the responsible party disagrees with the request for additional information, it may consult with the division, or file an application for hearing pursuant to 19.15.4 NMAC within 30 days of the issuance of the request for additional information.

# 19.15.5.11 NMAC Overview

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**19.15.5.11 ENFORCEABILITY OF PERMITS AND ADMINISTRATIVE ORDERS:** A person who conducts an activity pursuant to a permit, administrative order or other written authorization or approval from the division shall comply with every term, condition and provision of the permit, administrative order, authorization or approval.



# 19.15.29.12 NMAC Overview

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## 19.15.29.12 REMEDIATION AND CLOSURE:

A. The responsible party must remediate all releases regardless of volume.

B. **Remediation requirements.**

(1) Unless remediation is completed, and a final closure report submitted, within 90 days of discovery of the release, the responsible party must complete division-approved remediation for releases either pursuant to a remediation plan approved pursuant to 19.15.29.12 NMAC or pursuant to an abatement plan in accordance with 19.15.30 NMAC. If the director determines that the release has caused water pollution in excess of the standards and requirements of 19.15.30 NMAC, the director may notify the responsible party that an abatement plan may be required pursuant to 19.15.30 NMAC.

# *70-2-12 NMSA Overview*

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## **70-2-11. Power of commission and division to prevent waste and protect correlative rights.**

A. The division is hereby empowered, and it is its duty, to prevent waste prohibited by this act and to protect correlative rights, as in this act provided. To that end, the division is empowered to make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereof.

## **70-2-12. Enumeration of powers.**

A. The oil conservation division of the energy, minerals and natural resources department may:

- (1) collect data;
- (2) make investigations and inspections;

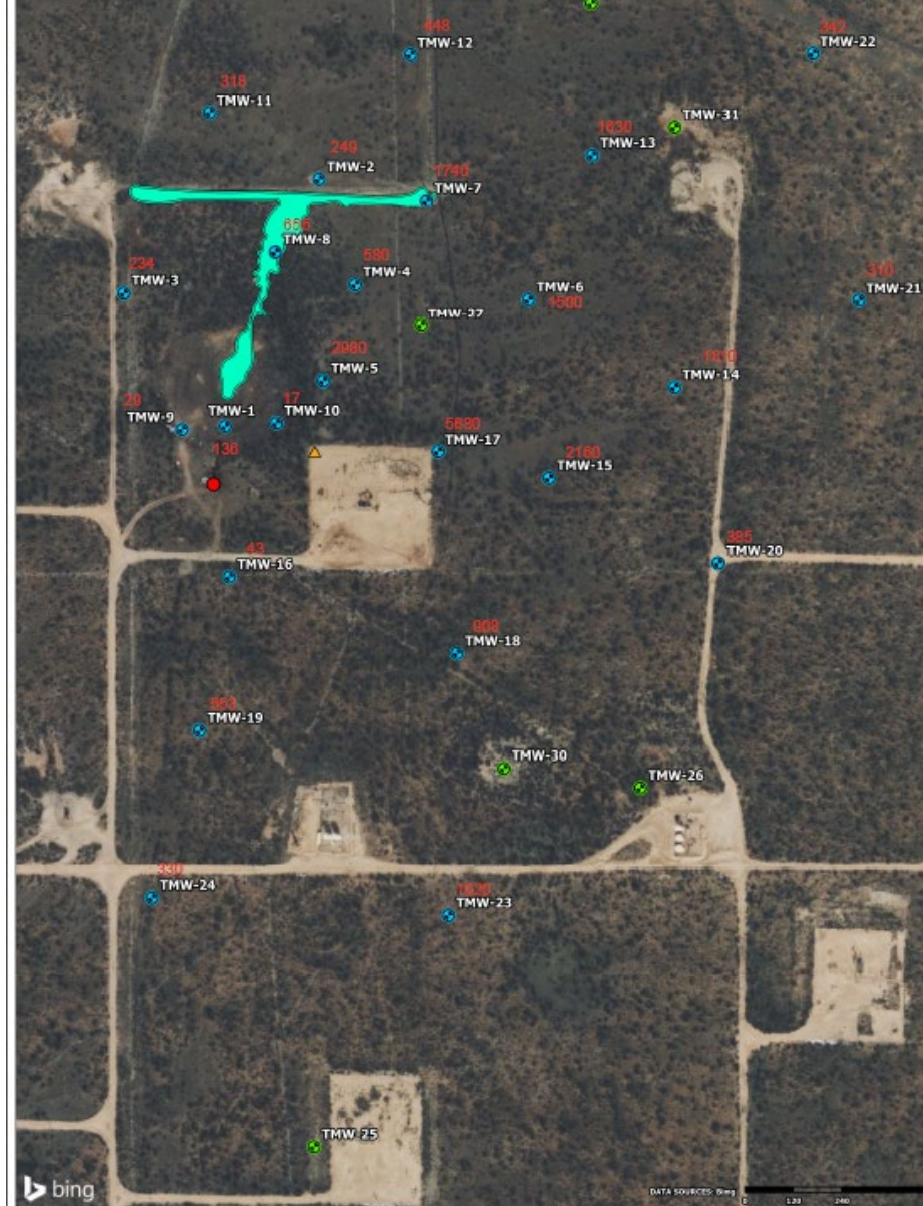
...

B. The oil conservation division may make rules and orders for the purposes and with respect to the subject matter stated in this subsection:

...

(15) to regulate the disposition, handling, transport, storage, recycling, treatment and disposal of produced water during, or for reuse in, the exploration, drilling, production, treatment or refinement of oil or gas, including disposal by injection pursuant to authority delegated under the federal Safe Drinking Water Act, in a manner that protects public health, the environment and fresh water resources;

# Current State of Monitor Wells in the Area for Context



- Inferred Release
- Existing Monitoring Well
- Proposed Monitoring Well
- ▲ Static Control GPS
- Windmill

Project No.: KH247030  
 Date: Sep 09 2024  
 Drawn By: JNL  
 Reviewed By: JRG

**Terracon**  
 4525 W Pierce St  
 Carlsbad, NM  
 PH: 800-300-0140 terracon.com

#### Well Location Map

EBDU 37  
 32.4807053, -103.123085  
 Apache Corporation  
 Eunice, Lea County, New Mexico

Exhibit

1

# Overview of Apache's Groundwater Flows

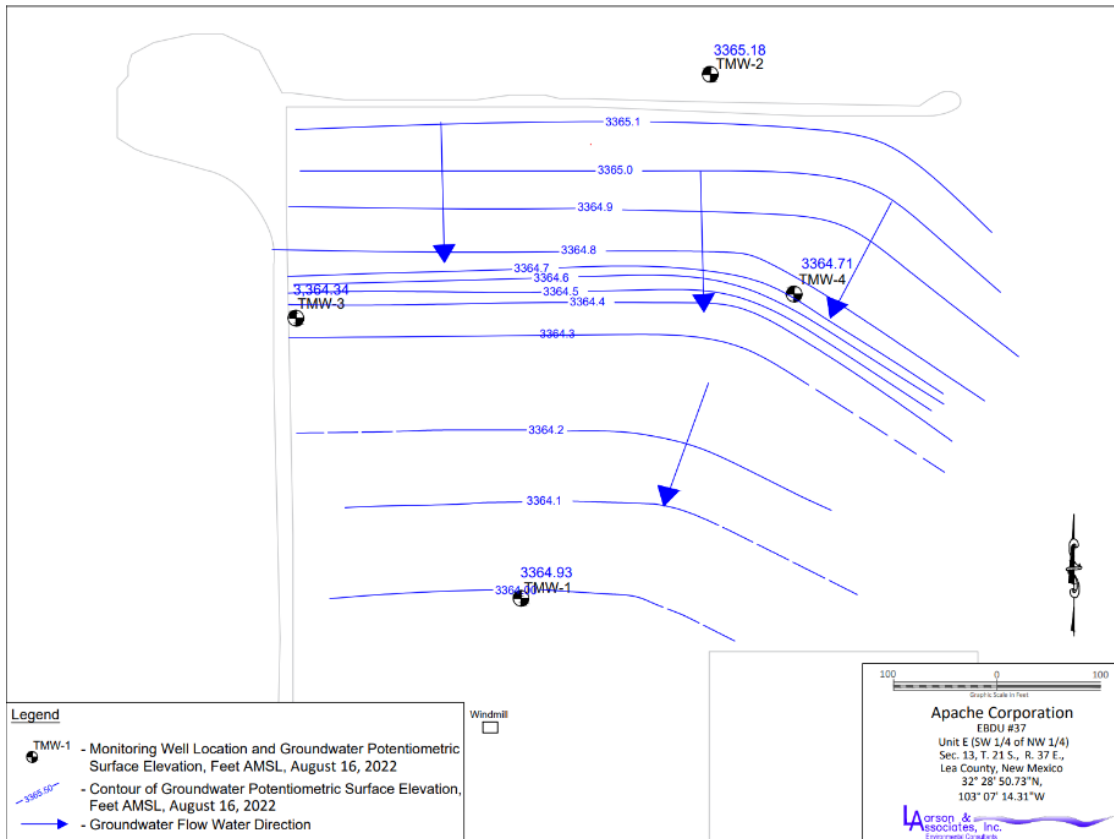


Figure 3b - Groundwater Potentiometric Map, August 16, 2022

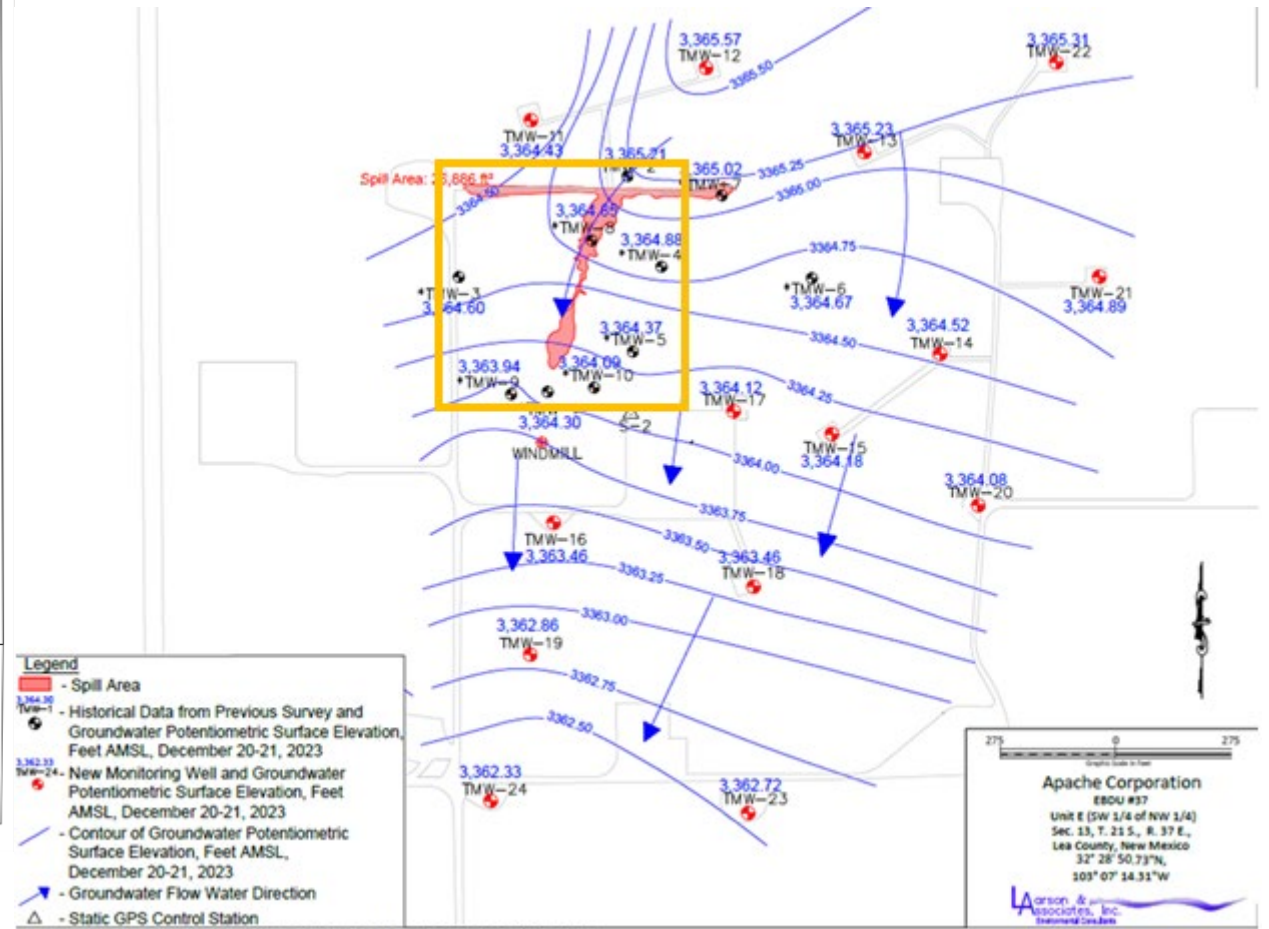


Figure 5a - Groundwater Potentiometric Surface Map, December 20-21, 2023



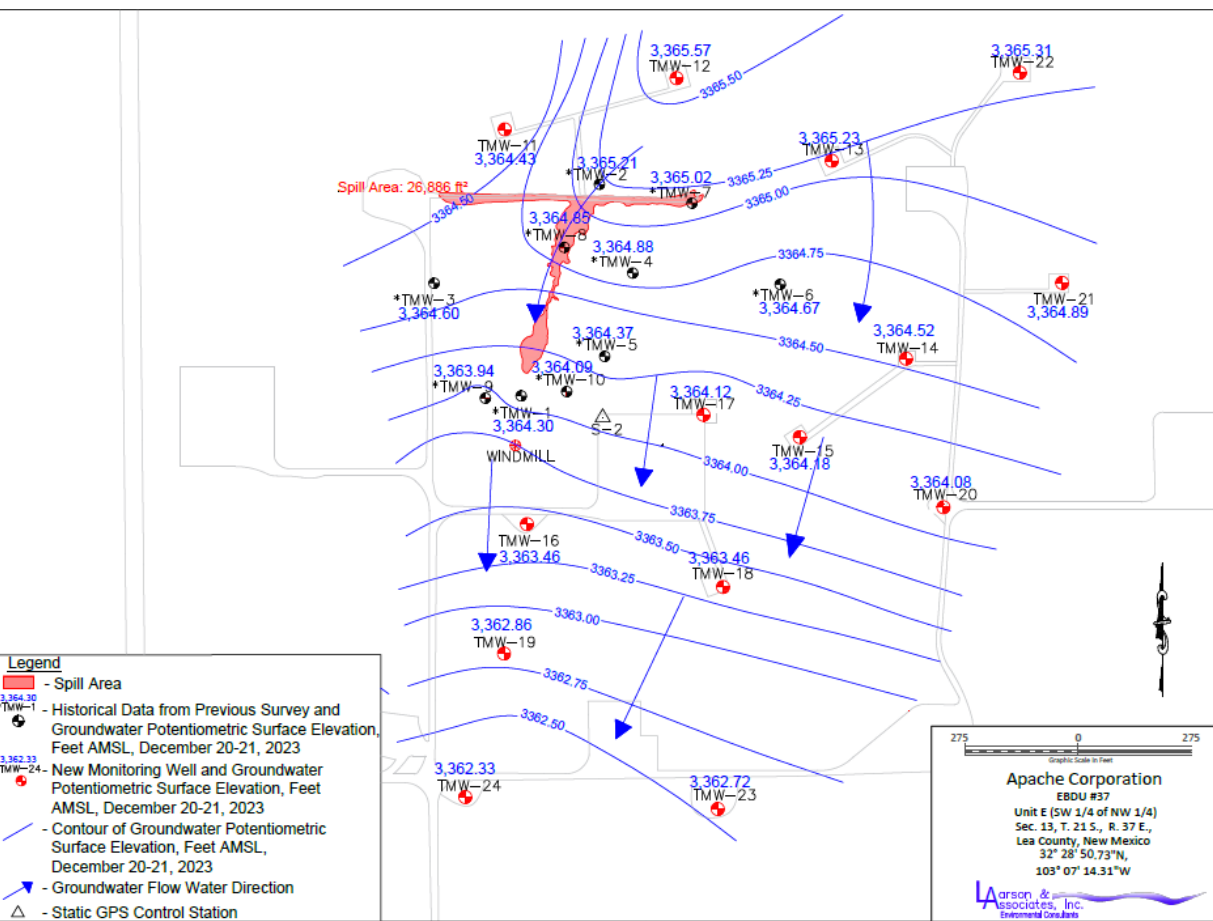


Figure 5a - Groundwater Potentiometric Surface Map, December 20-21, 2023

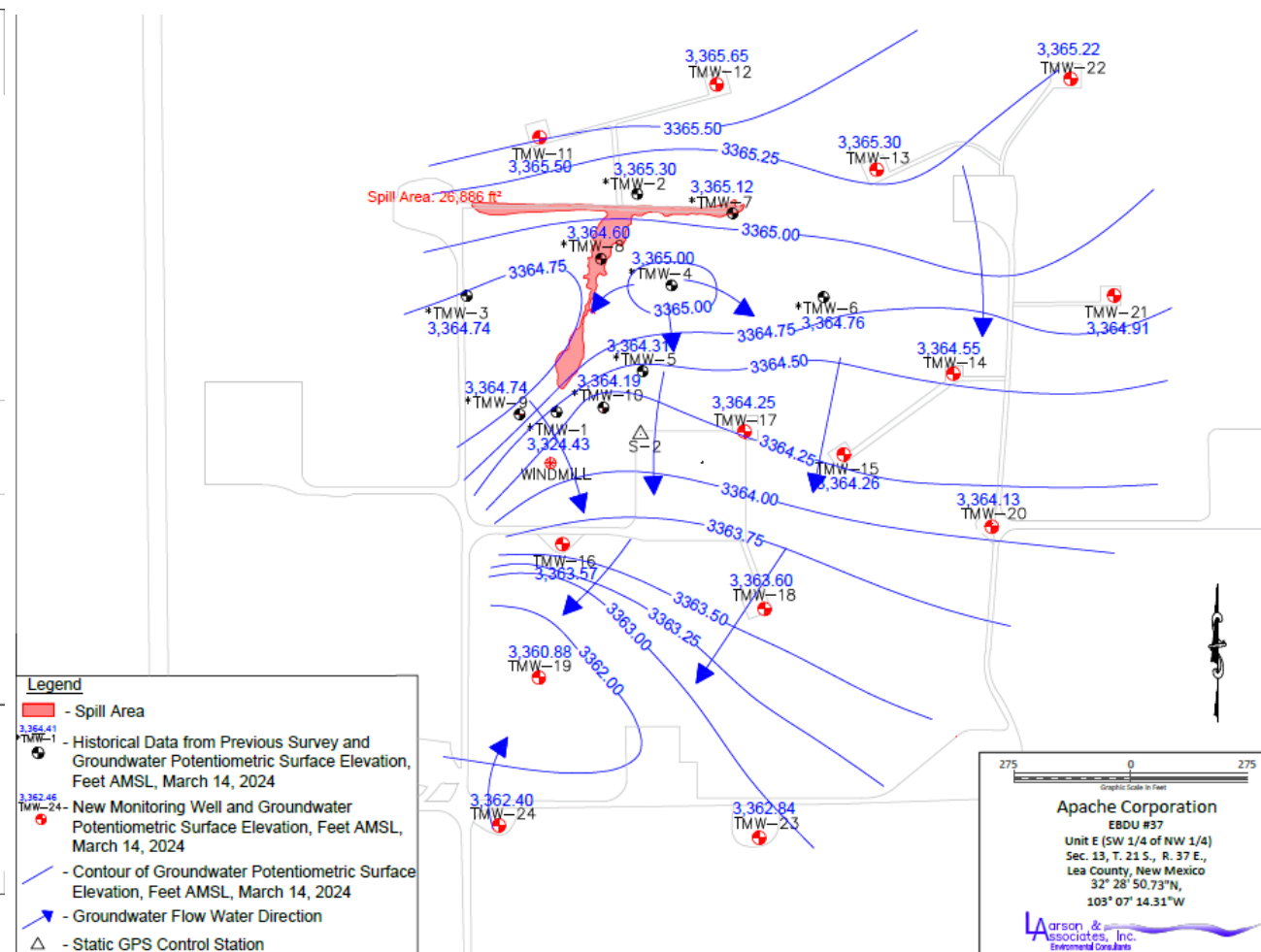


Figure 5b - Groundwater Potentiometric Surface Map, March 14, 2024

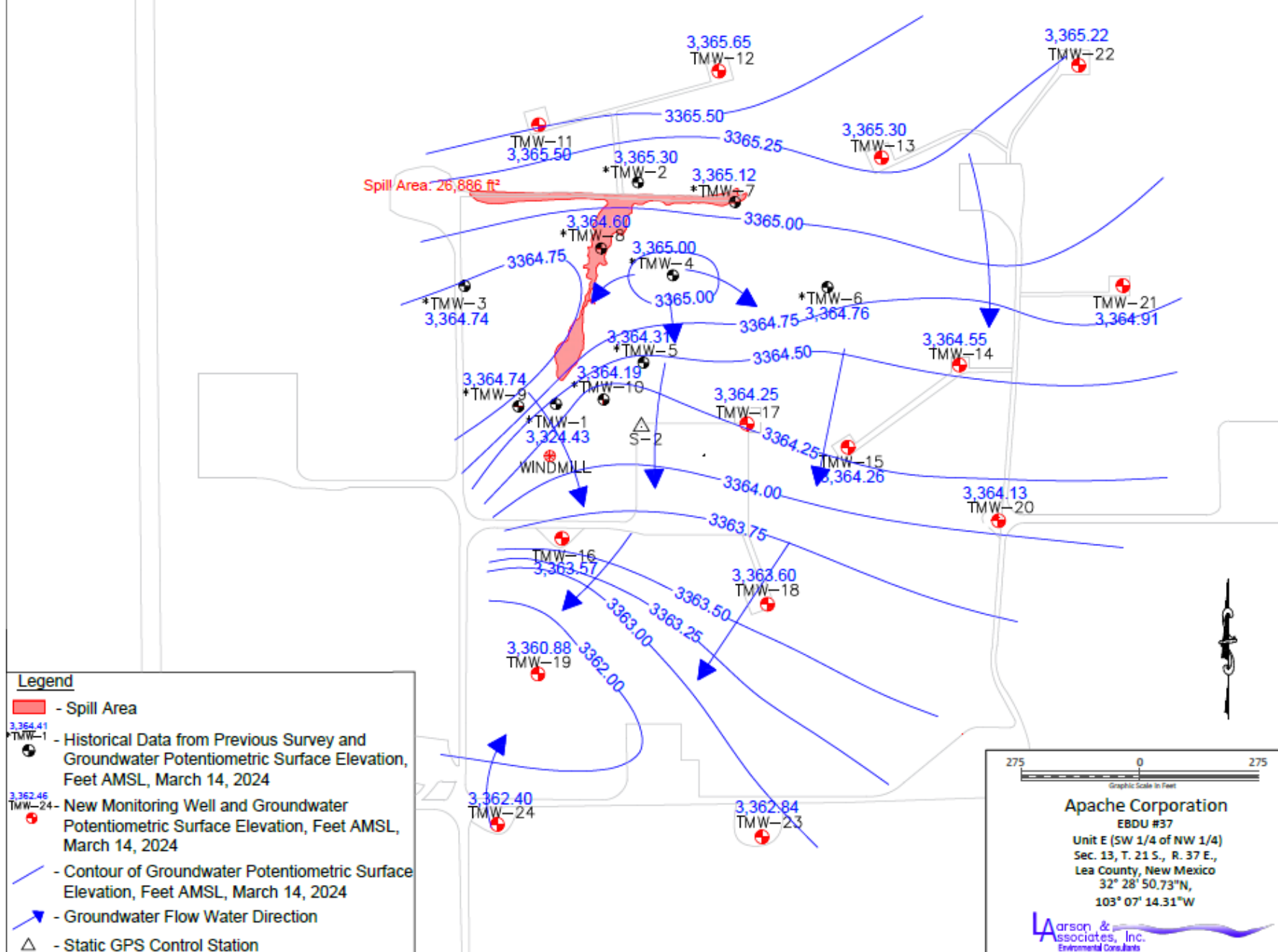


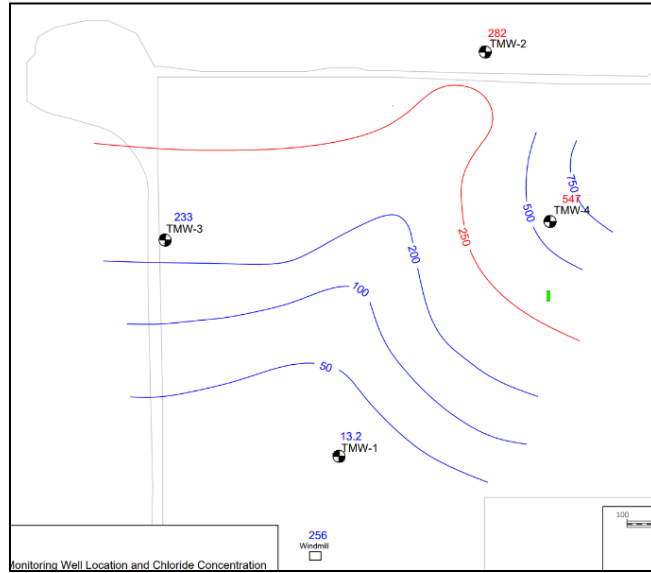
Figure 5b - Groundwater Potentiometric Surface Map, March 14, 2024

OCD Ex. 4-0052

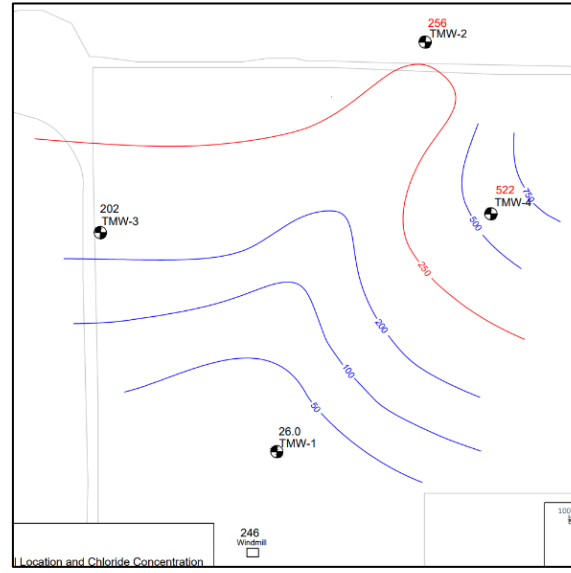


# Overview of Apache's Chloride Concentration Contours

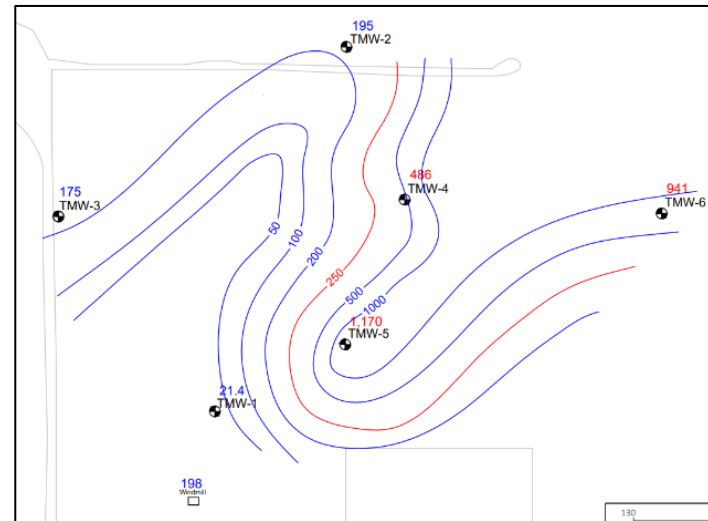
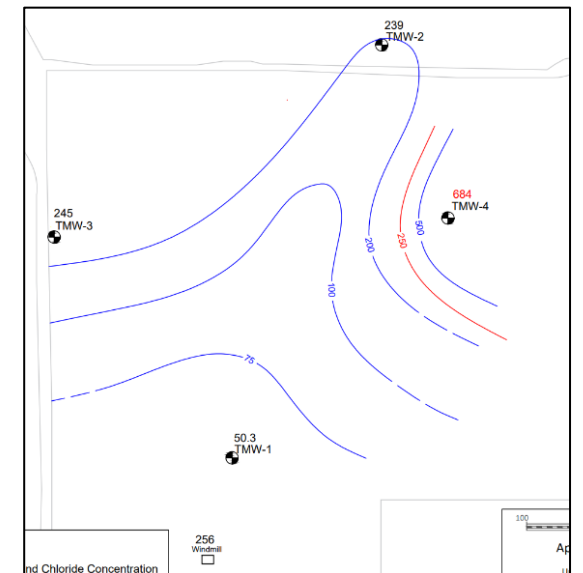
March 1, 2022



May 23, 2022

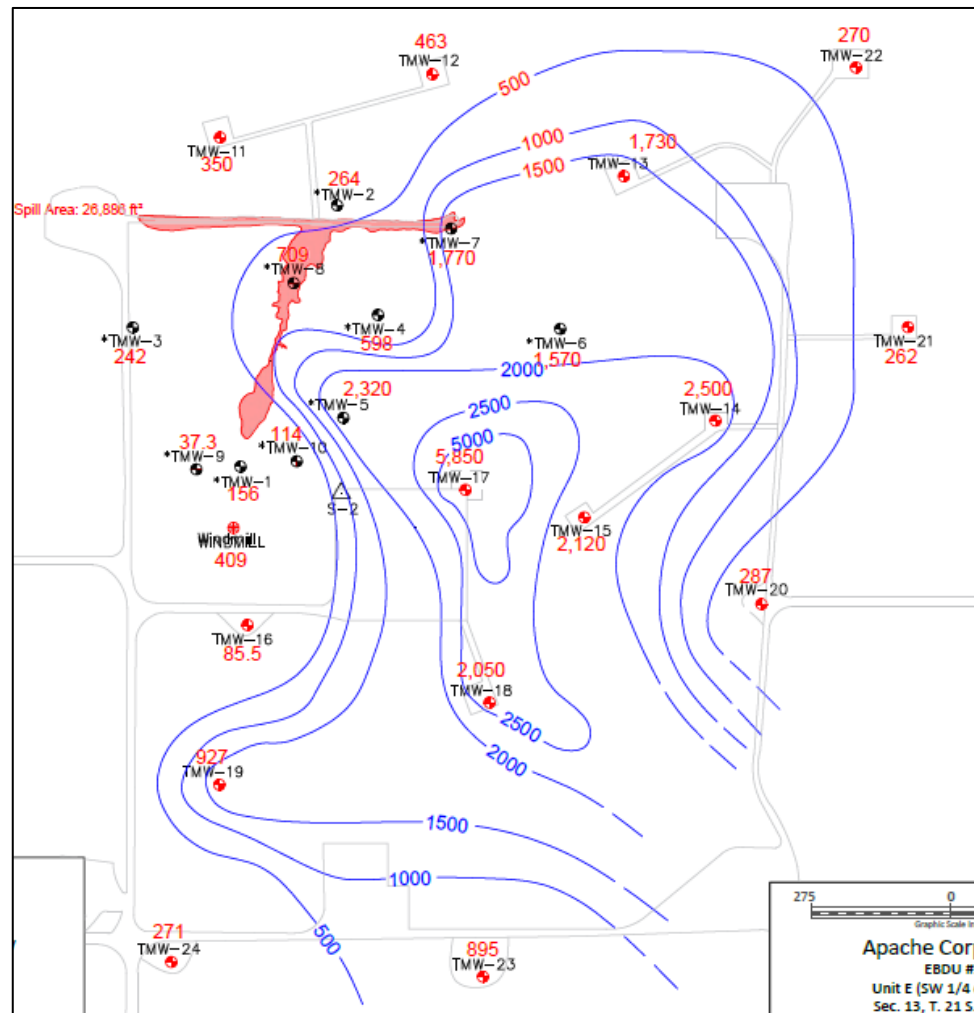


August 16, 2022

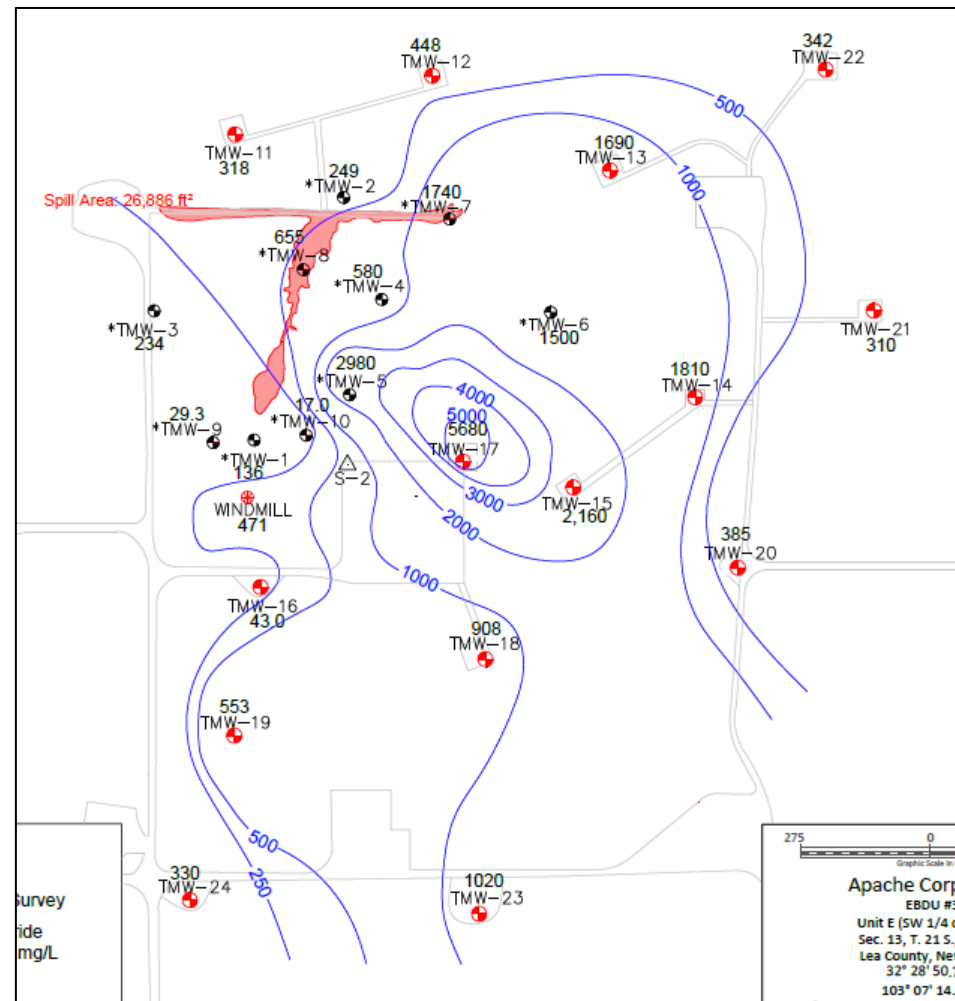


December 15, 2022

December 20-21, 2023



March 14, 2024



# OCD's Conditions of Approval

# Conditions of approval

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- As a result of significant differences in groundwater flow direction at the source area shown between Figure 5a and Figure 5b from December 2023 to March 2024 in the SOW, a denser network of monitoring wells is necessary to better characterize the mass source in the area. Apache Corporation must develop the following within ninety (90) days of this approval date for additional well borings and the subsequent conditions of approval below. The coordinates for each additional monitoring well required for installation by OCD are included in conditions 1. (a through n).

1a. TMW-30 shall be installed approximately 430 feet east of the TMW-28 well proposal, and 50 feet south. Better defining background concentrations. (32.482591, -103.120003)

- 1b. TMW-31 shall be installed approximately 350 feet northwest of TMW-22. Reduces the distance between TMW-12 and TMW-22 for more precise characterization. (32.481806, -103.119008)

1c. TMW-32 shall be installed approximately 275 feet east of TMW-12. Reduces distance between adjacent wells for more precise characterization. (32.481354, -103.119876)

1d. TMW-33 shall be installed approximately 415 feet southwest of TMW-22. Reduces the distance between TMW-21 and TMW-13 for more precise characterization. (32.480643, -103.118728)

1e. TMW-34 shall be installed approximately 350 feet west of TMW-14. Achieves more characterization near TMW-17 which conveys a high chloride level. (32.479492, -103.120080)

# Conditions of approval

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1f. TMW-35 shall be installed approximately 190 feet northeast of TMW-15. Addresses more necessary characterization near TMW-17 (32.479341, -103.119302)

1g. TMW-36 shall be installed approximately 175 feet southwest of TMW-17. Addresses need for more characterization near TMW-17 (32.478749, -103.120871)

1h. TMW-37 shall be installed approximately 275 feet southeast of TMW-17. Addresses need for more characterization near TMW-17. (32.478577, -103.119850)

1i. TMW-38 shall be installed approximately 300 feet northwest of proposed TMW-26. More characterization and assessment needed in the southeast region of the release area. (32.477683, -103.119429)

1j. TMW-39 shall be installed approximately 200 feet southeast of TMW-18. The release area in southeast area needs tighter monitoring network of characterization and assessment for chloride. (32.477447, -103.120144)

1k. TMW-40 shall be installed approximately 200 feet southeast of TMW-16. Addresses lack of characterization and assessment between MW-19 and MW-18 (32.477640, -103.121407)



# Conditions Continued

---

1l. TMW-41 shall be installed approximately 275 feet east of TMW-24. Addresses lack of characterization and assessment between TMW-24 and TMW-23 (32.476499, -103.121560)

1m. TMW-42 shall be installed approximately 220 feet east of TMW-23. Addresses lack of characterization and assessment between TMW-25 and TMW-26 (32.476456, -103.119774)

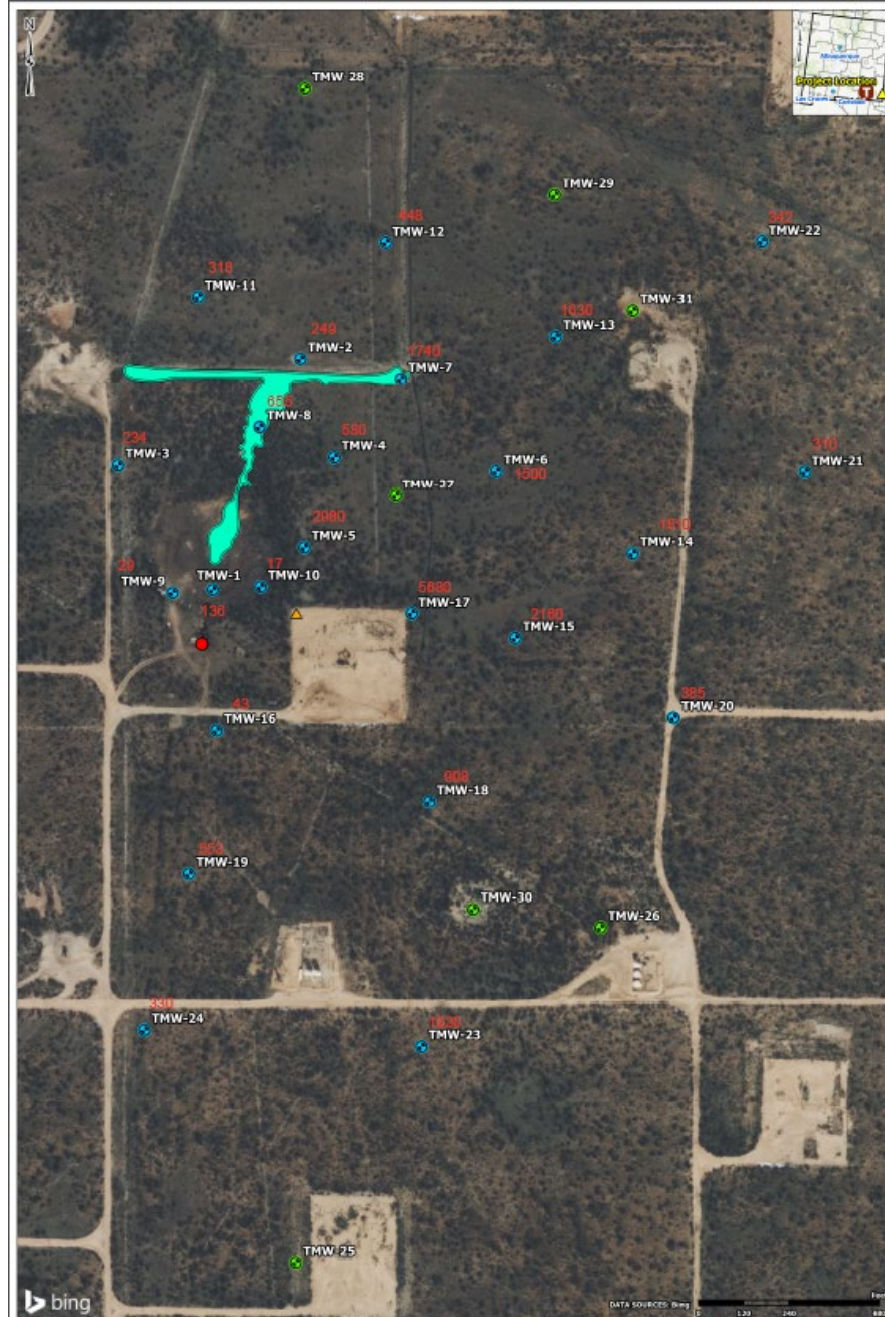
1n. TMW-42 shall be installed approximately 75 feet NE of TMW-13. Addresses lack of characterization between TMW-13 and TMW-22. (32.4811185, -103.1189847)

# Conditions Continued

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2. A current and up-to-date site map showing proposed monitoring wells in the SOW, and the additional thirteen (14) monitoring wells prescribed by OCD for further characterization and assessment of chlorides and BTEX.
3. Any quarterly monitoring collected to the present (summary table and lab analyses are sufficient).
4. The windmill well must be sampled and analyzed for barium in the next round of groundwater monitoring.
5. Both TMW #5 and TMW #17 must be sampled for all human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC as these two wells had the highest concentrations of contamination.
6. All proposed monitoring wells in the Scope of Work for Additional Investigation and the additional required monitoring wells by OCD must have soil sample analyses for TPH, chloride, and BTEX by EPA Methods 8260, EPA Method 300 and EPA Method 8015. Five (5) foot interval composite samples are acceptable.
7. Drilling for all wells is required to commence within ninety (90) days from this date of approval.
8. 19.15.5.11 ENFORCEABILITY OF PERMITS AND ADMINISTRATIVE ORDERS: A person who conducts an activity pursuant to a permit, administrative order or other written authorization or approval from the division shall comply with every term, condition and provision of the permit, administrative order, authorization or approval. [19.15.5.11 NMAC - Rp, 19.15.1.41 NMAC, 12/1/2008]

# Well Locations and Area Overview and Examples for Context

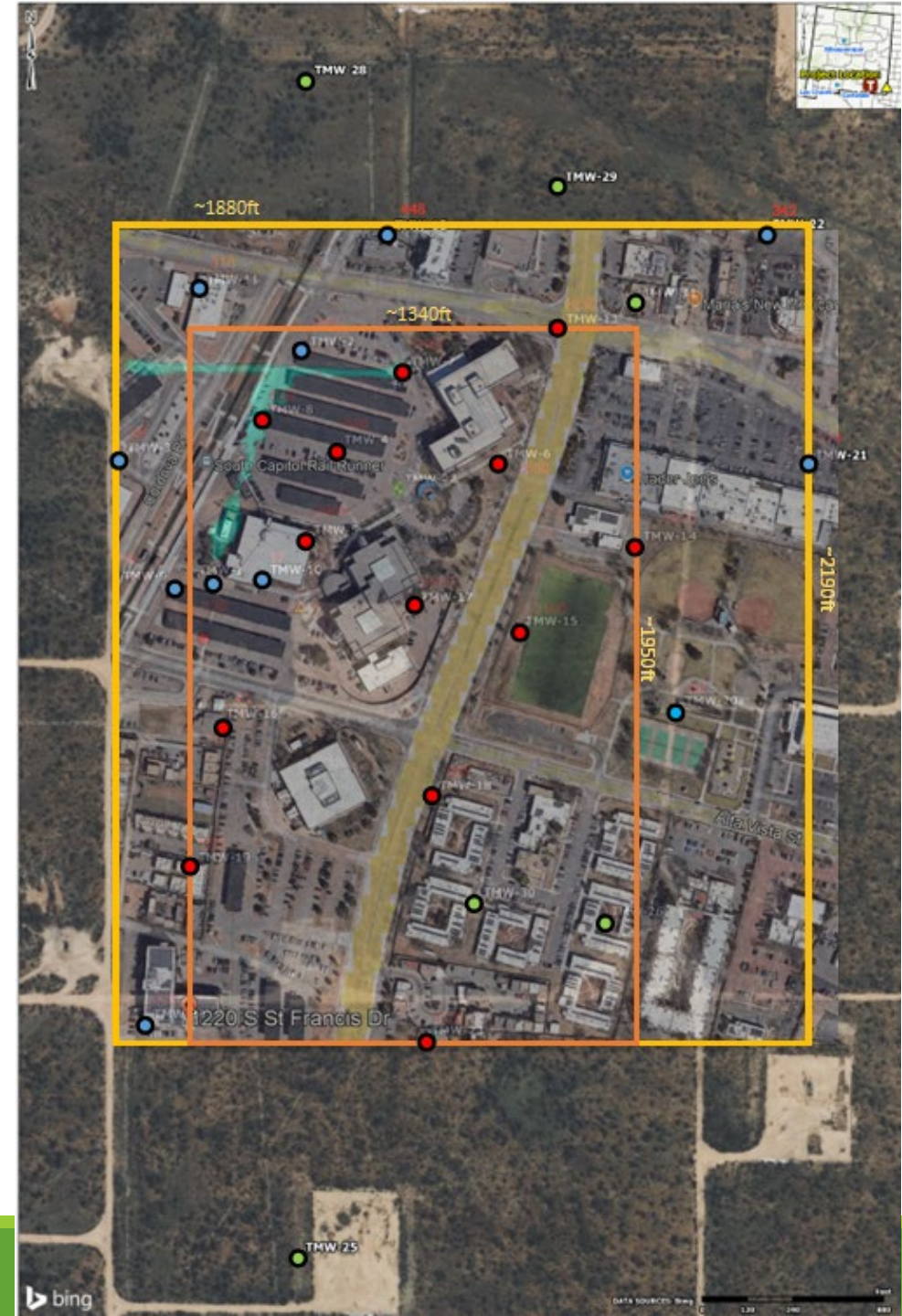


November 2024



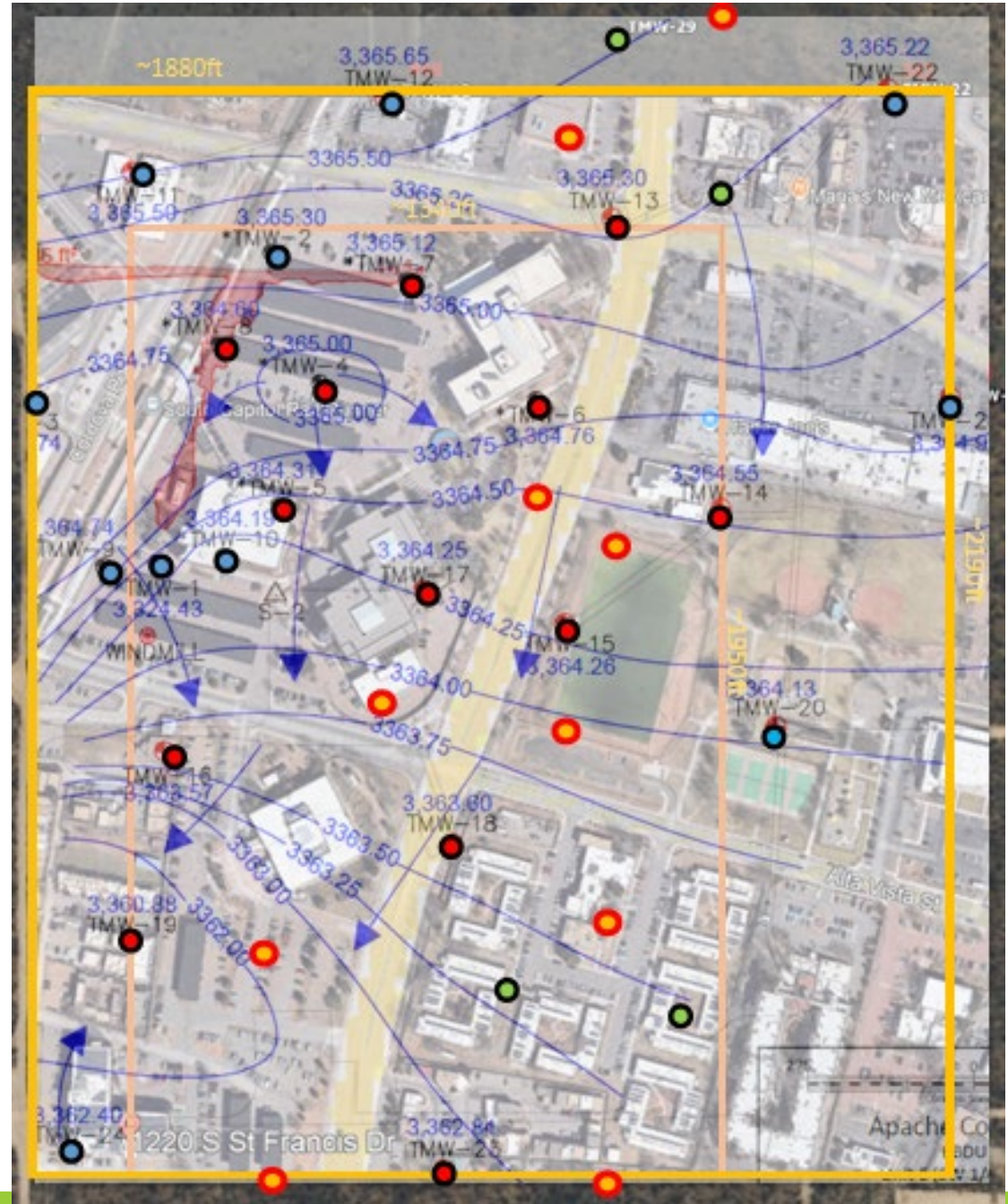




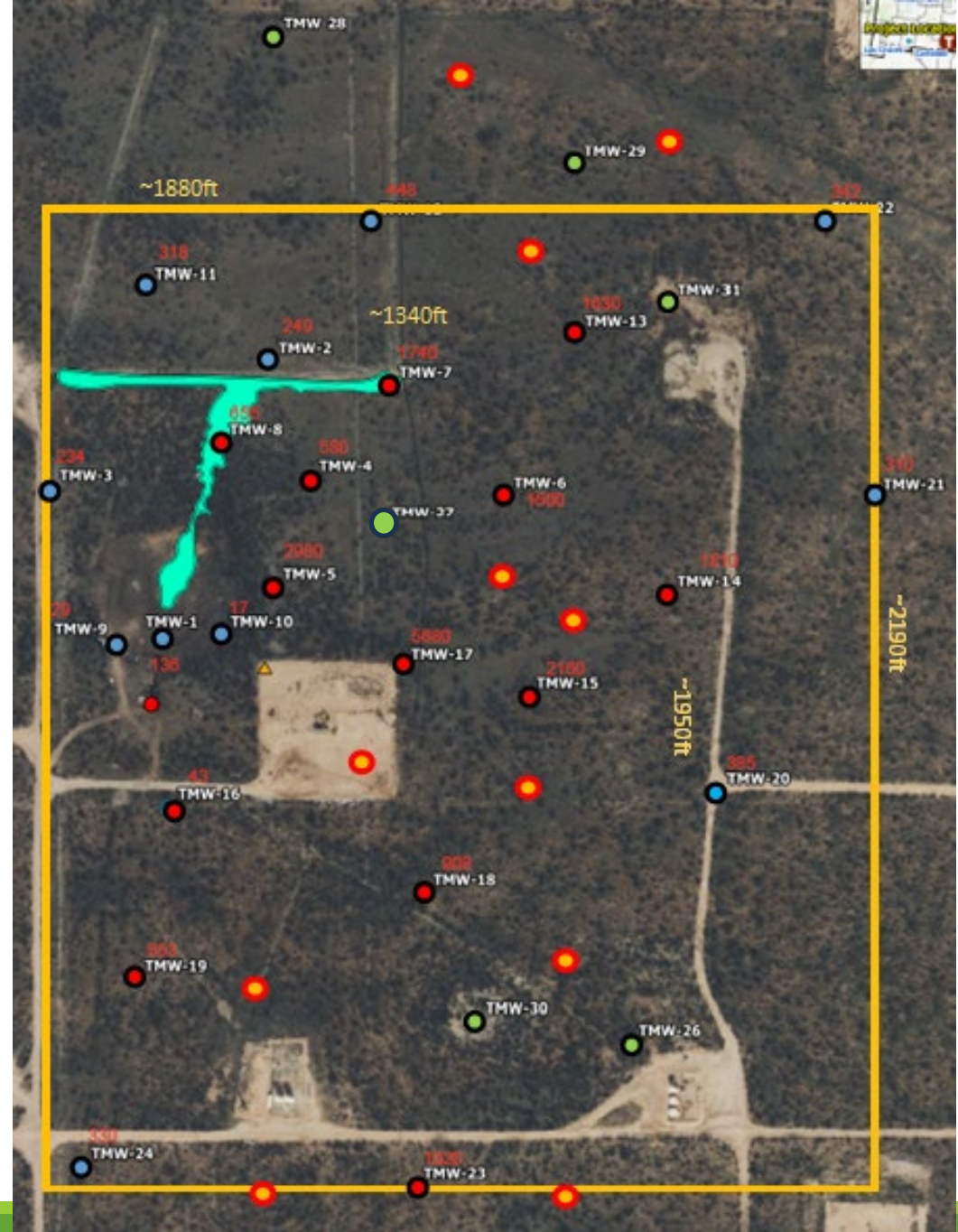
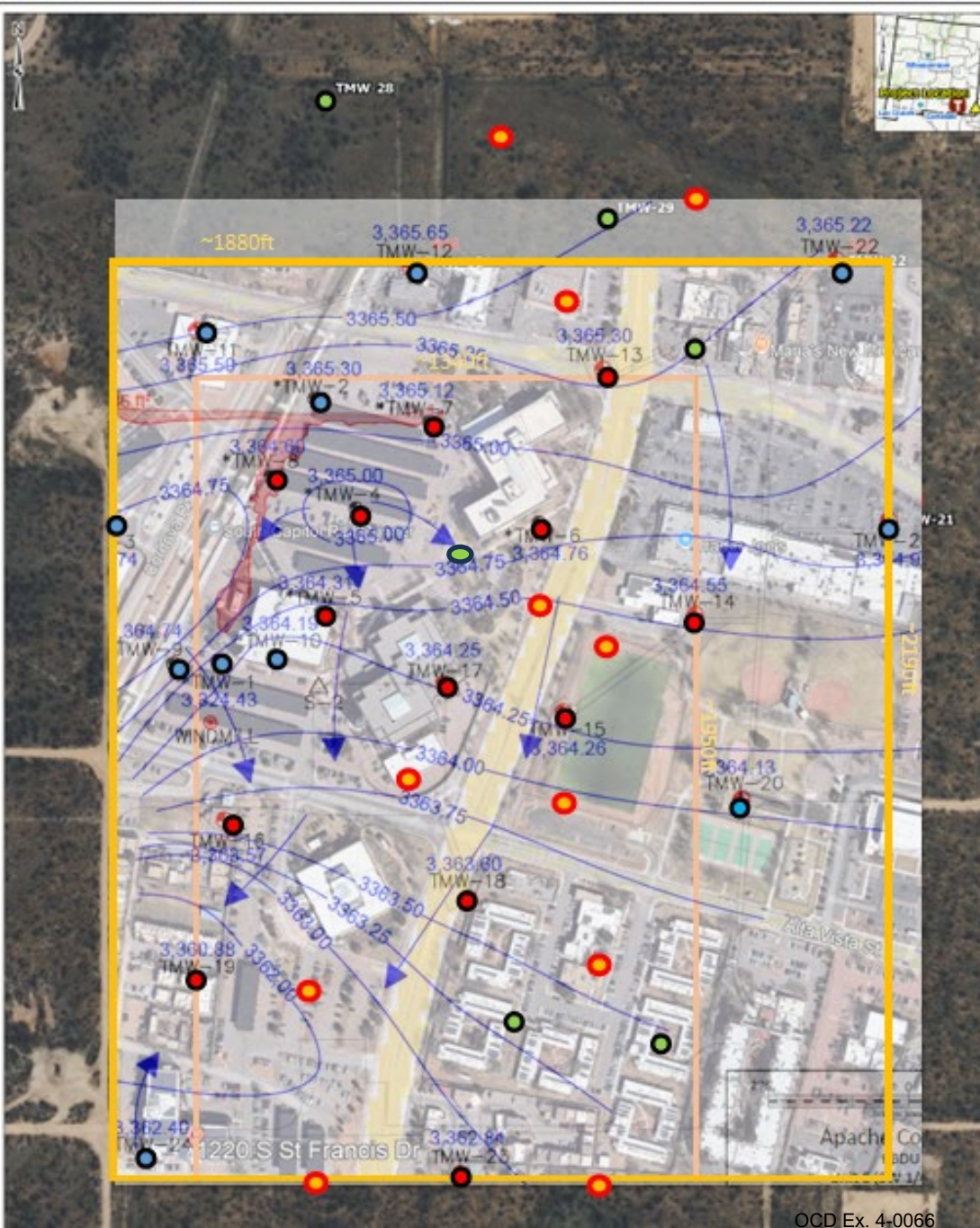


OCD Ex. 4-0064









Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Larry Baker Title: Environmental Tech Sr.

Signature: Larry Baker Date: 2/9/2021

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

Note: This is for the soil remediation only 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: \_\_\_\_\_



**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

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Figure 2	Aerial Map of Spill Area
Figure 3	Aerial Map showing Monitoring Well Locations
Figure 4	Site Map Showing Monitoring Well Locations

## Appendices

Appendix A	Initial C-141
Appendix B	Laboratory Reports
Appendix C	Photographs
Appendix D	OCD Communications

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Closure Report  
EBDU #37 Produced Water Spill  
December 31, 2020

## 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



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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.

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December 31, 2020

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

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## **5.0 CLOSURE REQUEST**

Apache requests no further action for this release.

## **Tables**

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

Page 1 of 3

Area	Sample ID	Location	Depth (feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Standard:						10	50				100/2,500	600/10,000
Confirmation Composite Samples												
1	C-1	Sidewall	0 - 4	07/13/2020 08/04/2020	Excavated In-Situ	<0.00201 --	<0.00201 --	<49.8 <50.3	83.3 <50.3	<49.8 <50.3	83.3 <50.3	<b>1,150</b> 338
1	C-2	Sidewall	0 - 4 0 - 4	07/13/2020 07/27/2020	Excavated In-Situ	<0.00202 --	<0.00202 --	<49.8 --	<49.8 --	<49.8 --	<49.8 --	<b>3,570</b> 87
1	C-3	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00202 --	<0.00202 --	<50.0 --	<50.0 --	<50.0 --	<50.0 --	<b>1,990</b> 39
1	C-4	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00199 --	0.00262 --	<49.8 --	<49.8 --	<49.8 --	<49.8 --	<b>3,060</b> 21.8
1	C-5	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00200 --	0.00205 --	<50.0 --	<50.0 --	<50.0 --	<50.0 --	<b>650</b> 5.75
1	C-6	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00200 --	0.00262 --	<50.0 --	<50.0 --	<50.0 --	<50.0 --	<b>1,060</b> 162
1	C-7	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00200 --	0.00378 --	<49.8 --	<49.8 --	<49.8 --	<49.8 --	<b>12,100</b> 11.5
1	C-8	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00198 --	<0.00198 --	<50.0 --	<50.0 --	<50.0 --	<50.0 --	<b>24,800</b> 19
1	C-9	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00199 --	0.00438 --	<49.9 --	<49.9 --	<49.9 --	<49.9 --	<b>4,160</b> 200
1	C-10	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00201 --	0.00336 --	<49.8 --	<49.8 --	<49.8 --	<49.8 --	<b>2,190</b> 126
1	C-11	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00539	<50.0	<50.0	<50.0	<50.0	44.8
1	C-12	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00198 --	0.00415 --	<50.0 --	<50.0 --	<50.0 --	<50.0 --	<b>626</b> 17.6
2	C-13	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00198	0.00252	<50.0	<50.0	<50.0	<50.0	44.1
2	C-14	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00570	<49.9	<49.9	<49.9	<49.9	14.1
2	C-15	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00254	<49.9	<49.9	<49.9	<49.9	24.3
2	C-16	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00552	<50.0	<50.0	<50.0	<50.0	229
2	C-17	Sidewall	0 - 4	07/13/2020 07/29/2020	Excavated In-Situ	<0.00200 --	0.00275 --	<49.9 --	<49.9 --	<49.9 --	<49.9 --	<b>927</b> 9.8
2	C-18	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00722	<50.0	<50.0	<50.0	<50.0	227
1	C-19	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00199	0.00557	<50.0	<50.0	<50.0	<50.0	60.6

OCD Ex. 5-0076

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

Page 2 of 3

1	C-20	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00968	<49.9	<49.9	<49.9	<49.9	44.3
1	C-21	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	0.00705	<50.0	<50.0	<50.0	<50.0	1,290
				07/29/2020	In-Situ	--	--	--	--	--	--	237
1	C-22	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	0.00493	<50.0	<50.0	<50.0	<50.0	704
				07/29/2020	Excavated	--	--	--	--	--	--	608
				8/04/2020	In-Situ	--	--	--	--	--	--	10.7
1	C-23	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	0.00339	<49.9	<49.9	<49.9	<49.9	6,200
				07/29/2020	Excavated	--	--	--	--	--	--	13,900
				8/04/2020	In-Situ	--	--	--	--	--	--	15.8
1	C-24	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	0.00732	<50.0	<50.0	<50.0	<50.0	1,110
				07/29/2020	In-Situ	--	--	--	--	--	--	37.4
1	C-25	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00201	0.00464	<49.9	<49.9	<49.9	<49.9	254
1	C-26	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	5,280
				07/29/2020	In-Situ	--	--	--	--	--	--	307
1	C-27	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	0.00482	<49.9	<49.9	<49.9	<49.9	1,210
				07/29/2020	In-Situ	--	--	--	--	--	--	71.6
1	C-28	Sidewall	0 - 4	07/13/2020	Excavated	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	8,280
				07/29/2020	Excavated	--	--	--	--	--	--	630
				8/04/2020	In-Situ	--	--	--	--	--	--	415
1	C-29	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00199	0.00906	<50.0	<50.0	<50.0	<50.0	197
1	C-30	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00198	0.00556	<50.0	<50.0	<50.0	<50.0	264
1	C-31	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	42.1
1	C-32	Sidewall	0 - 4	07/13/2020	Excavated	<0.00199	0.00325	<50.0	<50.0	<50.0	<50.0	867
				07/29/2020	In-Situ	--	--	--	--	--	--	30.8
1	C-33	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00199	0.00712	<49.8	<49.8	<49.8	<49.8	553
1	C-34	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00199	0.00781	<50.0	<50.0	<50.0	<50.0	242
1	C-35	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00198	0.00876	<50.0	<50.0	<50.0	<50.0	9.23
1	C-36	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00478	<50.0	<50.0	<50.0	<50.0	64.4
1	C-37	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00200	0.00502	<49.9	<49.9	<49.9	<49.9	14.6
1	C-38	Sidewall	0 - 4	07/13/2020	In-Situ	<0.00199	0.00857	<49.9	<49.9	<49.9	<49.9	28.7
<b>Soil Boring Samples</b>												
2	BH-1	Bottom	10	8/03/2020	In-Situ	--	--	--	--	--	--	11.6
			12	8/03/2020	In-Situ	--	--	--	--	--	--	13.3
			14	8/03/2020	In-Situ	--	--	--	--	--	--	13.4
			16	8/03/2020	In-Situ	--	--	--	--	--	--	22.9
			18	8/03/2020	In-Situ	--	--	--	--	--	--	34.4
			20	8/03/2020	In-Situ	--	--	--	--	--	--	24.7

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

Page 3 of 3

<b>2</b>	<b>BH-2</b>	<b>Bottom</b>	10	8/10/2020	In-Situ	--	--	--	--	--	--	79.7
			12	8/10/2020	In-Situ	--	--	--	--	--	--	18.4
			14	8/10/2020	In-Situ	--	--	--	--	--	--	10.1
			16	8/10/2020	In-Situ	--	--	--	--	--	--	10.3
			18	8/10/2020	In-Situ	--	--	--	--	--	--	9.67
			20	8/10/2020	In-Situ	--	--	--	--	--	--	9.64
			25	8/10/2020	In-Situ	--	--	--	--	--	--	11.6
<b>2</b>	<b>BH-3</b>	<b>Bottom</b>	10	8/10/2020	In-Situ	--	--	--	--	--	--	774
			12	8/10/2020	In-Situ	--	--	--	--	--	--	666
			14	8/10/2020	In-Situ	--	--	--	--	--	--	419
			16	8/10/2020	In-Situ	--	--	--	--	--	--	60.2
			18	8/10/2020	In-Situ	--	--	--	--	--	--	89.3
			20	8/10/2020	In-Situ	--	--	--	--	--	--	227
			25	8/10/2020	In-Situ	--	--	--	--	--	--	32.7
<b>2</b>	<b>BH-4</b>	<b>Bottom</b>	10	8/10/2020	In-Situ	--	--	--	--	--	--	24
			12	8/10/2020	In-Situ	--	--	--	--	--	--	12
			14	8/10/2020	In-Situ	--	--	--	--	--	--	10.3
			16	8/10/2020	In-Situ	--	--	--	--	--	--	15
			18	8/10/2020	In-Situ	--	--	--	--	--	--	12.7
			20	8/10/2020	In-Situ	--	--	--	--	--	--	11.8
			25	8/10/2020	In-Situ	--	--	--	--	--	--	13.4
<b>2</b>	<b>BH-5</b>	<b>Bottom</b>	10	8/11/2020	In-Situ	--	--	--	--	--	--	10.2
			12	8/11/2020	In-Situ	--	--	--	--	--	--	9.94
			14	8/11/2020	In-Situ	--	--	--	--	--	--	9.78
			16	8/11/2020	In-Situ	--	--	--	--	--	--	12.2
			18	8/11/2020	In-Situ	--	--	--	--	--	--	9.3
			20	8/11/2020	In-Situ	--	--	--	--	--	--	9.77
												10.5

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)

&lt;: denotes concentration less than analytical method reporting limit

**Bold and Highlighted exceeds OCD remediation action limits and excavated**



## **Figures**

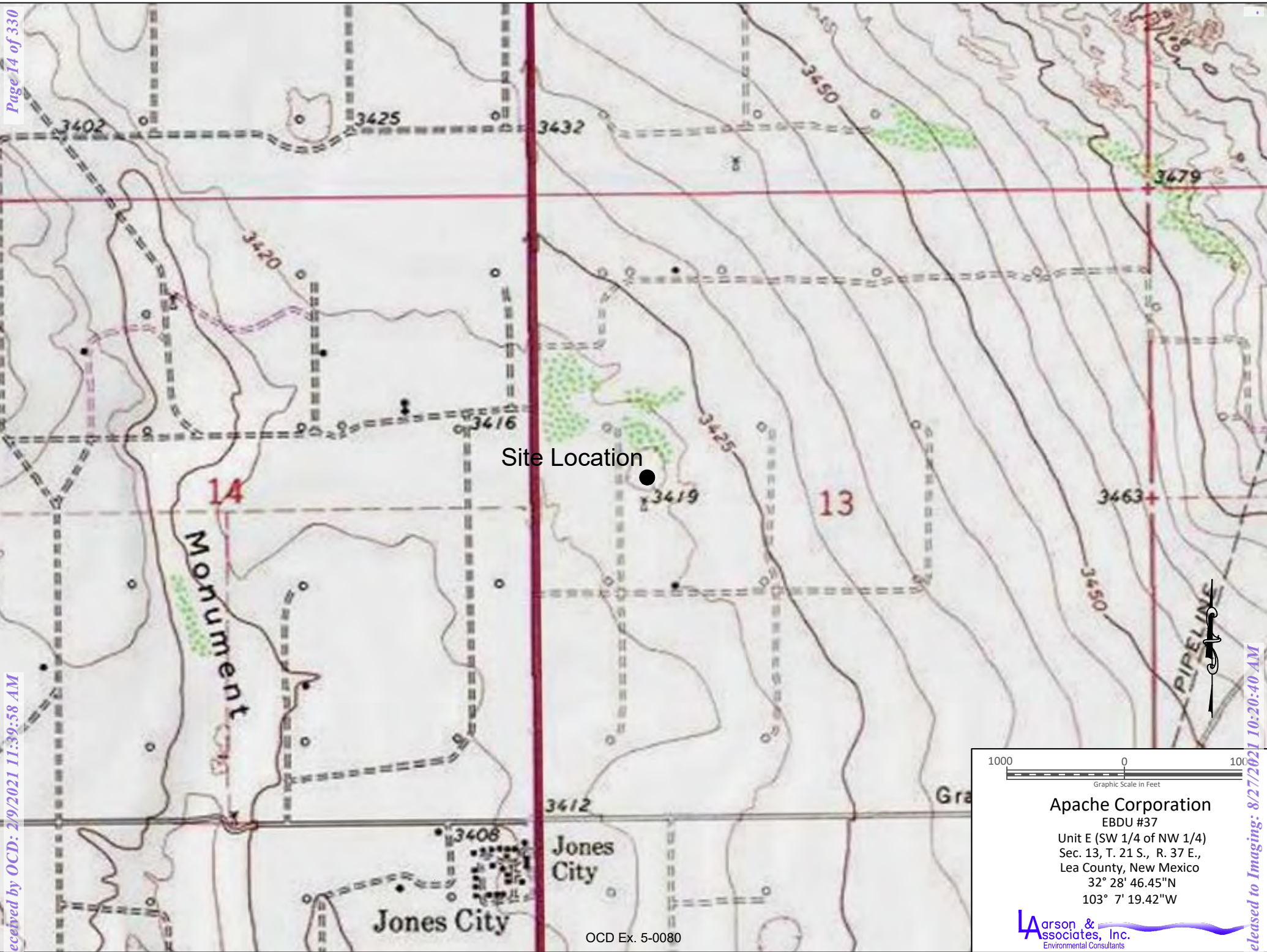
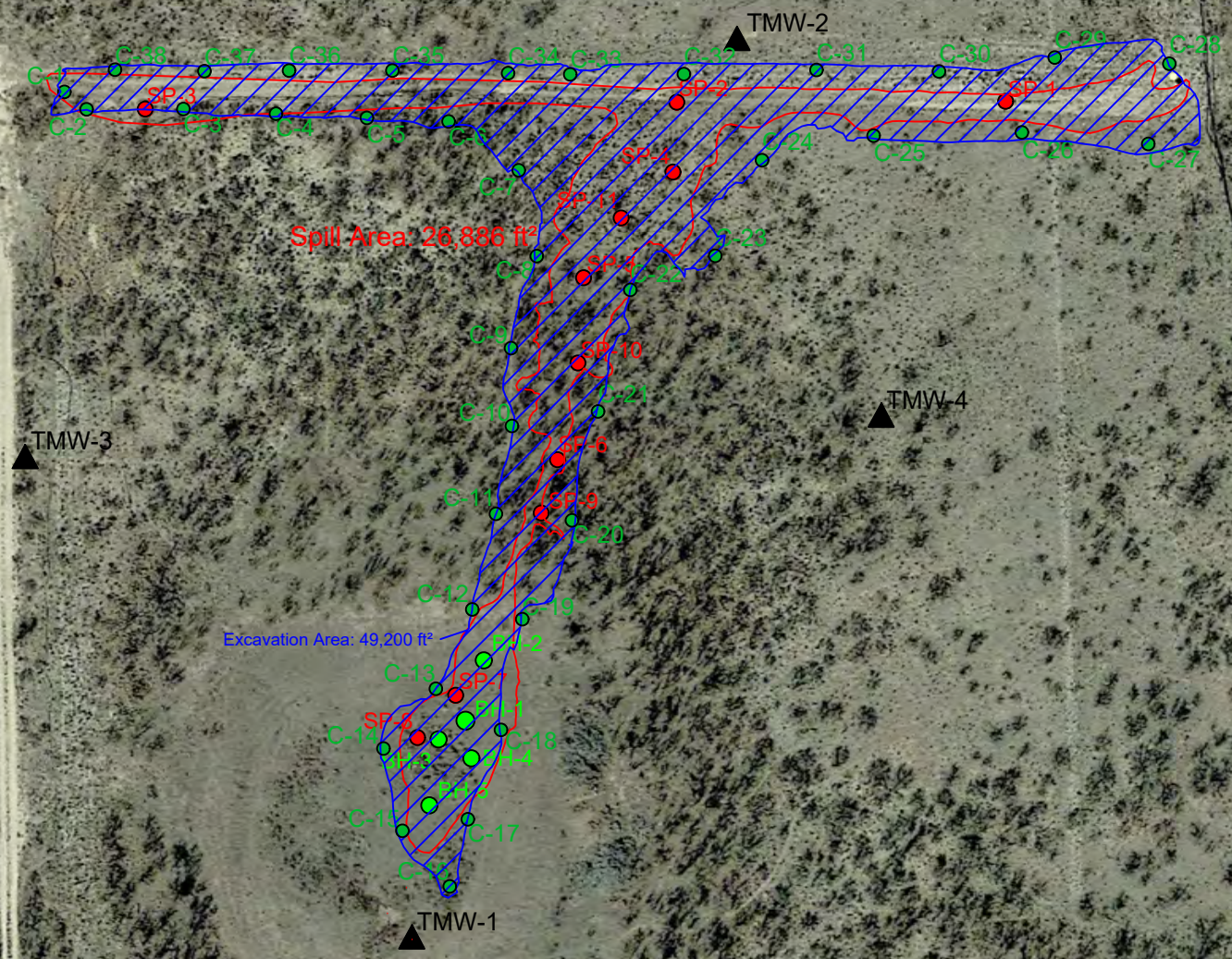
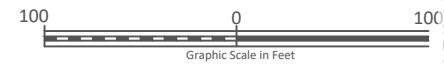


Figure 1 - Topographic Map





- Legend
- Spill Area
  - SP-1 - Soil Sample Location
  - ▲ - Monitoring Well
  - Excavation Area
  - BH-1 - Boring Hole Location
  - C-1 - Confirmation Sample Location



Apache Corporation  
EBDU #37  
Unit E (SW 1/4 of NW 1/4)  
Sec. 13, T. 21 S., R. 37 E.,  
Lea County, New Mexico  
32° 28' 50.73"N,  
103° 07' 14.31"W

Larson & Associates, Inc.  
Environmental Consultants

OCD Ex. 5-0081

Figure 2 - Aerial Map Showing Excavation Area



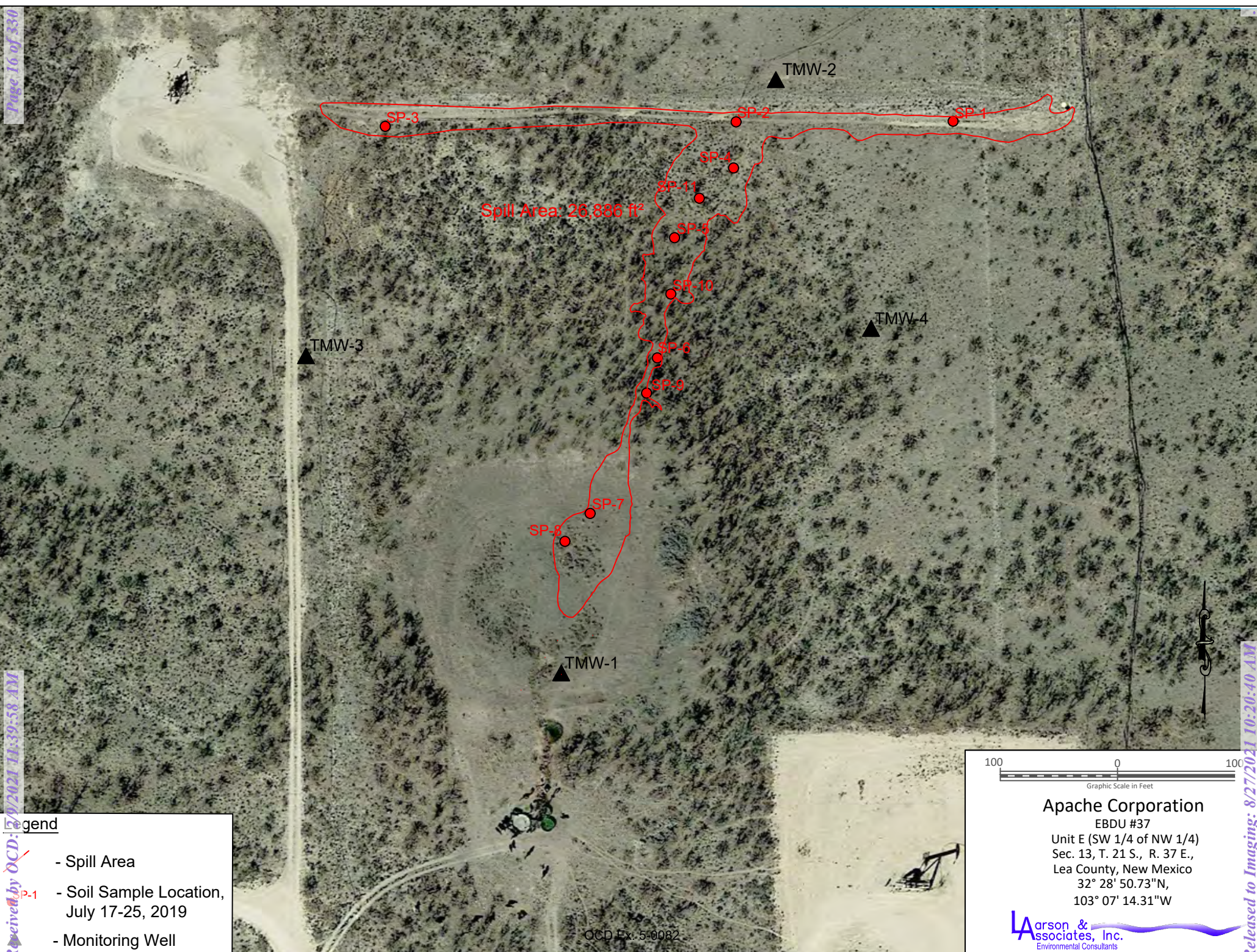
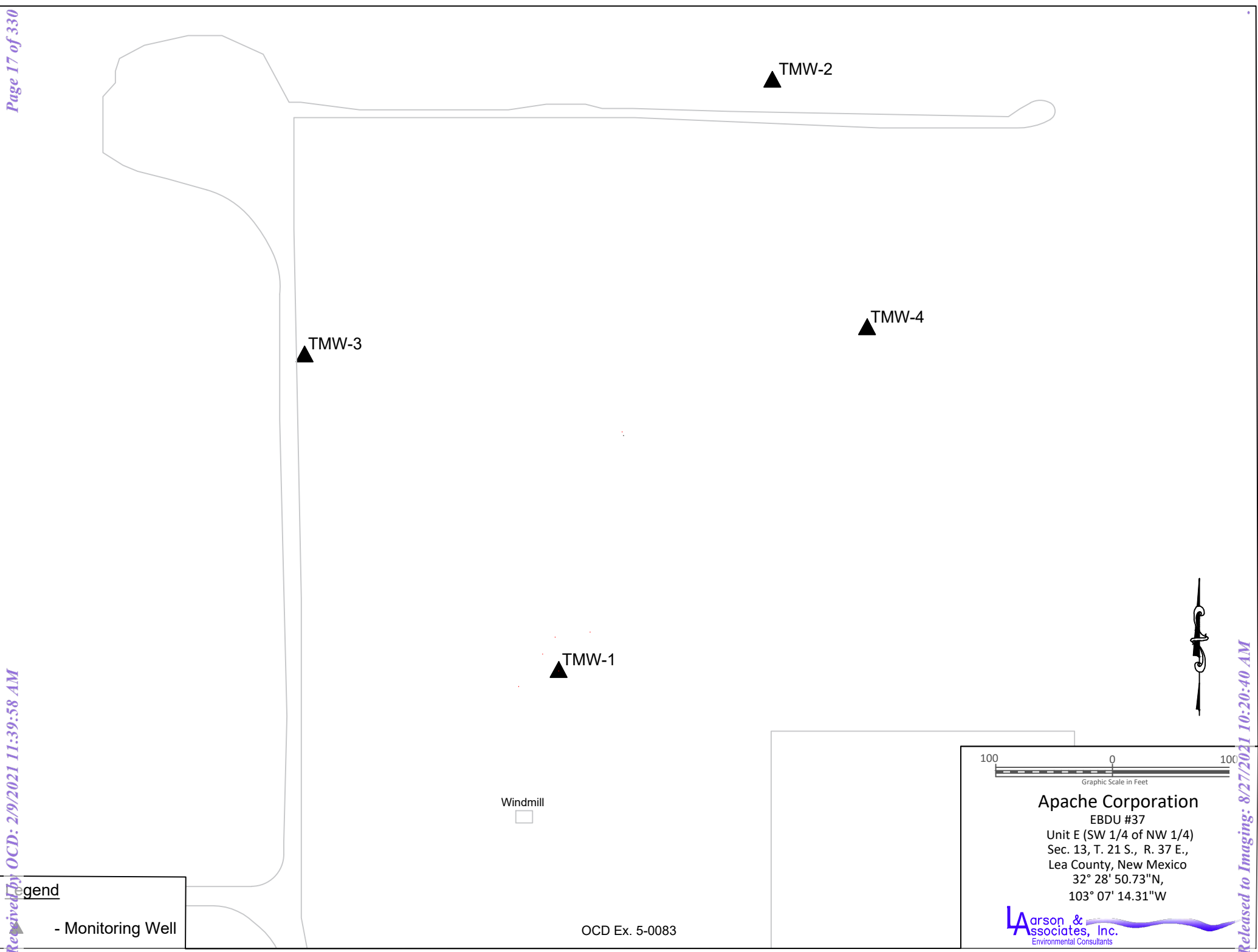


Figure 3 - Site Map Showing Monitoring Well Locations



Figure 4 - 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: W 32.4807053 Longitude: N -103.123085

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EBDU #37 WIW	Site Type: Water Injection Well
Date Release Discovered: July 14, 2019	API # 3002506556

Unit Letter	Section	Township	Range	County
E	12	21S	37E	LEA

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

### Nature and Volume of Release

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

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

Cause of Release

Isolation valve failure due to internal corrosion.



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

<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?</p> <p>Via email given to NM OCD by Bruce Baker, Senior Environmental Technician, Apache Corporation</p>	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Jeff Broom</u>	Title: <u>Environmental Technician</u>
Signature: _____	Date: <u>07/24/2019</u>
Email: <u>Jeffrey.Broom@apachecorp.com</u>	Telephone: <u>(432) 664-4677</u>
<b><u>OCD Only</u></b>	
Received by: <u>Dylan Rose-Coss</u>	Date: <u>08/09/2019</u>

**Appendix B**  
**Laboratory Reports**

## Certificate of Analysis Summary 667044



Larson and Associates, Inc., 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-001	667044-002	667044-003	667044-004	667044-005	667044-006
	<i>Field Id:</i>	C-1	C-2	C-3	C-4	C-5	C-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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		83.3 49.8	<49.8 49.8	<50.0 50.0	<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

## Certificate of Analysis Summary 667044



Larson and Associates, Inc., 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-007	667044-008	667044-009	667044-010	667044-011	667044-012
	<i>Field Id:</i>	C-7	C-8	C-9	C-10	C-11	C-12
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
Toluene		0.00378 0.00200	<0.00198 0.00198	0.00438 0.00199	0.00336 0.00201	0.00539 0.00200	0.00415 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00400 0.00400	<0.00397 0.00397	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00396 0.00396
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		0.00378 0.00200	<0.00198 0.00198	0.00438 0.00199	0.00336 0.00201	0.00539 0.00200	0.00415 0.00198
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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# Certificate of Analysis Summary 667044

Larson and Associates, Inc., Midland, TX

Project Name: EBDU #37

Project Id: 19-0112-49

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 07.13.2020 16:43

Report Date: 07.24.2020 13:02

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-013	667044-014	667044-015	667044-016	667044-017	667044-018
	<i>Field Id:</i>	C-13	C-14	C-15	C-16	C-17	C-18
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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

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## Certificate of Analysis Summary 667044



Larson and Associates, Inc., 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-019	667044-020	667044-021	667044-022	667044-023	667044-024
	<i>Field Id:</i>	C-19	C-20	C-21	C-22	C-23	C-24
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<49.9 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	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0

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## Certificate of Analysis Summary 667044



Larson and Associates, Inc., 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-025	667044-026	667044-027	667044-028	667044-029	667044-030
	<i>Field Id:</i>	C-25	C-26	C-27	C-28	C-29	C-30
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0

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## Certificate of Analysis Summary 667044



Larson and Associates, Inc., 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

<i>Analysis Requested</i>	<i>Lab Id:</i>	667044-031	667044-032	667044-033	667044-034	667044-035	667044-036
	<i>Field Id:</i>	C-31	C-32	C-33	C-34	C-35	C-36
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.0 50.0

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## Certificate of Analysis Summary 667044

Larson and Associates, Inc., Midland, TX

Project Name: EBDU #37

Project Id: 19-0112-49

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 07.13.2020 16:43

Report Date: 07.24.2020 13:02

Project Manager: Holly Taylor

<b>Analysis Requested</b>	<b>Lab Id:</b>	667044-037	667044-038				
	<b>Field Id:</b>	C-37	C-38				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	07.13.2020 10:52	07.13.2020 10:48				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	07.22.2020 16:30	07.22.2020 16:30				
	<b>Analyzed:</b>	07.23.2020 02:55	07.23.2020 03:15				
	<b>Units/RL:</b>	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				
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	07.16.2020 15:20	07.16.2020 15:20				
	<b>Analyzed:</b>	07.16.2020 19:30	07.16.2020 19:49				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		14.6 X 4.99	28.7 5.04				
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	07.15.2020 08:30	07.15.2020 08:30				
	<b>Analyzed:</b>	07.15.2020 19:00	07.15.2020 19:22				
	<b>Units/RL:</b>	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				
Total TPH		<49.9 49.9	<49.9 49.9				

BRL - Below Reporting Limit

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# 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,

A handwritten signature in black ink that reads "Holly Taylor".

---

**Holly Taylor**  
Project Manager

*A Small Business and Minority Company*

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



# Sample Cross Reference 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



**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: EBDU #37**Project ID: 19-0112-49  
Work Order Number(s): 667044Report Date: 07.24.2020  
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.

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: EBDU #37**Project ID: 19-0112-49  
Work Order Number(s): 667044Report Date: 07.24.2020  
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



# Certificate of Analytical Results 667044

## 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  
 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	1150	4.96	mg/kg	07.16.2020 16:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 07.16.2020 12:00 Basis: Wet Weight  
 Seq Number: 3131955

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	07.16.2020 14:05	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>83.3</b>	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
<b>Total TPH</b>	PHC635	<b>83.3</b>	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	
o-Terphenyl	84-15-1	106	%	70-130	07.16.2020 14:05	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-1  
Lab Sample Id: 667044-001

Matrix: Soil  
Date Collected: 07.13.2020 10:45

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-2**  
 Lab Sample Id: 667044-002

Matrix: Soil  
 Date Collected: 07.13.2020 10:35

Date Received: 07.13.2020 16:43

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	3570	24.9	mg/kg	07.16.2020 16:32		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.16.2020 12:00

Basis: Wet Weight

Seq Number: 3131955

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-2**  
 Lab Sample Id: 667044-002

Matrix: Soil  
 Date Collected: 07.13.2020 10:35

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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	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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: C-3  
Lab Sample Id: 667044-003

Matrix: Soil  
Date Collected: 07.13.2020 10:30

Date Received: 07.13.2020 16:43

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	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

Date Prep: 07.15.2020 08:30

Basis: Wet Weight

Seq Number: 3131823

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



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-3**  
 Lab Sample Id: 667044-003

Matrix: Soil  
 Date Collected: 07.13.2020 10:30

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **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: 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	3060	25.2	mg/kg	07.16.2020 16:57		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight  
 Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-4**  
 Lab Sample Id: 667044-004

Matrix: Soil  
 Date Collected: 07.13.2020 10:27

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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
<b>Toluene</b>	108-88-3	<b>0.00262</b>	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
<b>Total BTEX</b>		<b>0.00262</b>	0.00199	mg/kg	07.18.2020 03:56		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 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	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  
 Seq Number: 3131823

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.15.2020 14:17	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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-5**  
 Lab Sample Id: 667044-005

Matrix: Soil  
 Date Collected: 07.13.2020 10:23

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.18.2020 04:17	U	1
<b>Toluene</b>	108-88-3	<b>0.00205</b>	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
<b>Total BTEX</b>		<b>0.00205</b>	0.00200	mg/kg	07.18.2020 04:17		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 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	1060	4.99	mg/kg	07.16.2020 17:09		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  
 Seq Number: 3131823

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	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-6**  
 Lab Sample Id: 667044-006

Matrix: Soil  
 Date Collected: 07.13.2020 10:20

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.18.2020 04:37	U	1
<b>Toluene</b>	108-88-3	<b>0.00262</b>	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
<b>Total BTEX</b>		<b>0.00262</b>	0.00200	mg/kg	07.18.2020 04:37		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 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	12100	101	mg/kg	07.16.2020 17:15		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight  
 Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-7**  
 Lab Sample Id: 667044-007

Matrix: Soil  
 Date Collected: 07.13.2020 10:15

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.18.2020 04:57	U	1
<b>Toluene</b>	108-88-3	<b>0.00378</b>	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
<b>Total BTEX</b>		<b>0.00378</b>	0.00200	mg/kg	07.18.2020 04:57		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

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

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	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-8**  
 Lab Sample Id: 667044-008

Matrix: Soil  
 Date Collected: 07.13.2020 10:10

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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	<b>4160</b>	25.0	mg/kg	07.16.2020 17:27		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight  
 Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-9**  
 Lab Sample Id: 667044-009

Matrix: Soil  
 Date Collected: 07.13.2020 10:05

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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
<b>Toluene</b>	108-88-3	<b>0.00438</b>	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
<b>Total BTEX</b>		<b>0.00438</b>	0.00199	mg/kg	07.18.2020 05:38		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-10** Matrix: Soil Date Received: 07.13.2020 16:43  
 Lab Sample Id: 667044-010 Date Collected: 07.13.2020 10:00  
 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	2190	24.9	mg/kg	07.21.2020 01:05		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 07.15.2020 08:30 Basis: Wet Weight  
 Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-10**  
 Lab Sample Id: 667044-010

Matrix: Soil  
 Date Collected: 07.13.2020 10:00

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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
<b>Toluene</b>	108-88-3	<b>0.00336</b>	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
<b>Total BTEX</b>		<b>0.00336</b>	0.00201	mg/kg	07.18.2020 05:59		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-11**  
 Lab Sample Id: 667044-011

Matrix: Soil  
 Date Collected: 07.13.2020 09:58

Date Received: 07.13.2020 16:43

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	44.8	5.01	mg/kg	07.21.2020 01:26		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

Seq Number: 3131823

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	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-11**  
 Lab Sample Id: 667044-011

Matrix: Soil  
 Date Collected: 07.13.2020 09:58

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.18.2020 11:01	U	1
<b>Toluene</b>	108-88-3	<b>0.00539</b>	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
<b>Total BTEX</b>		<b>0.00539</b>	0.00200	mg/kg	07.18.2020 11:01		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.18.2020 11:01		
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.18.2020 11:01		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-12**  
 Lab Sample Id: 667044-012

Matrix: Soil  
 Date Collected: 07.13.2020 09:55

Date Received: 07.13.2020 16:43

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	626	5.03	mg/kg	07.21.2020 01:32		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

Seq Number: 3131823

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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-12**  
 Lab Sample Id: 667044-012

Matrix: Soil  
 Date Collected: 07.13.2020 09:55

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

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
<b>Toluene</b>	108-88-3	<b>0.00415</b>	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
<b>Total BTEX</b>		<b>0.00415</b>	0.00198	mg/kg	07.18.2020 11:22		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-13**  
 Lab Sample Id: 667044-013

Matrix: Soil  
 Date Collected: 07.13.2020 09:51

Date Received: 07.13.2020 16:43

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	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

Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-13**  
 Lab Sample Id: 667044-013

Matrix: Soil  
 Date Collected: 07.13.2020 09:51

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.17.2020 14:30

Basis: Wet Weight

Seq Number: 3132080

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.18.2020 11:42	U	1
<b>Toluene</b>	108-88-3	<b>0.00252</b>	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
<b>Total BTEX</b>		<b>0.00252</b>	0.00198	mg/kg	07.18.2020 11:42		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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	**	



# Certificate of Analytical Results 667044

## 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  
 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	14.1	4.97	mg/kg	07.21.2020 01:53		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  
 Seq Number: 3131823

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-14**  
 Lab Sample Id: 667044-014

Matrix: Soil  
 Date Collected: 07.13.2020 09:48

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 03:09	U	1
<b>Toluene</b>	108-88-3	<b>0.00570</b>	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
<b>Total BTEX</b>		<b>0.00570</b>	0.00200	mg/kg	07.22.2020 03:09		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-15**  
 Lab Sample Id: 667044-015

Matrix: Soil  
 Date Collected: 07.13.2020 09:45

Date Received: 07.13.2020 16:43

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

Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-15**  
 Lab Sample Id: 667044-015

Matrix: Soil  
 Date Collected: 07.13.2020 09:45

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 03:29	U	1
<b>Toluene</b>	108-88-3	<b>0.00254</b>	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
<b>Total BTEX</b>		<b>0.00254</b>	0.00200	mg/kg	07.22.2020 03:29		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-16**  
 Lab Sample Id: 667044-016

Matrix: Soil  
 Date Collected: 07.13.2020 09:48

Date Received: 07.13.2020 16:43

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	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

Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-16**  
 Lab Sample Id: 667044-016

Matrix: Soil  
 Date Collected: 07.13.2020 09:48

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

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
<b>Toluene</b>	108-88-3	<b>0.00552</b>	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
<b>Total BTEX</b>		<b>0.00552</b>	0.00200	mg/kg	07.22.2020 03:50		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	130	%	70-130	07.22.2020 03:50		
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.22.2020 03:50		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-17**  
 Lab Sample Id: 667044-017

Matrix: Soil  
 Date Collected: 07.13.2020 09:52

Date Received: 07.13.2020 16:43

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	927	5.03	mg/kg	07.21.2020 02:08		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

Seq Number: 3131823

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-17**  
 Lab Sample Id: 667044-017

Matrix: Soil  
 Date Collected: 07.13.2020 09:52

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 04:10	U	1
<b>Toluene</b>	108-88-3	<b>0.00275</b>	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
<b>Total BTEX</b>		<b>0.00275</b>	0.00200	mg/kg	07.22.2020 04:10		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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	**	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-18**  
 Lab Sample Id: 667044-018

Matrix: Soil  
 Date Collected: 07.13.2020 09:56

Date Received: 07.13.2020 16:43

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	227	5.00	mg/kg	07.21.2020 02:13		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

Seq Number: 3131823

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.15.2020 19:22	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	
o-Terphenyl	84-15-1	93	%	70-130	07.15.2020 19:22	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-18**  
 Lab Sample Id: 667044-018

Matrix: Soil  
 Date Collected: 07.13.2020 09:56

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 04:30	U	1
<b>Toluene</b>	108-88-3	<b>0.00722</b>	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
<b>Total BTEX</b>		<b>0.00722</b>	0.00200	mg/kg	07.22.2020 04:30		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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	**	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-19**  
Lab Sample Id: 667044-019

Matrix: Soil  
Date Collected: 07.13.2020 10:10

Date Received: 07.13.2020 16:43

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	60.6	4.98	mg/kg	07.21.2020 02:19		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

Seq Number: 3131823

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-19**  
 Lab Sample Id: 667044-019

Matrix: Soil  
 Date Collected: 07.13.2020 10:10

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.22.2020 08:00

Basis: Wet Weight

Seq Number: 3132394

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.22.2020 09:17	U	1
<b>Toluene</b>	108-88-3	<b>0.00557</b>	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
<b>Total BTEX</b>		<b>0.00557</b>	0.00199	mg/kg	07.22.2020 09:17		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	131	%	70-130	07.22.2020 09:17	**	
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.22.2020 09:17		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-20**  
 Lab Sample Id: 667044-020

Matrix: Soil  
 Date Collected: 07.13.2020 10:04

Date Received: 07.13.2020 16:43

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	44.3	5.03	mg/kg	07.21.2020 02:34		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

Seq Number: 3131823

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-20**  
 Lab Sample Id: 667044-020

Matrix: Soil  
 Date Collected: 07.13.2020 10:04

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 04:51	U	1
<b>Toluene</b>	108-88-3	<b>0.00968</b>	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
<b>Total BTEX</b>		<b>0.00968</b>	0.00200	mg/kg	07.22.2020 04:51		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.22.2020 04:51		
4-Bromofluorobenzene	460-00-4	136	%	70-130	07.22.2020 04:51	**	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-21**  
 Lab Sample Id: 667044-021

Matrix: Soil  
 Date Collected: 07.13.2020 10:08

Date Received: 07.13.2020 16:43

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	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

Date Prep: 07.15.2020 08:30

Basis: Wet Weight

Seq Number: 3131823

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



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-21**  
 Lab Sample Id: 667044-021

Matrix: Soil  
 Date Collected: 07.13.2020 10:08

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 05:11	U	1
<b>Toluene</b>	108-88-3	<b>0.00705</b>	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
<b>Total BTEX</b>		<b>0.00705</b>	0.00200	mg/kg	07.22.2020 05:11		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-22**  
 Lab Sample Id: 667044-022

Matrix: Soil  
 Date Collected: 07.13.2020 10:12

Date Received: 07.13.2020 16:43

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	<b>704</b>	4.99	mg/kg	07.21.2020 02:55		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

Seq Number: 3131823

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	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-22**  
 Lab Sample Id: 667044-022

Matrix: Soil  
 Date Collected: 07.13.2020 10:12

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 05:32	U	1
<b>Toluene</b>	108-88-3	<b>0.00493</b>	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
<b>Total BTEX</b>		<b>0.00493</b>	0.00200	mg/kg	07.22.2020 05:32		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	137	%	70-130	07.22.2020 05:32	**	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.22.2020 05:32		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-23**  
 Lab Sample Id: 667044-023

Matrix: Soil  
 Date Collected: 07.13.2020 10:18

Date Received: 07.13.2020 16:43

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	6200	49.5	mg/kg	07.21.2020 03:00		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: 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 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	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-23**  
 Lab Sample Id: 667044-023

Matrix: Soil  
 Date Collected: 07.13.2020 10:18

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 05:52	U	1
<b>Toluene</b>	108-88-3	<b>0.00339</b>	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
<b>Total BTEX</b>		<b>0.00339</b>	0.00200	mg/kg	07.22.2020 05:52		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	134	%	70-130	07.22.2020 05:52	**	
1,4-Difluorobenzene	540-36-3	103	%	70-130	07.22.2020 05:52		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-24**  
 Lab Sample Id: 667044-024

Matrix: Soil  
 Date Collected: 07.13.2020 10:22

Date Received: 07.13.2020 16:43

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	1110	4.97	mg/kg	07.21.2020 03:06		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

Seq Number: 3131827

Parameter	Cas Number	Result	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
1-Chlorooctane	111-85-3	81	%	70-130	07.15.2020 13:55	
o-Terphenyl	84-15-1	85	%	70-130	07.15.2020 13:55	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-24**  
 Lab Sample Id: 667044-024

Matrix: Soil  
 Date Collected: 07.13.2020 10:22

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.21.2020 16:00

Basis: Wet Weight

Seq Number: 3132276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.22.2020 06:13	U	1
<b>Toluene</b>	108-88-3	<b>0.00732</b>	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
<b>Total BTEX</b>		<b>0.00732</b>	0.00200	mg/kg	07.22.2020 06:13		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-25**  
 Lab Sample Id: 667044-025

Matrix: Soil  
 Date Collected: 07.13.2020 10:26

Date Received: 07.13.2020 16:43

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	254	5.02	mg/kg	07.21.2020 03:11		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

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 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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-25**  
 Lab Sample Id: 667044-025

Matrix: Soil  
 Date Collected: 07.13.2020 10:26

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00201	0.00201	mg/kg	07.22.2020 21:47	U	1
<b>Toluene</b>	108-88-3	<b>0.00464</b>	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
<b>Total BTEX</b>		<b>0.00464</b>	0.00201	mg/kg	07.22.2020 21:47		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-26**  
 Lab Sample Id: 667044-026

Matrix: Soil  
 Date Collected: 07.13.2020 10:32

Date Received: 07.13.2020 16:43

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	5280	25.0	mg/kg	07.21.2020 03:16		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: 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	<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	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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-26**  
 Lab Sample Id: 667044-026

Matrix: Soil  
 Date Collected: 07.13.2020 10:32

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	07.22.2020 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
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-27** Matrix: Soil 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 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	1210	4.99	mg/kg	07.21.2020 03:21		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  
 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 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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-27**  
 Lab Sample Id: 667044-027

Matrix: Soil  
 Date Collected: 07.13.2020 10:36

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	07.22.2020 22:28	U	1
<b>Toluene</b>	108-88-3	<b>0.00482</b>	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
<b>Total BTEX</b>		<b>0.00482</b>	0.00200	mg/kg	07.22.2020 22:28		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.22.2020 22:28		
1,4-Difluorobenzene	540-36-3	111	%	70-130	07.22.2020 22:28		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-28** Matrix: Soil Date Received: 07.13.2020 16:43  
 Lab Sample Id: 667044-028 Date Collected: 07.13.2020 10:40  
 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	8280	49.7	mg/kg	07.21.2020 03:27		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: 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	<49.8	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
1-Chlorooctane	111-85-3	91	%	70-130	07.15.2020 15:22	
o-Terphenyl	84-15-1	94	%	70-130	07.15.2020 15:22	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-28**  
 Lab Sample Id: 667044-028

Matrix: Soil  
 Date Collected: 07.13.2020 10:40

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	07.22.2020 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
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-29**  
 Lab Sample Id: 667044-029

Matrix: Soil  
 Date Collected: 07.13.2020 10:44

Date Received: 07.13.2020 16:43

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

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	197	5.03	mg/kg	07.16.2020 18:23		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

Seq Number: 3131827

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-29**  
 Lab Sample Id: 667044-029

Matrix: Soil  
 Date Collected: 07.13.2020 10:44

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00199	0.00199	mg/kg	07.22.2020 23:09	U	1
<b>Toluene</b>	108-88-3	<b>0.00906</b>	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
<b>Total BTEX</b>		<b>0.00906</b>	0.00199	mg/kg	07.22.2020 23:09		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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	264	4.96	mg/kg	07.16.2020 18:04	X	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  
 Seq Number: 3131827

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.15.2020 16:06	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	
o-Terphenyl	84-15-1	84	%	70-130	07.15.2020 16:06	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-30**  
 Lab Sample Id: 667044-030

Matrix: Soil  
 Date Collected: 07.13.2020 10:48

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00198	0.00198	mg/kg	07.22.2020 23:30	U	1
<b>Toluene</b>	108-88-3	<b>0.00556</b>	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
<b>Total BTEX</b>		<b>0.00556</b>	0.00198	mg/kg	07.22.2020 23:30		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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	42.1	4.99	mg/kg	07.16.2020 18:29		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  
 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 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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-31**  
 Lab Sample Id: 667044-031

Matrix: Soil  
 Date Collected: 07.13.2020 10:52

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	07.22.2020 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
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-32**  
 Lab Sample Id: 667044-032

Matrix: Soil  
 Date Collected: 07.13.2020 10:56

Date Received: 07.13.2020 16:43

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

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	867	4.97	mg/kg	07.16.2020 18:35		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

Seq Number: 3131827

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	89	%	70-130	07.15.2020 16:49	
o-Terphenyl	84-15-1	86	%	70-130	07.15.2020 16:49	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-32**  
 Lab Sample Id: 667044-032

Matrix: Soil  
 Date Collected: 07.13.2020 10:56

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00199	0.00199	mg/kg	07.23.2020 00:11	U	1
<b>Toluene</b>	108-88-3	<b>0.00325</b>	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
<b>Total BTEX</b>		<b>0.00325</b>	0.00199	mg/kg	07.23.2020 00:11		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		





# Certificate of Analytical Results 667044

## 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  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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	553	4.99	mg/kg	07.16.2020 18:41		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  
 Seq Number: 3131827

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-33**  
 Lab Sample Id: 667044-033

Matrix: Soil  
 Date Collected: 07.13.2020 11:00

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00199	0.00199	mg/kg	07.23.2020 00:31	U	1
<b>Toluene</b>	108-88-3	<b>0.00712</b>	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
<b>Total BTEX</b>		<b>0.00712</b>	0.00199	mg/kg	07.23.2020 00:31		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-34**  
 Lab Sample Id: 667044-034

Matrix: Soil  
 Date Collected: 07.13.2020 11:05

Date Received: 07.13.2020 16:43

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

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	242	5.00	mg/kg	07.16.2020 18:59		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

Seq Number: 3131827

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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-34**  
 Lab Sample Id: 667044-034

Matrix: Soil  
 Date Collected: 07.13.2020 11:05

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00199	0.00199	mg/kg	07.23.2020 00:52	U	1
<b>Toluene</b>	108-88-3	<b>0.00781</b>	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
<b>Total BTEX</b>		<b>0.00781</b>	0.00199	mg/kg	07.23.2020 00:52		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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  
 Tech: DVM % Moisture:  
 Analyst: 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	<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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-35**  
 Lab Sample Id: 667044-035

Matrix: Soil  
 Date Collected: 07.13.2020 11:01

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00198	0.00198	mg/kg	07.23.2020 02:14	U	1
<b>Toluene</b>	108-88-3	<b>0.00876</b>	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
<b>Total BTEX</b>		<b>0.00876</b>	0.00198	mg/kg	07.23.2020 02:14		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-36**  
 Lab Sample Id: 667044-036

Matrix: Soil  
 Date Collected: 07.13.2020 10:52

Date Received: 07.13.2020 16:43

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

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	<b>64.4</b>	5.05	mg/kg	07.16.2020 19:12		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

Seq Number: 3131827

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
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	





# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-36**  
 Lab Sample Id: 667044-036

Matrix: Soil  
 Date Collected: 07.13.2020 10:52

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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
<b>Toluene</b>	108-88-3	<b>0.00478</b>	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
<b>Total BTEX</b>		<b>0.00478</b>	0.00200	mg/kg	07.23.2020 02:34		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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	14.6	4.99	mg/kg	07.16.2020 19:30	X	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  
 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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-37**  
 Lab Sample Id: 667044-037

Matrix: Soil  
 Date Collected: 07.13.2020 10:52

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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 02:55	U	1
<b>Toluene</b>	108-88-3	<b>0.00502</b>	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
<b>Total BTEX</b>		<b>0.00502</b>	0.00200	mg/kg	07.23.2020 02:55		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
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		



# Certificate of Analytical Results 667044

## 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  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 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	28.7	5.04	mg/kg	07.16.2020 19:49		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  
 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
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	



# Certificate of Analytical Results 667044

## Larson and Associates, Inc., Midland, TX

EBDU #37

Sample Id: **C-38**  
 Lab Sample Id: 667044-038

Matrix: Soil  
 Date Collected: 07.13.2020 10:48

Date Received: 07.13.2020 16:43

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

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	<0.00199	0.00199	mg/kg	07.23.2020 03:15	U	1
<b>Toluene</b>	108-88-3	<b>0.00857</b>	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
<b>Total BTEX</b>		<b>0.00857</b>	0.00199	mg/kg	07.23.2020 03:15		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.23.2020 03:15		
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.23.2020 03:15		



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.      **ND** Not Detected.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample      **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate      **MS** Matrix Spike      **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



## Larson and Associates, Inc.

EBDU #37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3131895

MB Sample Id: 7707476-1-BLK

Matrix: Solid

LCS Sample Id: 7707476-1-BKS

Prep Method: E300P

Date Prep: 07.16.2020

LCSD Sample Id: 7707476-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	260	104	261	104	90-110	0	20	mg/kg	07.16.2020 14:29	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3131896

MB Sample Id: 7707518-1-BLK

Matrix: Solid

LCS Sample Id: 7707518-1-BKS

Prep Method: E300P

Date Prep: 07.16.2020

LCSD Sample Id: 7707518-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	263	105	263	105	90-110	0	20	mg/kg	07.16.2020 17:52	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132156

MB Sample Id: 7707611-1-BLK

Matrix: Solid

LCS Sample Id: 7707611-1-BKS

Prep Method: E300P

Date Prep: 07.20.2020

LCSD Sample Id: 7707611-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	232	93	238	95	90-110	3	20	mg/kg	07.21.2020 00:55	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3131895

Parent Sample Id: 667048-075

Matrix: Soil

MS Sample Id: 667048-075 S

Prep Method: E300P

Date Prep: 07.16.2020

MSD Sample Id: 667048-075 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	73.9	249	364	117	345	109	90-110	5	20	mg/kg	07.16.2020 14:47	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3131895

Parent Sample Id: 667048-085

Matrix: Soil

MS Sample Id: 667048-085 S

Prep Method: E300P

Date Prep: 07.16.2020

MSD Sample Id: 667048-085 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	424	250	703	112	702	111	90-110	0	20	mg/kg	07.16.2020 16:14	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3131896

Parent Sample Id: 667044-030

Matrix: Soil

MS Sample Id: 667044-030 S

Prep Method: E300P

Date Prep: 07.16.2020

MSD Sample Id: 667044-030 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	264	248	544	113	524	105	90-110	4	20	mg/kg	07.16.2020 18:10	X

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

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## Larson and Associates, Inc.

EBDU #37

## Analytical Method: Chloride by EPA 300

Seq Number: 3131896

Parent Sample Id: 667044-037

Matrix: Soil

MS Sample Id: 667044-037 S

Prep Method: E300P

Date Prep: 07.16.2020

MSD Sample Id: 667044-037 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	14.6	250	292	111	281	107	90-110	4	20	mg/kg	07.16.2020 19:36	X

## Analytical Method: Chloride by EPA 300

Seq Number: 3132156

Parent Sample Id: 667044-010

Matrix: Soil

MS Sample Id: 667044-010 S

Prep Method: E300P

Date Prep: 07.20.2020

MSD Sample Id: 667044-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2190	1240	3340	93	3510	106	90-110	5	20	mg/kg	07.21.2020 01:11	

## Analytical Method: Chloride by EPA 300

Seq Number: 3132156

Parent Sample Id: 667044-019

Matrix: Soil

MS Sample Id: 667044-019 S

Prep Method: E300P

Date Prep: 07.20.2020

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	Flag
Chloride	60.6	249	295	94	315	102	90-110	7	20	mg/kg	07.21.2020 02:24	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131823

MB Sample Id: 7707429-1-BLK

Matrix: Solid

LCS Sample Id: 7707429-1-BKS

Prep Method: SW8015P

Date Prep: 07.15.2020

LCSD Sample Id: 7707429-1-BSD

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	1100	110	1100	110	70-130	0	20	mg/kg	07.15.2020 12:07	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1110	111	70-130	2	20	mg/kg	07.15.2020 12:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		106		109		70-130	%	07.15.2020 12:07
o-Terphenyl	113		111		113		70-130	%	07.15.2020 12:07

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131827

MB Sample Id: 7707430-1-BLK

Matrix: Solid

LCS Sample Id: 7707430-1-BKS

Prep Method: SW8015P

Date Prep: 07.15.2020

LCSD Sample Id: 7707430-1-BSD

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	958	96	888	89	70-130	8	20	mg/kg	07.15.2020 12:07	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	904	90	70-130	11	20	mg/kg	07.15.2020 12:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	87		97		89		70-130	%	07.15.2020 12:07
o-Terphenyl	96		105		95		70-130	%	07.15.2020 12:07

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

[D] = 100\*(C-A) / B  
RPD = 200\* | (C-E) / (C+E) |  
[D] = 100 \* (C) / [B]  
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result

MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec

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## Larson and Associates, Inc.

EBDU #37

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131955

MB Sample Id: 7707520-1-BLK

Matrix: Solid

LCS Sample Id: 7707520-1-BKS

Prep Method: SW8015P

Date Prep: 07.16.2020

LCSD Sample Id: 7707520-1-BSD

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 %Rec	LCS Flag		LCSD %Rec	LCSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane	102		99			102		70-130		%	07.16.2020 11:54	
o-Terphenyl	111		100			105		70-130		%	07.16.2020 11:54	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131823

Matrix: Solid

MB Sample Id: 7707429-1-BLK

Prep Method: SW8015P

Date Prep: 07.15.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.15.2020 11:46	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131827

Matrix: Solid

MB Sample Id: 7707430-1-BLK

Prep Method: SW8015P

Date Prep: 07.15.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.15.2020 11:46	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131955

Matrix: Solid

MB Sample Id: 7707520-1-BLK

Prep Method: SW8015P

Date Prep: 07.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.16.2020 11:33	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3131823

Matrix: Soil

Parent Sample Id: 667044-003

MS Sample Id: 667044-003 S

Prep Method: SW8015P

Date Prep: 07.15.2020

MSD Sample Id: 667044-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
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	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0179

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**Larson and Associates, Inc.**  
EBDU #37

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3131827

Parent Sample Id: 667044-023

Matrix: Soil

MS Sample Id: 667044-023 S

Prep Method: SW8015P

Date Prep: 07.15.2020

MSD Sample Id: 667044-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	911	91	884	89	70-130	3	20	mg/kg	07.15.2020 13:12	
Diesel Range Organics (DRO)	<49.9	997	948	95	943	95	70-130	1	20	mg/kg	07.15.2020 13:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		91		70-130	%	07.15.2020 13:12
o-Terphenyl	95		91		70-130	%	07.15.2020 13:12

**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

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	959	96	949	95	70-130	1	20	mg/kg	07.16.2020 13:00	
Diesel Range Organics (DRO)	<49.9	997	1050	105	1040	104	70-130	1	20	mg/kg	07.16.2020 13:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		104		70-130	%	07.16.2020 13:00
o-Terphenyl	103		101		70-130	%	07.16.2020 13:00

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3132080

MB Sample Id: 7707661-1-BLK

Matrix: Solid

LCS Sample Id: 7707661-1-BKS

Prep Method: SW5035A

Date Prep: 07.17.2020

LCSD Sample Id: 7707661-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0911	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	07.18.2020 10:00	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.167	84	70-130	15	35	mg/kg	07.18.2020 10:00	
o-Xylene	<0.00200	0.100	0.0984	98	0.0852	85	70-130	14	35	mg/kg	07.18.2020 10:00	

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

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

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## Larson and Associates, Inc.

EBDU #37

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3132276

Matrix: Solid

Prep Method: SW5035A

Date Prep: 07.21.2020

MB Sample Id: 7707803-1-BLK

LCS Sample Id: 7707803-1-BKS

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	Flag
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 %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		97		95		70-130	%	07.21.2020 20:39
4-Bromofluorobenzene	109		95		102		70-130	%	07.21.2020 20:39

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3132394

Matrix: Solid

Prep Method: SW5035A

Date Prep: 07.22.2020

MB Sample Id: 7707874-1-BLK

LCS Sample Id: 7707874-1-BKS

LCSD Sample Id: 7707874-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0974	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

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3132400

Matrix: Solid

Prep Method: SW5035A

Date Prep: 07.22.2020

MB Sample Id: 7707878-1-BLK

LCS Sample Id: 7707878-1-BKS

LCSD Sample Id: 7707878-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.119	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

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

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## Larson and Associates, Inc.

EBDU #37

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3132080

Matrix: Soil

Prep Method: SW5035A

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

Seq Number: 3132276

Matrix: Soil

Prep Method: SW5035A

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	Flag
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

Seq Number: 3132394

Matrix: Soil

Prep Method: SW5035A

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	Flag
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

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

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## Larson and Associates, Inc.

EBDU #37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132400

Parent Sample Id: 667044-031

Matrix: Soil

MS Sample Id: 667044-031 S

Prep Method: SW5035A

Date Prep: 07.22.2020

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

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

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec



NO 1196

CHAIN-OF-CUSTODY

1007044



**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 7/13/20 PAGE 2 OF 3  
PO#: \_\_\_\_\_ LAB WORK ORDER#: \_\_\_\_\_  
PROJECT LOCATION OR NAME: EB00 #32  
LAI PROJECT #: 19-0112-41 COLLECTOR: TJ+DS

TRRP report? ☐ Yes ☒ No  
TIME ZONE: \_\_\_\_\_  
Time zone/State: \_\_\_\_\_

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	PREPARATION
C-16		7/13/20	1418	S	1						
C-17			152								
C-18			156								
C-19			1010								
C-20			1004								
C-21			1008								
C-22			1012								
C-23			1018								
C-24			1022								
C-25			1026								
C-26			1032								
C-27			1036								
C-28			1040								
C-29			1044								
C-30			1048								
TOTAL	15										

**ANALYSES**  
BTEX ☒ MTBE ☐  
TPH 418.1 ☐ TPH 1005 ☒ TPH 1008 ☐  
GASOLINE MOD 8015 ☒  
DIESEL - MOD 8015 ☒  
OIL - MOD 8015 ☒  
VOC 8260 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
TBLP - METALS (RCRA) ☐ TCLP VOC ☐  
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ OTHER LIST ☐  
LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐  
RCI ☐ TOX ☐ FLASHPOINT ☐  
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐  
PH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PECHLORATE ☐  
CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Bill Direct  
to Arnelio

OCD Ex. 5-0185

RELINQUISHED BY: (Signature) <u>Start gar</u>	DATE/TIME <u>7/13/20</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	DATE/TIME <u>1043</u>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
LABORATORY: <u>Xmld</u>	TURN AROUND TIME NORMAL <input checked="" type="checkbox"/> 1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/>		
LABORATORY USE ONLY: RECEIVING TEMP: <u>53/19</u> THERM#: <u>12.8</u> CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input checked="" type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____ <input type="checkbox"/> HAND DELIVERED			

007044

CHAIN-OF-CUSTODY

No 1197

NO 7044

CHAIN-OF-CUSTODY

NO 1198

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Larson and Associates, Inc.**Date/ Time Received:** 07.13.2020 04.43.00 PM**Work Order #:** 667044**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	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 labels/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

**\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

**Analyst:****PH Device/Lot#:****Checklist completed by:**

Brianna Teel

Date: 07.14.2020

**Checklist reviewed by:**

Holly Taylor

Date: 07.16.2020

## Certificate of Analysis Summary 668318



Larson and Associates, Inc., Midland, TX

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

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668318-001					
	<i>Field Id:</i>	C-2					
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL					
	<i>Sampled:</i>	07.27.2020 14:15					
Chloride by EPA 300	<i>Extracted:</i>	07.29.2020 08:40					
	<i>Analyzed:</i>	07.29.2020 09:58					
	<i>Units/RL:</i>	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,

A handwritten signature in black ink, appearing to read "JB", written over a light blue rectangular background.

---

**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 Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
C-2	S	07.27.2020 14:15		668318-001





## CASE NARRATIVE

***Client Name: Larson and Associates, Inc.***

***Project Name: EBDU #37***

Project ID: 19-0112-49  
Work Order Number(s): 668318

Report Date: 07.29.2020  
Date Received: 07.28.2020

---

**Sample receipt non conformances and comments:**

---

**Sample receipt non conformances and comments per sample:**

None

**Certificate of Analytical Results 668318****Larson and Associates, Inc., Midland, TX**

EBDU #37

Sample Id: **C-2**  
Lab Sample Id: 668318-001

Matrix: Soil  
Date Collected: 07.27.2020 14:15

Date Received: 07.28.2020 08:45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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



## Larson and Associates, Inc.

EBDU #37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132893

MB Sample Id: 7708262-1-BLK

Matrix: Solid

LCS Sample Id: 7708262-1-BKS

Prep Method: E300P

Date Prep: 07.29.2020

LCSD Sample Id: 7708262-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	236	94	236	94	90-110	0	20	mg/kg	07.29.2020 09:45	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132893

Parent Sample Id: 668222-009

Matrix: Soil

MS Sample Id: 668222-009 S

Prep Method: E300P

Date Prep: 07.29.2020

MSD Sample Id: 668222-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1000	253	1210	83	1210	83	90-110	0	20	mg/kg	07.29.2020 11:30	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132893

Parent Sample Id: 668318-001

Matrix: Soil

MS Sample Id: 668318-001 S

Prep Method: E300P

Date Prep: 07.29.2020

MSD Sample Id: 668318-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	86.5	252	334	98	330	97	90-110	1	20	mg/kg	07.29.2020 10:04	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0195

Page 8 of 10

Final 1.000

Environmental Consultants

432-687-0901

PAGE 1 OF 1

1572

OCD Ex. 5-0196

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Larson and Associates, Inc.**Date/ Time Received:** 07.28.2020 08.45.00 AM**Work Order #:** 668318**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	27.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	No
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

**\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

**Checklist completed by:**

Brianna Teel

Date: 07.28.2020

**Checklist reviewed by:**

Holly Taylor

Date: 07.28.2020

## Certificate of Analysis Summary 668607



Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49

Date Received in Lab: Thu 07.30.2020 09:20

Contact: Mark Larson

Report Date: 07.31.2020 13:12

Project Location: NM

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668607-001		668607-002		668607-003		668607-004		668607-005		668607-006	
	<i>Field Id:</i>	C-3		C-4		C-5		C-6		C-7		C-8	
	<i>Depth:</i>												
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	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	<i>Extracted:</i>	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	
	<i>Analyzed:</i>	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	
	<i>Units/RL:</i>	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	4.95	19.0	4.95

BRL - Below Reporting Limit

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



## Certificate of Analysis Summary 668607



Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49

Date Received in Lab: Thu 07.30.2020 09:20

Contact: Mark Larson

Report Date: 07.31.2020 13:12

Project Location: NM

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668607-007	668607-008	668607-009	668607-010	668607-011	668607-012
	<i>Field Id:</i>	C-9	C-10	C-26	C-27	C-28	C-12
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		200 5.04	126 5.01	307 4.96	71.6 4.99	630 5.00	17.6 5.03

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 668607



Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49

Date Received in Lab: Thu 07.30.2020 09:20

Contact: Mark Larson

Report Date: 07.31.2020 13:12

Project Location: NM

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668607-013	668607-014	668607-015	668607-016	668607-017	668607-018
	<i>Field Id:</i>	C-17	C-32	C-21	C-22	C-23	C-24
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.78 4.96	30.8 4.98	237 5.00	608 5.04	13900 99.2	37.4 4.98

BRL - Below Reporting Limit

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

# 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,

A handwritten signature in black ink that reads "Holly Taylor".

---

**Holly Taylor**  
Project Manager

*A Small Business and Minority Company*

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

**Sample Cross Reference 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



## CASE NARRATIVE

**Client Name:** *Larson and Associates, Inc.*

**Project Name:** *EBDU 37*

Project ID: 19-0112-49  
Work Order Number(s): 668607

Report Date: 07.31.2020  
Date Received: 07.30.2020

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### Sample receipt non conformances and comments:

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### 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.

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-3**  
Lab Sample Id: 668607-001

Matrix: Soil  
Date Collected: 07.29.2020 09:34

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	39.0	5.02	mg/kg	07.30.2020 12:39	X	1



**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-4**  
Lab Sample Id: 668607-002

Matrix: Soil  
Date Collected: 07.29.2020 09:42

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-5** Matrix: Soil Date Received: 07.30.2020 09:20  
Lab Sample Id: 668607-003 Date Collected: 07.29.2020 09:47  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE % Moisture:  
Analyst: 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	5.75	4.97	mg/kg	07.30.2020 13:03		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-6** Matrix: Soil Date Received: 07.30.2020 09:20  
Lab Sample Id: 668607-004 Date Collected: 07.29.2020 09:51  
Analytical Method: Chloride by EPA 300 Prep Method: E300P  
Tech: CHE % Moisture:  
Analyst: 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	162	5.04	mg/kg	07.30.2020 13:10		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-7**  
Lab Sample Id: 668607-005

Matrix: Soil  
Date Collected: 07.29.2020 09:56

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	11.5	4.95	mg/kg	07.30.2020 13:16		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-8**  
Lab Sample Id: 668607-006

Matrix: Soil  
Date Collected: 07.29.2020 16:35

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	19.0	4.95	mg/kg	07.30.2020 13:34		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-9**  
Lab Sample Id: 668607-007

Matrix: Soil  
Date Collected: 07.29.2020 16:32

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	200	5.04	mg/kg	07.30.2020 13:40		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-10**  
Lab Sample Id: 668607-008

Matrix: Soil  
Date Collected: 07.29.2020 16:30

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	126	5.01	mg/kg	07.30.2020 13:46		1



**Certificate of Analytical Results 668607****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

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	307	4.96	mg/kg	07.30.2020 13:53		1

**Certificate of Analytical Results 668607****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

Tech: CHE

% Moisture:

Analyst: 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	71.6	4.99	mg/kg	07.30.2020 13:59		1

**Certificate of Analytical Results 668607****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

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	630	5.00	mg/kg	07.30.2020 14:05		1

**Certificate of Analytical Results 668607****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

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	17.6	5.03	mg/kg	07.30.2020 14:23		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

Date Collected: 07.29.2020 14:15

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	9.78	4.96	mg/kg	07.30.2020 14:29		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-32**  
Lab Sample Id: 668607-014

Matrix: Soil  
Date Collected: 07.29.2020 14:00

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	30.8	4.98	mg/kg	07.30.2020 14:48		1

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-21**

Matrix: Soil

Date Received: 07.30.2020 09:20

Lab Sample Id: 668607-015

Date Collected: 07.29.2020 15:23

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	237	5.00	mg/kg	07.30.2020 14:54		1



**Certificate of Analytical Results 668607****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

Tech: CHE

% Moisture:

Analyst: 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	608	5.04	mg/kg	07.30.2020 15:00		1



## 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

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	13900	99.2	mg/kg	07.30.2020 15:06		20

**Certificate of Analytical Results 668607****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **C-24**  
Lab Sample Id: 668607-018

Matrix: Soil  
Date Collected: 07.29.2020 16:00

Date Received: 07.30.2020 09:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: 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	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



**Larson and Associates, Inc.**  
EBDU 37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133114

MB Sample Id: 7708388-1-BLK

Matrix: Solid

LCS Sample Id: 7708388-1-BKS

Prep Method: E300P

Date Prep: 07.30.2020

LCSD Sample Id: 7708388-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	247	99	90-110	0	20	mg/kg	07.30.2020 12:27	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133114

Parent Sample Id: 668607-001

Matrix: Soil

MS Sample Id: 668607-001 S

Prep Method: E300P

Date Prep: 07.30.2020

MSD Sample Id: 668607-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	39.0	251	319	112	315	110	90-110	1	20	mg/kg	07.30.2020 12:45	X

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133114

Parent Sample Id: 668607-011

Matrix: Soil

MS Sample Id: 668607-011 S

Prep Method: E300P

Date Prep: 07.30.2020

MSD Sample Id: 668607-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	630	250	879	100	876	98	90-110	0	20	mg/kg	07.30.2020 14:11	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0224

Page 27 of 30

Final 1.000

507 N. Mariefeld, Ste. 200  
Midland, TX 79701  
432-687-0901

DATE: 7/29/20 PAGE 1 OF 2  
PO#: \_\_\_\_\_ LAB WORK ORDER#: \_\_\_\_\_  
PROJECT LOCATION OR NAME: EBDC 37  
LAI PROJECT #: 19-0112-49 COLLECTOR: TS + DS

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

PRESERVATION			
--------------	--	--	--

UNP

**ANALYSES**

BTEX ☐ MTBE ☐ TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TBLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ D.W 200.8 ☐ TCLP ☐

RCI ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHOLATE ☐

CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NO.

## FIELD NOTES

OCD Ex. 5-0225

### Final 1,000

468607 No 1216  
CHAIN-OF-CUSTODY

**TURN AROUND TIME**  
 NORMAL ☐  
 1 DAY ☒  
 2 DAY ☐  
 OTHER ☐

**LABORATORY USE ONLY:**

RECEIVING TEMP: 80°

THERM#

12-8

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

 HAND DELIVERED

507 N. Marientfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

DATE: 7/29/20 PAGE 2 OF 2  
PO#: \_\_\_\_\_ LAB WORK ORDER#: \_\_\_\_\_  
PROJECT LOCATION OR NAME: FBDV 37  
LAI PROJECT #: 19-0112-49 COLLECTOR: TJ+DS

6666667 N<sup>o</sup> 1217

OCD Ex. 5-0226



# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 07.30.2020 09.20.00 AM

Work Order #: 668607

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : ir8

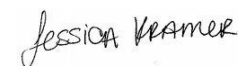
Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	25.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:



Jessica Kramer

Date: 07.30.2020

Checklist reviewed by:



Holly Taylor

Date: 07.30.2020

## Certificate of Analysis Summary 668986



Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.04.2020 08:30

Contact: Mark Larson

Report Date: 08.04.2020 15:48

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668986-001	668986-002	668986-003	668986-004	668986-005	668986-006
	<i>Field Id:</i>	BH-1 10'	BH-1 12'	BH-1 14'	BH-1 16'	BH-1 18'	BH-1 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.6 5.00	13.3 5.00	13.4 5.03	22.9 4.95	34.4 4.99	24.7 X 5.05

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 668986

Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49

Contact: Mark Larson

Project Location:

Date Received in Lab: Tue 08.04.2020 08:30

Report Date: 08.04.2020 15:48

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	668986-007	668986-008				
	<i>Field Id:</i>	BH-1 25'	BH-1 30'				
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	08.03.2020 13:30	08.03.2020 13:33				
Chloride by EPA 300	<i>Extracted:</i>	08.04.2020 10:45	08.04.2020 10:45				
	<i>Analyzed:</i>	08.04.2020 12:35	08.04.2020 12:40				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Chloride		31.0 5.00	31.5 5.04				

BRL - Below Reporting Limit

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



# 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,

A handwritten signature in black ink that reads "Jessica Kramer".

---

**Jessica Kramer**  
Project Manager

*A Small Business and Minority Company*

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

**Sample Cross Reference 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

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: EBDU 37**Project ID: 19-0112-49  
Work Order Number(s): 668986Report 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.



**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 10'**  
Lab Sample Id: 668986-001

Matrix: Soil  
Date Collected: 08.03.2020 11:40

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	11.6	5.00	mg/kg	08.04.2020 11:53		1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 12'**  
Lab Sample Id: 668986-002

Matrix: Soil  
Date Collected: 08.03.2020 11:42

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	13.3	5.00	mg/kg	08.04.2020 11:58		1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 14'**  
Lab Sample Id: 668986-003

Matrix: Soil  
Date Collected: 08.03.2020 11:53

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	13.4	5.03	mg/kg	08.04.2020 12:03		1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 16'**  
Lab Sample Id: 668986-004

Matrix: Soil  
Date Collected: 08.03.2020 11:55

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 18'**  
Lab Sample Id: 668986-005

Matrix: Soil  
Date Collected: 08.03.2020 11:57

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	34.4	4.99	mg/kg	08.04.2020 12:14		1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 20'**  
Lab Sample Id: 668986-006

Matrix: Soil  
Date Collected: 08.03.2020 12:24

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	24.7	5.05	mg/kg	08.04.2020 12:19	X	1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 25'**  
Lab Sample Id: 668986-007

Matrix: Soil  
Date Collected: 08.03.2020 13:30

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	31.0	5.00	mg/kg	08.04.2020 12:35		1

**Certificate of Analytical Results 668986****Larson and Associates, Inc., Midland, TX**

EBDU 37

Sample Id: **BH-1 30'**  
Lab Sample Id: 668986-008

Matrix: Soil  
Date Collected: 08.03.2020 13:33

Date Received: 08.04.2020 08:30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	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



**Larson and Associates, Inc.**  
EBDU 37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133486

MB Sample Id: 7708666-1-BLK

Matrix: Solid

LCS Sample Id: 7708666-1-BKS

Prep Method: E300P

Date Prep: 08.04.2020

LCSD Sample Id: 7708666-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	267	107	268	107	90-110	0	20	mg/kg	08.04.2020 10:55	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133486

Parent Sample Id: 668967-001

Matrix: Soil

MS Sample Id: 668967-001 S

Prep Method: E300P

Date Prep: 08.04.2020

MSD Sample Id: 668967-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	297	2510	3050	110	3040	109	90-110	0	20	mg/kg	08.04.2020 11:10	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133486

Parent Sample Id: 668986-006

Matrix: Soil

MS Sample Id: 668986-006 S

Prep Method: E300P

Date Prep: 08.04.2020

MSD Sample Id: 668986-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.7	253	312	114	312	114	90-110	0	20	mg/kg	08.04.2020 12:24	X

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0243

Page 16 of 18

Final 1.000

**Marson & Associates, Inc.**  
Environmental Consultants

507 N. Marrenfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

TRRP report?  
☐ Yes ☒ No  
S=SOIL W=WATER P=PAINT  
A=AIR SL=SLUDGE OT=OTHER

TIME ZONE:  
Time zone/State:

MST

Field  
Sample I.D.

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

## ANALYSES

BTEX ☐ MTBE ☐  
TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐  
GASOLINE MOD 8015 ☐  
DIESEL - MOD 8015 ☐  
OIL - MOD 8015 ☐  
VOC 8280 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
TBLP - METALS (RCRA) ☐ TCLP VOC ☐  
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ OTHER LIST ☐  
LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐  
RCI ☐ TOX ☐ FLASHPOINT ☐  
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐  
pH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PECHLORATE ☐  
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

DATE: 8/3/20

PO#:

PROJECT LOCATION OR NAME: E8DU 37

LAI PROJECT #: 14-0112-49

COLLECTOR: TS + DS

LAB WORK ORDER#:

PAGE 1 OF 21

CHAIN-OF-CUSTODY

No 1322

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
BH-1 10'		8-3-20	1140	S	1				X			
BH-1 12'			1142									
BH-1 14'			1153									
BH-1 16'			1155									
BH-1 18'			1157									
BH-1 20'			1224									
BH-1 25'			1330									
BH-1 30'			1333									
TOTAL 8												

RELINQUISHED BY: (Signature)

G. H. G. G.

DATE/TIME

8/4/20

RECEIVED BY: (Signature)

B. G. G.

DATE/TIME

8/4/20

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY: XENCO

TURN AROUND TIME

NORMAL ☐1 DAY ☒2 DAY ☐OTHER ☐

LABORATORY USE ONLY

RECEIVING TEMP: 20.0, THERM#: 7022

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Larson and Associates, Inc.**Date/ Time Received:** 08.04.2020 08.30.00 AM**Work Order #:** 668986**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

**\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

**Checklist completed by:**

Brianna Teel

Date: 08.04.2020

**Checklist reviewed by:**

Jessica Kramer

Date: 08.04.2020

## Certificate of Analysis Summary 669190



Larson and Associates, Inc., Midland, TX

Project Name: Apache -EBDu #37

Project Id: 19-0112-49

Date Received in Lab: Wed 08.05.2020 10:28

Contact: Mark Larson

Report Date: 08.06.2020 16:24

Project Location:

Project Manager: Holly Taylor

<b>Analysis Requested</b>	<b>Lab Id:</b>	669190-001	669190-002	669190-003	669190-004		
	<b>Field Id:</b>	C-28	C-22	C-23	C-1		
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL		
	<b>Sampled:</b>	08.04.2020 12:54	08.04.2020 14:04	08.04.2020 14:12	08.04.2020 17:28		
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	08.05.2020 11:26	08.05.2020 11:26	08.05.2020 11:26	08.05.2020 11:26		
	<b>Analyzed:</b>	08.05.2020 12:29	08.05.2020 12:45	08.05.2020 12:51	08.05.2020 12:57		
	<b>Units/RL:</b>	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		
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>				08.06.2020 10:30		
	<b>Analyzed:</b>				08.06.2020 10:45		
	<b>Units/RL:</b>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<50.3 50.3		
Diesel Range Organics (DRO)					<50.3 50.3		
Motor Oil Range Hydrocarbons (MRO)					<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



# 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,

A handwritten signature in black ink that reads "Holly Taylor".

---

**Holly Taylor**  
Project Manager

*A Small Business and Minority Company*

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



## Sample Cross Reference 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

***Client Name: Larson and Associates, Inc.***

***Project Name: Apache -EBDu #37***

Project ID: 19-0112-49

Work Order Number(s): 669190

Report Date: 08.06.2020

Date Received: 08.05.2020

---

### **Sample receipt non conformances and comments:**

---

### **Sample receipt non conformances and comments per sample:**

None

**Certificate of Analytical Results 669190****Larson and Associates, Inc., Midland, TX**

Apache -EBDu #37

Sample Id: **C-28**

Matrix: Soil

Date Received: 08.05.2020 10:28

Lab Sample Id: 669190-001

Date Collected: 08.04.2020 12:54

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

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	415	9.98	mg/kg	08.05.2020 12:29		1

**Certificate of Analytical Results 669190****Larson and Associates, Inc., Midland, TX**

Apache -EBDu #37

Sample Id: **C-22**

Matrix: Soil

Date Received: 08.05.2020 10:28

Lab Sample Id: 669190-002

Date Collected: 08.04.2020 14:04

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

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

**Certificate of Analytical Results 669190****Larson and Associates, Inc., Midland, TX**

Apache -EBDu #37

Sample Id: **C-23**

Matrix: Soil

Date Received: 08.05.2020 10:28

Lab Sample Id: 669190-003

Date Collected: 08.04.2020 14:12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

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	15.8	10.1	mg/kg	08.05.2020 12:51		1



# Certificate of Analytical Results 669190

## 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  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: MAB % Moisture:  
 Analyst: MAB 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	338	10.1	mg/kg	08.05.2020 12:57		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DTH % Moisture:  
 Analyst: DTH Date Prep: 08.06.2020 10:30 Basis: Wet Weight  
 Seq Number: 3133751

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



**Larson and Associates, Inc.**  
Apache -EBDu #37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133628

MB Sample Id: 7708772-1-BLK

Matrix: Solid

LCS Sample Id: 7708772-1-BKS

Prep Method: E300P

Date Prep: 08.05.2020

LCSD Sample Id: 7708772-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	270	108	269	108	90-110	0	20	mg/kg	08.05.2020 12:17	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3133628

Parent Sample Id: 669190-001

Matrix: Soil

MS Sample Id: 669190-001 S

Prep Method: E300P

Date Prep: 08.05.2020

MSD Sample Id: 669190-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	415	200	629	107	629	107	90-110	0	20	mg/kg	08.05.2020 12:34	

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3133666

MB Sample Id: 7708781-1-BLK

Matrix: Solid

LCS Sample Id: 7708781-1-BKS

Prep Method: SW8015P

Date Prep: 08.05.2020

LCSD Sample Id: 7708781-1-BSD

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	993	99	1000	100	70-135	1	35	mg/kg	08.05.2020 15:25	
Diesel Range Organics (DRO)	<50.0	1000	1040	104	1040	104	70-135	0	35	mg/kg	08.05.2020 15:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		120		120		70-135	%	08.05.2020 15:25
o-Terphenyl	104		112		110		70-135	%	08.05.2020 15:25

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3133751

MB Sample Id: 7708853-1-BLK

Matrix: Solid

LCS Sample Id: 7708853-1-BKS

Prep Method: SW8015P

Date Prep: 08.06.2020

LCSD Sample Id: 7708853-1-BSD

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	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	08.06.2020 10:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		124		124		70-135	%	08.06.2020 10:04
o-Terphenyl	109		113		116		70-135	%	08.06.2020 10:04

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3133666

Matrix: Solid  
MB Sample Id: 7708781-1-BLK

Prep Method: SW8015P

Date Prep: 08.05.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.05.2020 15:05	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0256

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Final 1.000



**Larson and Associates, Inc.**  
Apache -EBDu #37

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3133751

Matrix: Solid

Prep Method: SW8015P

Date Prep: 08.06.2020

MB Sample Id: 7708853-1-BLK

**Parameter**

Motor Oil Range Hydrocarbons (MRO)

**MB  
Result**

<50.0

**Units**

mg/kg

**Analysis  
Date**

08.06.2020 09:44

**Flag**

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3133666

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.05.2020

Parent Sample Id: 669190-001

MS Sample Id: 669190-001 S

MSD Sample Id: 669190-001 SD

**Parameter**

Gasoline Range Hydrocarbons (GRO)

**Parent  
Result**

<50.0

**Spike  
Amount**

1000

**MS  
Result**

939

**MS  
%Rec**

94

**MSD  
Result**

915

**MSD  
%Rec**

92

**Limits**

70-135

**%RPD**

3

**RPD  
Limit**

35

**Units**

mg/kg

**Analysis  
Date**

08.05.2020 16:26

**Flag**

Diesel Range Organics (DRO)

<50.0

1000

967

97

962

96

70-135

1

35

mg/kg

08.05.2020 16:26

**Surrogate**

1-Chlorooctane

**MS  
%Rec**

118

**MS  
Flag**

**MSD  
%Rec**

116

**MSD  
Flag**

**Limits**

70-135

**Units**

%

**Analysis  
Date**

08.05.2020 16:26

o-Terphenyl

106

107

70-135

%

08.05.2020 16:26

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3133751

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.06.2020

Parent Sample Id: 669190-004

MS Sample Id: 669190-004 S

MSD Sample Id: 669190-004 SD

**Parameter**

Gasoline Range Hydrocarbons (GRO)

**Parent  
Result**

<50.1

**Spike  
Amount**

1000

**MS  
Result**

981

**MS  
%Rec**

98

**MSD  
Result**

946

**MSD  
%Rec**

95

**Limits**

70-135

**%RPD**

4

**RPD  
Limit**

35

**Units**

mg/kg

**Analysis  
Date**

08.06.2020 11:05

**Flag**

Diesel Range Organics (DRO)

<50.1

1000

1020

102

985

99

70-135

3

35

mg/kg

08.06.2020 11:05

**Surrogate**

1-Chlorooctane

**MS  
%Rec**

122

**MS  
Flag**

**MSD  
%Rec**

119

**MSD  
Flag**

**Limits**

70-135

**Units**

%

**Analysis  
Date**

08.06.2020 11:05

o-Terphenyl

112

109

70-135

%

08.06.2020 11:05

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD Result

MS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec

OCD Ex. 5-0257

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Final 1.000



507 N. Mariefeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to:

DATE: 8/5/2020 PAGE 1 OF 1  
PO#: \_\_\_\_\_ LAB WORK ORDER#: 1669190  
PROJECT LOCATION OR NAME: Apache - EBDU #37  
LAI PROJECT #: 19-0112-49 COLLECTOR: NO

TRRP report? ☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE:  
Time zone/State:

Field  
Sample I.D.

Lab #

Date \_\_\_\_\_

Time

Matrix

# ○

HC

HN

$$\underline{\text{H}_2\text{S}}$$

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TRPL

AS

DIES

7/11/4

100

VOC

087 P

082

SLP

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7/5

10

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OPLC

FOR

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FILE

INDA

NOTES

5

1

OCD Ex. 5-0258

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### Final 1.000

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

## Inter-Office Shipment

IOS Number : **68404**

Date/Time: 08.06.2020

Created by: Martha Castro

Please send report to: Holly Taylor

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: holly.taylor@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
669190-004	S	C-1	08.04.2020 17:28	TX1005	TPH by Texas1005	<b>08.06.2020</b>	08.18.2020	HTA	PHCC12C28 PHCC28C3:	

## Inter Office Shipment or Sample Comments:

Relinquished By:



Martha Castro

Date Relinquished: 08.06.2020

Received By: \_\_\_\_\_

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

Cooler Temperature: \_\_\_\_\_

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 08.05.2020 10.28.00 AM

Work Order #: 669190

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

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 container/ 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 relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 08.05.2020

Checklist reviewed by:



Martha Castro

Date: 08.06.2020

## Certificate of Analysis Summary 669750



Larson and Associates, Inc., Midland, TX

Project Name: EBOU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.11.2020 15:56

Contact: Mark Larson

Report Date: 08.12.2020 17:13

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669750-001	669750-002	669750-003	669750-004	669750-005	669750-006
	<i>Field Id:</i>	BH-2 10'	BH-2 12'	BH-2 14'	BH-2 16'	BH-2 18'	BH-2 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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	9.67 4.96	9.64 4.95

BRL - Below Reporting Limit

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



## Certificate of Analysis Summary 669750

Larson and Associates, Inc., Midland, TX

Project Name: EBOU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.11.2020 15:56

Contact: Mark Larson

Report Date: 08.12.2020 17:13

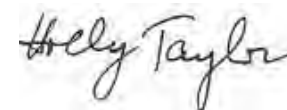
Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669750-007	669750-008	669750-009	669750-010	669750-011	669750-012
	<i>Field Id:</i>	BH-2 25'	BH-4 10'	BH-4 12'	BH-4 14'	BH-4 16'	BH-4 18'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	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 5.00	12.7 5.03

BRL - Below Reporting Limit

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



## Certificate of Analysis Summary 669750



Larson and Associates, Inc., Midland, TX

Project Name: EBOU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.11.2020 15:56

Contact: Mark Larson

Report Date: 08.12.2020 17:13

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669750-013		669750-014		669750-015		669750-016		669750-017		669750-018	
	<i>Field Id:</i>	BH-4 20'		BH-4 25'		BH-3 10'		BH-3 12'		BH-3 14'		BH-3 16'	
	<i>Depth:</i>												
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	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	<i>Extracted:</i>	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	
	<i>Analyzed:</i>	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	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		11.8	5.05	13.4	4.99	774	4.96	666	4.97	419	4.97	60.2	4.97

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 669750



Larson and Associates, Inc., Midland, TX

Project Name: EBOU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.11.2020 15:56

Contact: Mark Larson

Report Date: 08.12.2020 17:13

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669750-019	669750-020	669750-021	669750-022	669750-023	669750-024
	<i>Field Id:</i>	BH-3 18'	BH-3 20'	BH-3 25'	BH-5 10'	BH-5 12'	BH-5 14'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	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
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	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
	<i>Analyzed:</i>	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
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		89.3 5.02	227 5.05	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

## Certificate of Analysis Summary 669750



Larson and Associates, Inc., Midland, TX

Project Name: EBOU 37

Project Id: 19-0112-49

Date Received in Lab: Tue 08.11.2020 15:56

Contact: Mark Larson

Report Date: 08.12.2020 17:13

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669750-025	669750-026	669750-027	669750-028		
	<i>Field Id:</i>	BH-5 16'	BH-5 18'	BH-5 20'	BH-5 25'		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	08.11.2020 11:16	08.11.2020 11:18	08.11.2020 11:20	08.11.2020 11:30		
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43	08.11.2020 16:43		
	<i>Analyzed:</i>	08.11.2020 21:52	08.11.2020 22:08	08.11.2020 22:13	08.11.2020 22:19		
	<i>Units/RL:</i>	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,

A handwritten signature in black ink that reads "Holly Taylor".

---

**Holly Taylor**  
Project Manager

*A Small Business and Minority Company*

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



# Sample Cross Reference 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



## CASE NARRATIVE

***Client Name: Larson and Associates, Inc.***

***Project Name: EBOU 37***

Project ID: 19-0112-49  
Work Order Number(s): 669750

Report Date: 08.12.2020  
Date Received: 08.11.2020

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**Sample receipt non conformances and comments:**

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**Sample receipt non conformances and comments per sample:**

None



## Certificate of Analytical Results 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: **BH-2 10'**  
Lab Sample Id: 669750-001

Matrix: Soil  
Date Collected: 08.10.2020 11:01

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	79.7	4.97	mg/kg	08.11.2020 18:27		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-2 12'**  
Lab Sample Id: 669750-002

Matrix: Soil  
Date Collected: 08.10.2020 11:03

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	18.4	5.02	mg/kg	08.11.2020 18:42		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-2 14'**  
Lab Sample Id: 669750-003

Matrix: Soil  
Date Collected: 08.10.2020 11:05

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-2 16'**  
Lab Sample Id: 669750-004

Matrix: Soil  
Date Collected: 08.10.2020 11:09

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	10.3	4.99	mg/kg	08.11.2020 18:53		1





## Certificate of Analytical Results 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: **BH-2 18'**  
Lab Sample Id: 669750-005

Matrix: Soil  
Date Collected: 08.10.2020 11:10

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-2 20'**  
Lab Sample Id: 669750-006

Matrix: Soil  
Date Collected: 08.10.2020 11:11

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	<b>9.64</b>	4.95	mg/kg	08.11.2020 19:14		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-2 25'**  
Lab Sample Id: 669750-007

Matrix: Soil  
Date Collected: 08.10.2020 11:20

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	11.6	4.98	mg/kg	08.11.2020 19:19		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 10'**  
Lab Sample Id: 669750-008

Matrix: Soil  
Date Collected: 08.10.2020 13:05

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	24.0	5.04	mg/kg	08.11.2020 19:25		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 12'**  
Lab Sample Id: 669750-009

Matrix: Soil  
Date Collected: 08.10.2020 13:50

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	12.0	5.01	mg/kg	08.11.2020 19:30		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 14'**  
Lab Sample Id: 669750-010

Matrix: Soil  
Date Collected: 08.10.2020 13:55

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	10.3	4.97	mg/kg	08.11.2020 19:35		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 16'**  
Lab Sample Id: 669750-011

Matrix: Soil  
Date Collected: 08.10.2020 14:05

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	15.0	5.00	mg/kg	08.11.2020 19:40		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 18'**  
Lab Sample Id: 669750-012

Matrix: Soil  
Date Collected: 08.10.2020 14:10

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	12.7	5.03	mg/kg	08.11.2020 19:56		1



**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 20'**  
Lab Sample Id: 669750-013

Matrix: Soil  
Date Collected: 08.10.2020 14:40

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-4 25'**  
Lab Sample Id: 669750-014

Matrix: Soil  
Date Collected: 08.10.2020 14:45

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	13.4	4.99	mg/kg	08.11.2020 20:17		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 10'**  
Lab Sample Id: 669750-015

Matrix: Soil  
Date Collected: 08.11.2020 09:50

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	774	4.96	mg/kg	08.11.2020 20:23		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 12'**  
Lab Sample Id: 669750-016

Matrix: Soil  
Date Collected: 08.11.2020 09:55

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	666	4.97	mg/kg	08.11.2020 20:28		1



## Certificate of Analytical Results 669750

## Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: **BH-3 14'**  
Lab Sample Id: 669750-017

Matrix: Soil  
Date Collected: 08.11.2020 09:59

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	419	4.97	mg/kg	08.11.2020 20:33		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 16'**  
Lab Sample Id: 669750-018

Matrix: Soil  
Date Collected: 08.11.2020 10:00

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	<b>60.2</b>	4.97	mg/kg	08.11.2020 20:38		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 18'**  
Lab Sample Id: 669750-019

Matrix: Soil  
Date Collected: 08.11.2020 10:15

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	<b>89.3</b>	5.02	mg/kg	08.11.2020 20:44		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 20'**  
Lab Sample Id: 669750-020

Matrix: Soil  
Date Collected: 08.11.2020 10:20

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

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	227	5.05	mg/kg	08.11.2020 20:49		1



**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-3 25'**  
Lab Sample Id: 669750-021

Matrix: Soil  
Date Collected: 08.11.2020 10:25

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 10'**  
Lab Sample Id: 669750-022

Matrix: Soil  
Date Collected: 08.11.2020 10:56

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 12'**  
Lab Sample Id: 669750-023

Matrix: Soil  
Date Collected: 08.11.2020 10:58

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>9.94</b>	5.00	mg/kg	08.11.2020 21:42		1



## Certificate of Analytical Results 669750

Larson and Associates, Inc., Midland, TX

EBOU 37

Sample Id: **BH-5 14'**  
Lab Sample Id: 669750-024

Matrix: Soil  
Date Collected: 08.11.2020 11:00

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 16'**  
Lab Sample Id: 669750-025

Matrix: Soil  
Date Collected: 08.11.2020 11:16

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 18'**  
Lab Sample Id: 669750-026

Matrix: Soil  
Date Collected: 08.11.2020 11:18

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>9.30</b>	4.97	mg/kg	08.11.2020 22:08		1

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 20'**  
Lab Sample Id: 669750-027

Matrix: Soil  
Date Collected: 08.11.2020 11:20

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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

**Certificate of Analytical Results 669750****Larson and Associates, Inc., Midland, TX**

EBOU 37

Sample Id: **BH-5 25'**  
Lab Sample Id: 669750-028

Matrix: Soil  
Date Collected: 08.11.2020 11:30

Date Received: 08.11.2020 15:56

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 16:43

Basis: Wet Weight

Seq Number: 3134222

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



**Larson and Associates, Inc.**  
EBOU 37

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134219

MB Sample Id: 7709203-1-BLK

Matrix: Solid

LCS Sample Id: 7709203-1-BKS

Prep Method: E300P

Date Prep: 08.11.2020

LCSD Sample Id: 7709203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	266	106	267	107	90-110	0	20	mg/kg	08.11.2020 18:16	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134222

MB Sample Id: 7709204-1-BLK

Matrix: Solid

LCS Sample Id: 7709204-1-BKS

Prep Method: E300P

Date Prep: 08.11.2020

LCSD Sample Id: 7709204-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	266	106	265	106	90-110	0	20	mg/kg	08.11.2020 21:10	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134219

Parent Sample Id: 669750-001

Matrix: Soil

MS Sample Id: 669750-001 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669750-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	79.7	249	347	107	347	107	90-110	0	20	mg/kg	08.11.2020 18:32	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134219

Parent Sample Id: 669750-011

Matrix: Soil

MS Sample Id: 669750-011 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669750-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.0	250	288	109	289	110	90-110	0	20	mg/kg	08.11.2020 19:46	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134222

Parent Sample Id: 669700-003

Matrix: Soil

MS Sample Id: 669700-003 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669700-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7940	2510	10400	98	10500	102	90-110	1	20	mg/kg	08.12.2020 09:52	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3134222

Parent Sample Id: 669750-021

Matrix: Soil

MS Sample Id: 669750-021 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669750-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.7	251	307	109	305	108	90-110	1	20	mg/kg	08.11.2020 21:26	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec

OCD Ex. 5-0299

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Final 1.000



№ 1220  
CHAIN-OF-CUSTODY  
1900150

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Larson and Associates, Inc.**Date/ Time Received:** 08.11.2020 03.56.00 PM**Work Order #:** 669750**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	24.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	No
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

**\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

**Checklist completed by:**

Brianna Teel

Date: 08.11.2020

**Checklist reviewed by:**

Holly Taylor

Date: 08.12.2020

## **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.

**Appendix D**  
**OCD Communications**

**From:** [Billings, Bradford, EMNRD](#)  
**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 to 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](mailto: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](mailto: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](mailto:Bradford.Billings@state.nm.us)>

**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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 18<sup>th</sup>.

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](mailto:Larry.Baker@apachecorp.com) or me if you have questions.

Mark J. Larson, P.G.

President/Sr. Hydrogeologist

507 N. Marienfeld St., Suite 202

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Office – 432-687-0901

Cell – 432- 556-8656

Fax – 432-687-0456

[mark@laenvironmental.com](mailto:mark@laenvironmental.com)



**“Serving the Permian Basin Since 2000”**

**From:** Billings, Bradford, EMNRD <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
**Sent:** Monday, August 10, 2020 10:51 AM  
**To:** Mark Larson <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto:Mark@laenvironmental.com)>  
**Sent:** Monday, August 10, 2020 8:49 AM  
**To:** Billings, Bradford, EMNRD <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto:Bradford.Billings@state.nm.us)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto: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](mailto:mark@laenvironmental.com)



**"Serving the Permian Basin Since 2000"**

---

**From:** Mark Larson <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>



**Sent:** Monday, December 23, 2019 1:58 PM

**To:** [Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)

**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Rachel Owen <[rowen@laenvironmental.com](mailto:rowen@laenvironmental.com)>;

Mark Larson <[Mark@laenvironmental.com](mailto: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

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**1RP-5636**  
**2021**  
**First (1<sup>st</sup>) 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

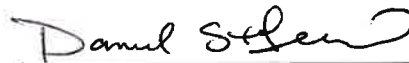
April 20, 2021

**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



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## Appendices

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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 Blinbry 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 Blinbry 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 Blinbry 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-mil 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.

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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.

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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-3 (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**

**Table 1**  
**1RP-5636**  
**Monitoring Well Completion and Gauging Summary**  
**Apache Corporaion, EBDU #37**  
**Lea County, New Mexico**

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
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	--	--	--	--
									12/26/2020	--	--	--	--
									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	--	--	--	--
									12/26/2019	--	--	--	--
									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



**Table 2**  
**1RP-5636**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU 37, Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To Water (Feet TOC)
NMWQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	
Windmill	( <sup>1</sup> ) 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	( <sup>2</sup> ) 09/23/2019	--	--	--	--	--	--	--
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	--
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	--
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	--
TMW-1	( <sup>2</sup> ) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.9
	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	
TMW-2	( <sup>2</sup> ) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	55.8
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	57.5
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	58.01
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	58.06
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	293	1,000	
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	57.39
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	987	2,300	57.45
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	834	1,960	
DUP-1 (Windmill)	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	276	794	--
DUP-1 (Windmill)	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	278	908	--
DUP-1 (Windmill)	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	259	798	--

**Table 2**  
**1RP-5636**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU 37, Lea County, New Mexico**

**Notes:**

(<sup>1</sup>): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).

(<sup>2</sup>): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>3</sup>): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>4</sup>): analysis 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

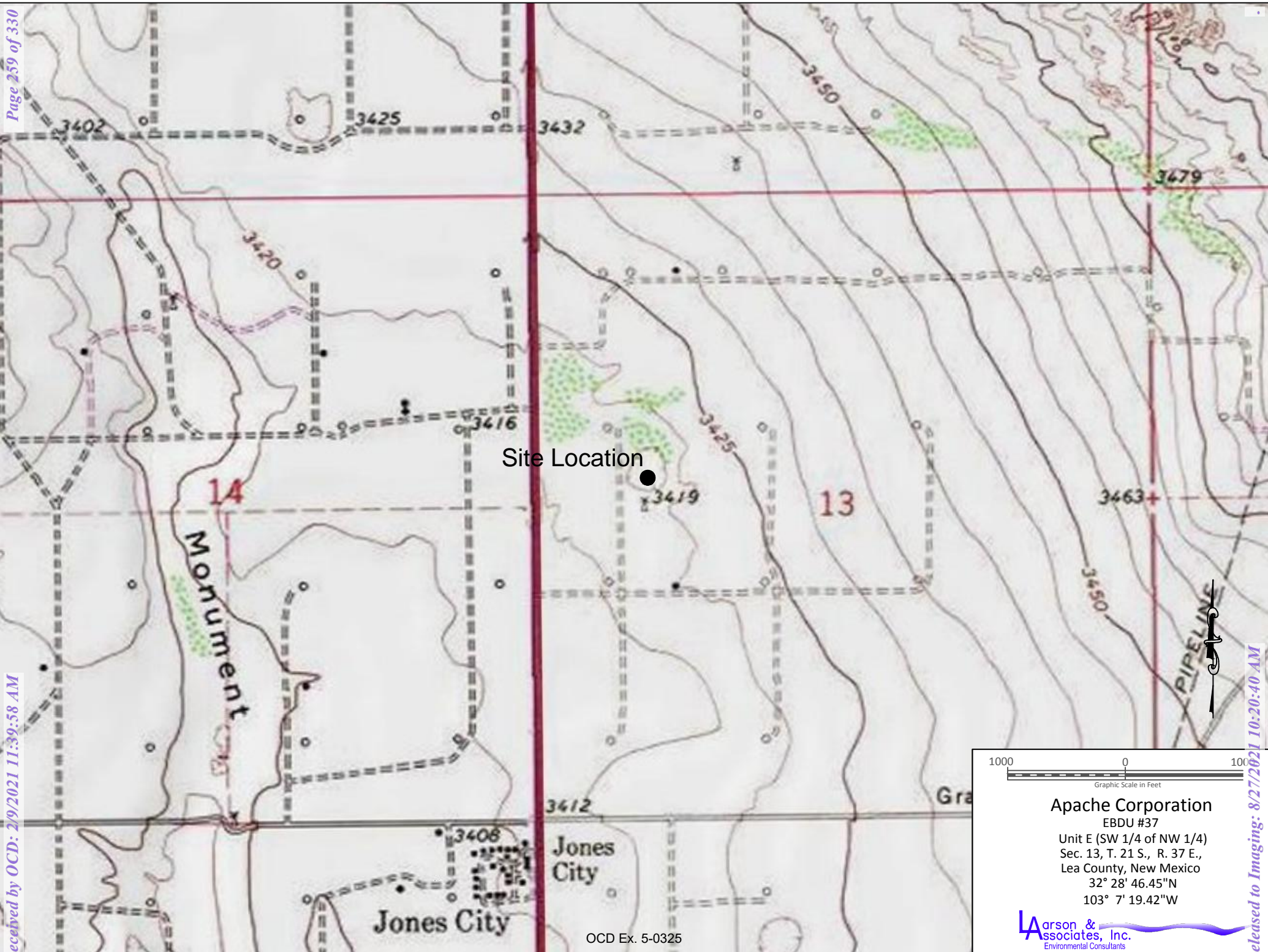
--: no data available

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**



OCD Ex. 5-0325

1000 0 100  
Graphic Scale in Feet

**Apache Corporation**  
EBDU #37  
Unit E (SW 1/4 of NW 1/4)  
Sec. 13, T. 21 S., R. 37 E.,  
Lea County, New Mexico  
32° 28' 46.45"N  
103° 7' 19.42"W

**Larson & Associates, Inc.**  
Environmental Consultants

Figure 1 - Topographic Map



Figure 2 - Aerial Map



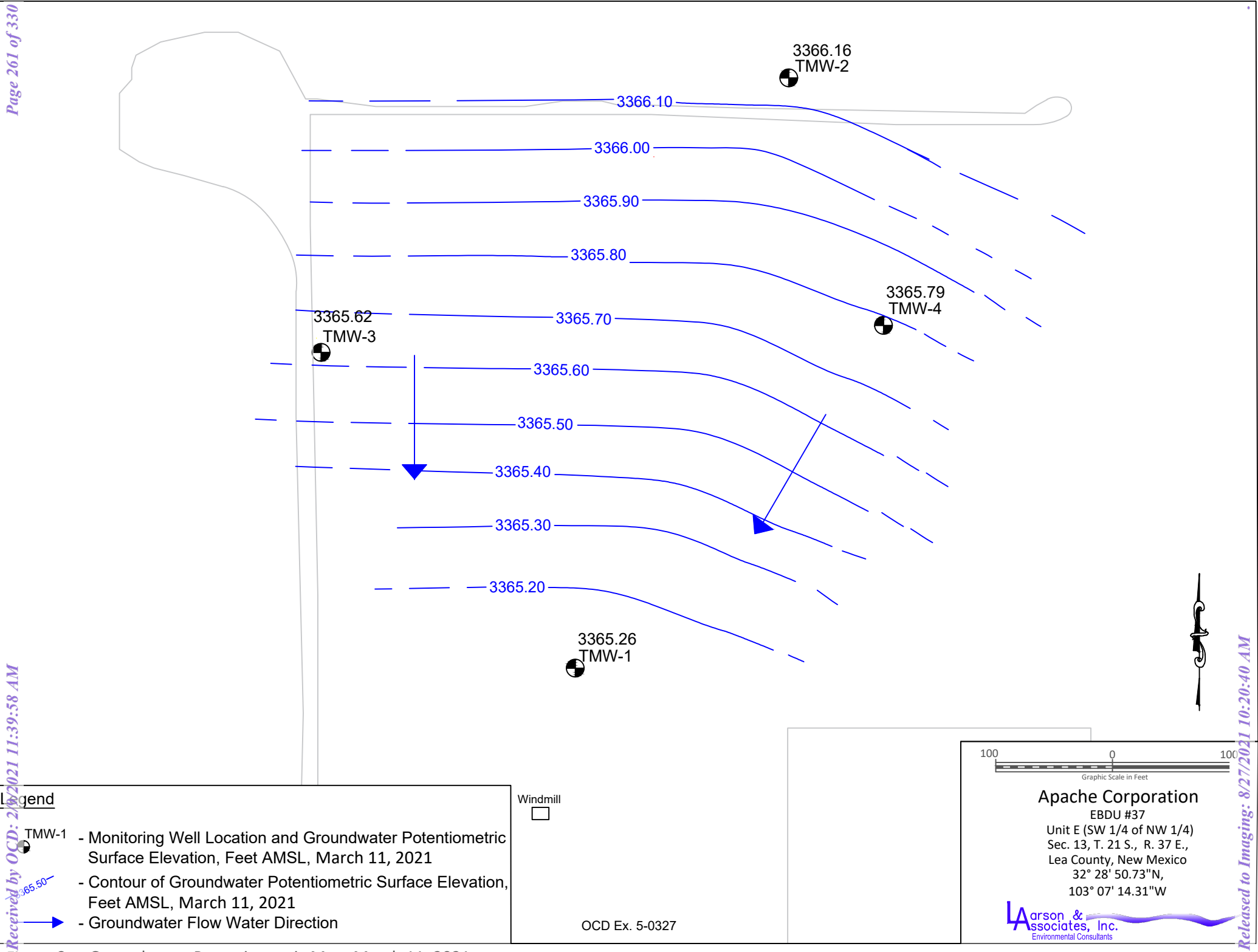


Figure 3a - Groundwater Potentiometric Map, March 11, 2021

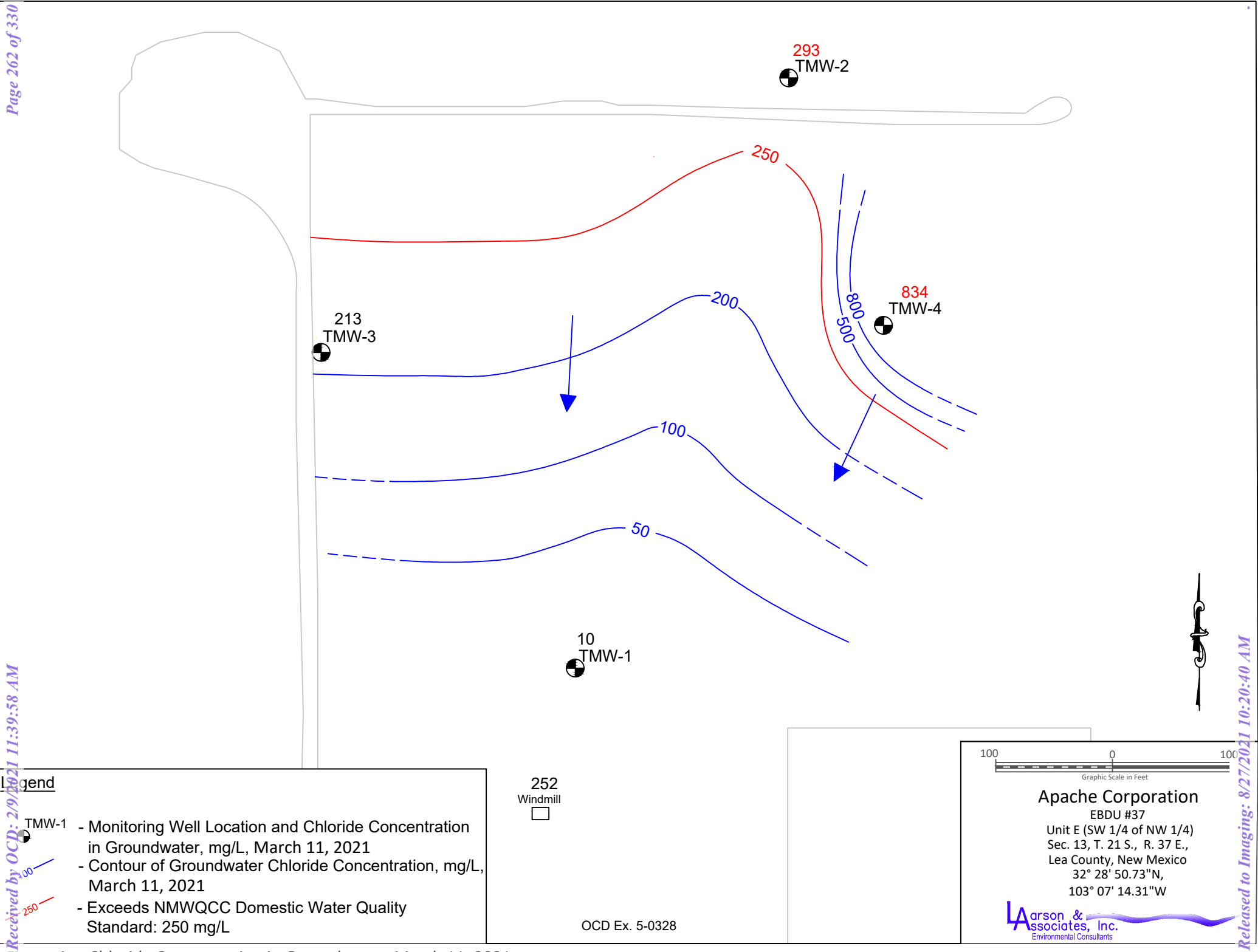
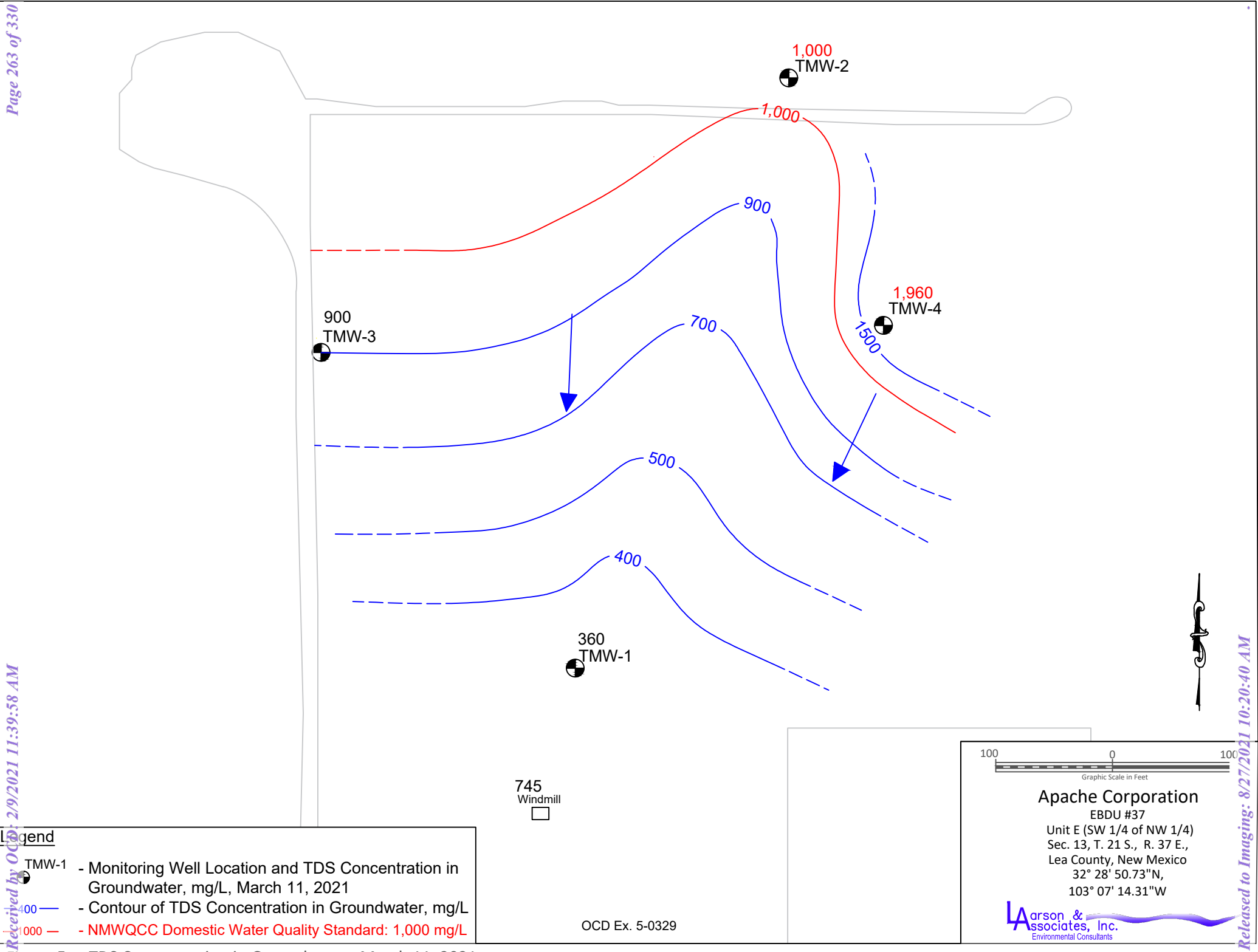


Figure 4a - Chloride Concentration in Groundwater, March 11, 2021





## **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: W 32.4807053 Longitude: N -103.123085

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EBDU #37 WIW	Site Type: Water Injection Well
Date Release Discovered: July 14, 2019	API # 3002506556

Unit Letter	Section	Township	Range	County
E	12	21S	37E	LEA

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

### Nature and Volume of Release

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

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

Cause of Release

Isolation valve failure due to internal corrosion.

## Initial Response

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

OCD Ex. 5-0332

**Appendix B**  
**OCD Communications**

**From:** [Billings, Bradford, EMNRD](#)  
**To:** [Mark Larson](#)  
**Cc:** [Baker, Larry](#); [Rachel Owen](#)  
**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](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

**From:** [Billings, Bradford, EMNRD](#)  
**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 to 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](mailto: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](mailto: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](mailto:Bradford.Billings@state.nm.us)>

**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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 18<sup>th</sup>.

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](mailto: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](mailto:mark@laenvironmental.com)



**“Serving the Permian Basin Since 2000”**



**From:** Billings, Bradford, EMNRD <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
**Sent:** Monday, August 10, 2020 10:51 AM  
**To:** Mark Larson <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto:Mark@laenvironmental.com)>  
**Sent:** Monday, August 10, 2020 8:49 AM  
**To:** Billings, Bradford, EMNRD <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto:Bradford.Billings@state.nm.us)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto: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](mailto:mark@laenvironmental.com)



**"Serving the Permian Basin Since 2000"**

---

**From:** Mark Larson <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>

**Sent:** Monday, December 23, 2019 1:58 PM

**To:** [Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)

**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Rachel Owen <[rowen@laenvironmental.com](mailto:rowen@laenvironmental.com)>;

Mark Larson <[Mark@laenvironmental.com](mailto: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](mailto:mark@laenvironmental.com)



*“Serving the Permian Basin Since 2000”*

OCD Ex. 5-0340

**From:** [Billings, Bradford, EMNRD](#)  
**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 <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Robert Nelson <[rnelson@laenvironmental.com](mailto: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](mailto: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](mailto:mark@laenvironmental.com)



*"Serving the Permian Basin Since 2000"*

---

**From:** Mark Larson <[Mark@laenvironmental.com](mailto:Mark@laenvironmental.com)>

**Sent:** Monday, December 23, 2019 1:58 PM

**To:** [Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)

**Cc:** Baker, Larry <[Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com)>; Rachel Owen <[rowen@laenvironmental.com](mailto:rowen@laenvironmental.com)>; Mark Larson <[Mark@laenvironmental.com](mailto: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](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

## **Appendix C**

### **Boring Logs**

BORING RECORD									
GEOLOGIC UNIT	DEPTH	Start: 11:40 Finish: 12:58 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: TOC Elevation:			REMARKS	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM	
	0	Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry	CL						
	5	Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry	Caliche						
	10	Silty Sand, 10YR, 6/4, Light Yellowish ..., Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose	SM						
	15	7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, ... Round							
	20	10YR, 7/4, Very Pale Brown Below 15'							
	25	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'	SW						
	30								
	35								
	40	Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Moderately Well Cemented to Well Cemented	Sand Stone						
	45								
	50								
	55								
	60	Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm	SP						
		TD: 62'							

	ONE CONTINUOUS AUGER SAMPLER		WATER TABLE (TIME OF BORING)	JOB NUMBER : <u>Apache Corp./ 19-0112-49</u>
	STANDARD PENETRATION TEST		LABORATORY TEST LOCATION	HOLE DIAMETER : <u>5"</u>
	UNDISTURBED SAMPLE		PENETROMETER (TONS/ SQ. FT)	LOCATION : <u>EBDU #37</u>
	WATER TABLE (24 HRS)		NO RECOVERY	LAI GEOLOGIST : <u>M. Larson</u>

 Larson & Associates, Inc. Environmental Consultants	DRILL DATE : <u>9-19-2019</u>	BORING NUMBER : <u>TMW-1</u>	DRILLING CONTRACTOR : _____
			DRILLING METHOD : <u>SR/WR</u>



BORING RECORD								
GEOLOGIC UNIT	DEPTH	Start: 15:02 Finish: 15:55 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,563.50' TOC Elevation: 3,566.23'			REMARKS
					NUMBER	RECOVERY	DEPTH	
	0	Silty Clay, 10YR, 5/6, Ash Brown, Dry	CL					BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	5	Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand	Caliche					15:02
	10							15:03
	15	Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SM					15:05
	20							15:10
	25	Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry						15:15
	30		SW					15:17
	35							15:22
	40	Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry						15:23
	45		SW					15:28
								15:30
		*Continue*						









  

	ONE CONTINUOUS AUGER SAMPLER		WATER TABLE (TIME OF BORING)	JOB NUMBER : Apache Corp. / 19-0112-49
	STANDARD PENETRATION TEST		LABORATORY TEST LOCATION	HOLE DIAMETER : 5"
	UNDISTURBED SAMPLE		PENETROMETER (TONS/ SQ. FT.)	LOCATION : EBDU #37
	WATER TABLE (24 HRS)		NR NO RECOVERY	LAI GEOLOGIST : M. Larson
				DRILLING CONTRACTOR : SDC
DRILL DATE : 9-20-2019		BORING NUMBER : TMW-2		DRILLING METHOD : Air Rotary


## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 15:02 Finish: 15:55 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,563.50' TOC Elevation: 3,566.23'			REMARKS
					*Continue*	NUMBER	RECOVERY	
	50	*Continue*						BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	55	Silty and Clayey Below 50', Moist at 55'						
	60		SM-SC					
	65							
	70							
	75							
		Gravel, 7.5YR, 4/3, Light Brown, Poorly Sorted, Round, Red Bed	GW					
	80	TD: 79'						

 ONE CONTINUOUS AUGER SAMPLER	 WATER TABLE ( TIME OF BORING )	JOB NUMBER : <u>Apache Corp. / 19-0112-49</u> HOLE DIAMETER : <u>5"</u> LOCATION : <u>EBDU #37</u> LAI GEOLOGIST : <u>M. Larson</u> DRILLING CONTRACTOR : <u>SDC</u> DRILLING METHOD : <u>Air Rotary</u>
 STANDARD PENETRATION TEST	 LABORATORY TEST LOCATION	
 UNDISTURBED SAMPLE	 PENETROMETER ( TONS/ SQ. FT )	
 WATER TABLE ( 24 HRS )	 NO RECOVERY	

	DRILL DATE : 9-20-2019	BORING NUMBER : TMW-2
--	---------------------------	--------------------------

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:35 MST Finish: 10:30 MST DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS	
					PPM X _____										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING
					2	4	6	8	10	12	14	16	18						
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Quartz	SM												1			1	
	5	Sand, Quartz and Feldspar Moderate to Well Sorted, Sub Rounded to Well Rounded	Caliche												2			5	
	10	Caliche, 7.5YR 8/2, Pinkish White, Sandy, Fine to Very Fine Grains, Well Sorted, Well Rounded													3			10	
	15														4			15	
	20	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand		SM												5			20
	25	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand	SM												6			25	
	30	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand with Increase in Depth Lithology													7			30	
	35	Remains the Same													8			35	
	40	@37' becomes Silty to Very Fine Grained Quartz Sand to 65'													9			40	
	45		SM												10			45	
	50														11			50	
	55														12			55	
	60														13			60	
	65	Gravelly Sand, 7.5YR, Strong Brown, Fine to Very Fine Coarse Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel(5-15mm), Poorly Sorted	SP												14			65	
	70														15			68	
	75																		

TD: 68.41'



ONE CONTINUOUS AUGER SAMPLER



WATER TABLE ( TIME OF BORING )



STANDARD PENETRATION TEST



LABORATORY TEST LOCATION



UNDISTURBED SAMPLE



PENETROMETER ( TONS/ SQ. FT )



WATER TABLE ( 24 HRS )



NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

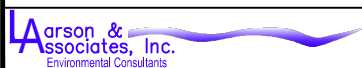
HOLE DIAMETER : 5"

LOCATION : EBDU #37

LAI GEOLOGIST : T. Jackson

DRILLING CONTRACTOR : SDC

DRILLING METHOD : Air Rotary



DRILL DATE : 09-29-2020

BORING NUMBER : TMW-3

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 12:45 Finish: 13:40 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING		SAMPLE		REMARKS
							NUMBER	RECOVERY DEPTH	
	0								
	5	Caliche, 7.5YR 8/2, Pinkish White, Medium to Very Fine, Poorly Sorted, Sub Angular to Sub Rounded	Caliche						
	10								
	15	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded,	SM						
	20	Very Well Sorted, Fine to Very Fine Quartz Sand							
	25	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich Sand, Sub Angular to Sub Rounded,							
	30	Poorly Sorted, Coarse to Fine Grained Quartz Sand with Increase in Depth							
	35	@34' Lithology Remained Constant and Grain Size	SM						
	40	Decreased to Fine to Very Fine Quartz Sand, Well Sorted, Rounded to Well Rounded							
	45								
	50								
	55		SM						
	60	Sand, 7.5YR, Strong Brown, With Gravel, Fine to Very Coarse Quartz Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded,							
	65	Gravel (5-15mm), Poorly Sorted							
	70								
	75	TD: 70.09'							

☐ ONE CONTINUOUS AUGER SAMPLER

☐ STANDARD PENETRATION TEST

☐ UNDISTURBED SAMPLE

☐ WATER TABLE ( 24 HRS )

☐ WATER TABLE ( TIME OF BORING )

☐ LABORATORY TEST LOCATION

☐ PENETROMETER ( TONS/ SQ. FT )

☐ NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU #37

LAI GEOLOGIST : T. Jackson

DRILLING CONTRACTOR : SDC

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
09-29-2020

BORING NUMBER :  
TMW-4

**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](mailto:holly.taylor@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

OCD Ex. 5-0351

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Laboratory Job ID: 880-387-1

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## Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## Qualifiers

## GC VOA

Qualifier	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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Eurofins Xenco, Midland



## Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

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**Job ID: 880-387-1**

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**Laboratory: Eurofins Xenco, Midland**

---

**Narrative**

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**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.

## Detection Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## 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	Qualifier	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	Qualifier	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

## Client Sample ID: Windmill

## Lab Sample ID: 880-387-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	252		2.50	mg/L	5		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	Qualifier	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.

Eurofins Xenco, Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-1

Lab Sample ID: 880-387-1

Date Collected: 03/11/21 08:53

Matrix: Water

Date Received: 03/15/21 09:18

## Method: 8021B - Volatile Organic Compounds (GC)

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, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10.9		0.500	mg/L			03/17/21 23:08	1

## Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample ID: TWM-3

Lab Sample ID: 880-387-2

Date Collected: 03/11/21 09:12

Matrix: Water

Date Received: 03/15/21 09:18

## Method: 8021B - Volatile Organic Compounds (GC)

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)	102		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, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	213		5.00	mg/L			03/17/21 23:17	10

## Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	900	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Eurofins Xenco, Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-2

Lab Sample ID: 880-387-3

Date Collected: 03/11/21 09:36

Matrix: Water

Date Received: 03/15/21 09:18

## Method: 8021B - Volatile Organic Compounds (GC)

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)	108		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, Ion Chromatography

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 (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1000	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample ID: TWM-4

Lab Sample ID: 880-387-4

Date Collected: 03/11/21 10:05

Matrix: Water

Date Received: 03/15/21 09:18

## Method: 8021B - Volatile Organic Compounds (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
Xylenes, Total	<4.00	U	4.00	ug/L			03/20/21 11:31	1
m-Xylene & p-Xylene	<4.00	U	4.00	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

## Method: 300.0 - Anions, Ion Chromatography

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 (TDS)

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

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: Windmill

Lab Sample ID: 880-387-5

Date Collected: 03/12/21 13:26

Matrix: Water

Date Received: 03/15/21 09:18

## Method: 8021B - Volatile Organic Compounds (GC)

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, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	252		2.50	mg/L			03/18/21 00:02	5

## Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	745	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

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

## Method: 8021B - Volatile Organic Compounds (GC)

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, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	259		2.50	mg/L			03/18/21 00:11	5

## Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	798	K	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Eurofins Xenco, Midland

## Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
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
MB 880-750/39	Method Blank	115	96

## Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## 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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/19/21 10:29	1
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
Xylenes, Total	<4.00	U	4.00	ug/L			03/19/21 10:29	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L			03/19/21 10:29	1
o-Xylene	<2.00	U	2.00	ug/L			03/19/21 10:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130		03/19/21 10:29	1
1,4-Difluorobenzene (Surr)	97		70 - 130		03/19/21 10:29	1

Lab Sample ID: LCS 880-592/3

Matrix: Water

Analysis Batch: 592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%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		110	70 - 130
m-Xylene & p-Xylene	200	233.0		ug/L		117	70 - 130
o-Xylene	100	112.0		ug/L		112	70 - 130

Surrogate	LCS %Recovery	LCS 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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	100	110.6		ug/L		111	70 - 130	6	20
Ethylbenzene	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

Surrogate	LCSD %Recovery	LCSD 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

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<2.00	U F1	100	114.4		ug/L		114	70 - 130

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## 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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<2.00	U F1	100	121.0		ug/L		121	70 - 130
Toluene	<2.00	U F1	100	118.2		ug/L		118	70 - 130
m-Xylene & p-Xylene	<4.00	U F1	200	247.1		ug/L		124	70 - 130
o-Xylene	<2.00	U F1	100	119.3		ug/L		119	70 - 130
Surrogate	MS %Recovery	MS 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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
Ethylbenzene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
Toluene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
m-Xylene & p-Xylene	<4.00	U F1	200	<4.00	U F1	ug/L		0	70 - 130	NC	25
o-Xylene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
Surrogate	MSD %Recovery	MSD Qualifier	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

Analyte	MB Result	MB 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
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130			03/23/21 10:55	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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/24/21 01:27	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/24/21 01:27	1

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-750/39

Matrix: Water

Analysis Batch: 750

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<2.00	U	2.00	ug/L			03/24/21 01:27	1
Total BTEX	<2.00	U	2.00	ug/L			03/24/21 01:27	1
Xylenes, Total	<4.00	U	4.00	ug/L			03/24/21 01:27	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L			03/24/21 01:27	1
o-Xylene	<2.00	U	2.00	ug/L			03/24/21 01:27	1

Surrogate	MB %Recovery	MB 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

Lab Sample ID: LCS 880-750/33

Matrix: Water

Analysis Batch: 750

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	100	96.25		ug/L		96	70 - 130
Ethylbenzene	100	93.87		ug/L		94	70 - 130
Toluene	100	99.05		ug/L		99	70 - 130
m-Xylene & p-Xylene	200	191.1		ug/L		96	70 - 130
o-Xylene	100	93.23		ug/L		93	70 - 130

Surrogate	LCS %Recovery	LCS 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: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	100	93.34		ug/L		93	70 - 130	3	20
Ethylbenzene	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

Surrogate	LCSD %Recovery	LCSD 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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<2.00	U	100	96.80		ug/L		97	70 - 130
Ethylbenzene	<2.00	U	100	95.39		ug/L		95	70 - 130
Toluene	<2.00	U	100	101.2		ug/L		101	70 - 130

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## 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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	<4.00	U	200	190.3		ug/L		95	70 - 130
o-Xylene	<2.00	U	100	91.70		ug/L		92	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	93		70 - 130						
1,4-Difluorobenzene (Surr)	99		70 - 130						

Lab Sample ID: 820-139-B-4 MSD

Matrix: Water

Analysis Batch: 750

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<2.00	U	100	99.07		ug/L		99	70 - 130	2	25
Ethylbenzene	<2.00	U	100	101.1		ug/L		101	70 - 130	6	25
Toluene	<2.00	U	100	104.3		ug/L		104	70 - 130	3	25
m-Xylene & p-Xylene	<4.00	U	200	201.7		ug/L		101	70 - 130	6	25
o-Xylene	<2.00	U	100	98.08		ug/L		98	70 - 130	7	25
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	97		70 - 130								
1,4-Difluorobenzene (Surr)	101		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-549/3

Matrix: Water

Analysis Batch: 549

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			03/17/21 22:13	1

Lab Sample ID: LCS 880-549/4

Matrix: Water

Analysis Batch: 549

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	23.89		mg/L		96	90 - 110

Lab Sample ID: LCSD 880-549/5

Matrix: Water

Analysis Batch: 549

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	23.77		mg/L		95	90 - 110	1	20

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-415-A-1 MS

Matrix: Water

Analysis Batch: 549

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	51.0		25.0	75.29		mg/L		97	90 - 110

Lab Sample ID: 880-415-A-1 MSD

Matrix: Water

Analysis Batch: 549

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	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

Matrix: WATER

Analysis Batch: 3154281

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3154281\_P

Analyte	BLANK Result	BLANK Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5	U	5		mg/L		03/21/21 12:30	03/21/21 12:30	1

Lab Sample ID: 3154281-1-BKS

Matrix: WATER

Analysis Batch: 3154281

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3154281\_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	987		mg/L		99	80 - 120

Lab Sample ID: 3154281-1-BSD

Matrix: WATER

Analysis Batch: 3154281

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3154281\_P

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	955		mg/L		96	80 - 120	3	10

Lab Sample ID: 692017-006 D

Matrix: WATER

Analysis Batch: 3154281

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 3154281\_P

Analyte	Sample Result	Sample Qualifier	DUP Result	DUP Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	798		742		mg/L		7	10

Eurofins Xenco, Midland

## 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

## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

## 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***	

Eurofins Xenco, Midland

## Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

**Client Sample ID: TWM-1****Lab Sample ID: 880-387-1****Date Collected: 03/11/21 08:53****Matrix: Water****Date Received: 03/15/21 09:18**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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	CH	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

**Client Sample ID: TWM-3****Lab Sample ID: 880-387-2****Date Collected: 03/11/21 09:12****Matrix: Water****Date Received: 03/15/21 09:18**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 10:50	MR	XM
Total/NA	Analysis	300.0		10	549	03/17/21 23:17	CH	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

**Client Sample ID: TWM-2****Lab Sample ID: 880-387-3****Date Collected: 03/11/21 09:36****Matrix: Water****Date Received: 03/15/21 09:18**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 11:11	MR	XM
Total/NA	Analysis	300.0		10	549	03/17/21 23:26	CH	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

**Client Sample ID: TWM-4****Lab Sample ID: 880-387-4****Date Collected: 03/11/21 10:05****Matrix: Water****Date Received: 03/15/21 09:18**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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	CH	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

**Client Sample ID: Windmill****Lab Sample ID: 880-387-5****Date Collected: 03/12/21 13:26****Matrix: Water****Date Received: 03/15/21 09:18**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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	CH	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

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: Dup-1

Date Collected: 03/12/21 00:00

Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared 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	CH	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

## Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

### Laboratory: Eurofins Xenco, Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

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



## 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

Eurofins Xenco, Midland

## 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	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	

Eurofins Xenco, Midland

# Marson & Associates, Inc.

Environmental Consultants

880-387 Chain of Custody



4. Marrenfeld, Ste. 200  
Midland, TX 79701  
432-687-0901

Data Reported to

DATE: 3/15/2021 PAGE 1 OF 1  
PO#: \_\_\_\_\_ LAB WORK ORDER#: \_\_\_\_\_  
PROJECT LOCATION OR NAME: Apache - T-600 #37  
LAI PROJECT # 19-0112-49 COLLECTOR: RJ TJ MS

CHAIN-OF-CUSTODY

№1539

TIME ZONE Time zone/State	S=SOIL W=WATER A=AIR	P=PAINT SL=SLUDGE OT=OTHER	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION				ANALYSES	FIELD NOTES	
								HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE			UNPRESERVED
TRAP-1														
TRAP-2														
TRAP-3														
TRAP-4														
Windmill														
Dep-1														
TOTAL														

RELINQUISHED BY (Signature) [Signature] DATE/TIME 3/15/21 9:18 RECEIVED BY (Signature) [Signature]

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_

LABORATORY Xenix

TURN AROUND TIME  
NORMAL ☒  
1 DAY ☐  
2 DAY ☐  
OTHER ☐

LABORATORY USE ONLY:  
RECEIVING TEMP 30/35 THERM# 120  
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED  
☐ CARRIER BILL # \_\_\_\_\_  
☐ HAND DELIVERED

## Login Sample Receipt Checklist

Client: Larson &amp; 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	

Table 2  
1RP-5636Groundwater Sample Analytical Data Summary  
Apache Corporation, EBDU 37, Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To Water (Feet TOC)
NMWQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	
Windmill	( <sup>1</sup> ) 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	( <sup>2</sup> ) 09/23/2019	--	--	--	--	--	--	--
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	--
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	--
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	--
	( <sup>3</sup> ) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	255	781	--
TMW-1	( <sup>2</sup> ) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.90
	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	49.41
	( <sup>3</sup> ) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	49.67
TMW-2	( <sup>2</sup> ) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	55.80
	( <sup>2</sup> ) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	57.50
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	58.01
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	58.06
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	293	1,000	58.00
	( <sup>3</sup> ) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	267	1,050	58.12
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	57.59
	( <sup>3</sup> ) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	57.90
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	( <sup>3</sup> ) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	57.39
	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	987	2,300	57.45
	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	834	1,960	57.40
	( <sup>3</sup> ) 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	745	1,190	57.60

## 1RP-5636

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

DUP-1 (Windmill)	( <sup>3</sup> ) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<b>276</b>	794	--
DUP-1 (Windmill)	( <sup>3</sup> ) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	<b>278</b>	908	--
DUP-1 (Windmill)	( <sup>3</sup> ) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	<b>259</b>	798	--
DUP-1 (Windmill)	( <sup>3</sup> ) 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	<b>256</b>	781	--

**Notes:**

(<sup>1</sup>): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).

(<sup>2</sup>): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>3</sup>): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>4</sup>): analysis 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](mailto:holly.taylor@eurofinset.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

OCD Ex. 5-0376

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Laboratory Job ID: 880-3001-1  
SDG: 19-0112-49

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## Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## 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)
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
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

**Case Narrative**

Client: Larson & Associates, Inc.  
Project/Site: Apache - 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 Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

Client Sample ID: TMW-1

Lab Sample ID: 880-3001-1

Date Collected: 06/10/21 10:23

Matrix: Water

Date Received: 06/14/21 08:37

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 15:31	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 Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.5		0.500	mg/L			06/15/21 15:43	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		50.0	mg/L			06/16/21 18:56	1

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

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 15:57	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 Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	267		2.50	mg/L			06/15/21 15:49	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1050		50.0	mg/L			06/16/21 18:56	1

Eurofins Xenco, Midland

## 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

Date Received: 06/14/21 08:37

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 16:22	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 16:22	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 16:22	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 16:22	1

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	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	934		50.0	mg/L			06/16/21 18:56	1

Client Sample ID: TMW-4

Lab Sample ID: 880-3001-4

Date Collected: 06/11/21 10:50

Matrix: Water

Date Received: 06/14/21 08:37

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 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

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

Client Sample ID: Windmill

Lab Sample ID: 880-3001-5

Date Collected: 06/10/21 12:26

Matrix: Water

Date Received: 06/14/21 08:37

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 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 Chromatography

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
Total Dissolved Solids	794		50.0	mg/L			06/16/21 18:56	1

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

## 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 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)	116		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 Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	256		2.50	mg/L			06/15/21 16:32	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	781		50.0	mg/L			06/16/21 18:56	1

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## Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-2930-A-1 MS	Matrix Spike	99	104
880-2930-A-1 MSD	Matrix Spike Duplicate	100	101
880-3001-1	TMW-1	108	103
880-3001-2	TMW-2	105	102
880-3001-3	TMW-3	112	107
880-3001-4	TMW-4	110	105
880-3001-5	Windmill	107	102
880-3001-6	Dup-1	116	88
LCS 880-4074/3	Lab Control Sample	104	104
LCSD 880-4074/4	Lab Control Sample Dup	99	107
MB 880-4074/8	Method Blank	71	84

## Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Toluene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
o-Xylene	<0.00200	U	0.00200	mg/L			06/14/21 12:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1
Total BTEX	<0.00400	U	0.00400	mg/L			06/14/21 12:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130		06/14/21 12:59	1
1,4-Difluorobenzene (Surr)	84		70 - 130		06/14/21 12:59	1

Lab Sample ID: LCS 880-4074/3

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09419		mg/L		94	70 - 130
Toluene	0.100	0.1038		mg/L		104	70 - 130
Ethylbenzene	0.100	0.1078		mg/L		108	70 - 130
m-Xylene & p-Xylene	0.200	0.1914		mg/L		96	70 - 130
o-Xylene	0.100	0.09672		mg/L		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-4074/4

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.09313		mg/L		93	70 - 130	1	20
Toluene	0.100	0.1006		mg/L		101	70 - 130	3	20
Ethylbenzene	0.100	0.1055		mg/L		106	70 - 130	2	20
m-Xylene & p-Xylene	0.200	0.1875		mg/L		94	70 - 130	2	20
o-Xylene	0.100	0.09438		mg/L		94	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-2930-A-1 MS

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.00880		0.100	0.1055		mg/L		97	70 - 130

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-2930-A-1 MS

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.0123		0.100	0.1165		mg/L		104	70 - 130
Ethylbenzene	<0.00200	U	0.100	0.1064		mg/L		106	70 - 130
m-Xylene & p-Xylene	0.00594		0.200	0.1952		mg/L		95	70 - 130
o-Xylene	<0.00200	U	0.100	0.09681		mg/L		96	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		70 - 130						
1,4-Difluorobenzene (Surr)	104		70 - 130						

Lab Sample ID: 880-2930-A-1 MSD

Matrix: Water

Analysis Batch: 4074

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.00880		0.100	0.09846		mg/L		90	70 - 130	7	25
Toluene	0.0123		0.100	0.1114		mg/L		99	70 - 130	4	25
Ethylbenzene	<0.00200	U	0.100	0.1028		mg/L		103	70 - 130	3	25
m-Xylene & p-Xylene	0.00594		0.200	0.1878		mg/L		91	70 - 130	4	25
o-Xylene	<0.00200	U	0.100	0.09330		mg/L		92	70 - 130	4	25
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		70 - 130								
1,4-Difluorobenzene (Surr)	101		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4120/3

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			06/15/21 14:49	1

Lab Sample ID: LCS 880-4120/4

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	23.77		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-4120/5

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	23.31		mg/L		93	90 - 110	2	20

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-3041-A-1 MS

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.4		25.0	40.52		mg/L		96	90 - 110

Lab Sample ID: 880-3041-A-1 MSD

Matrix: Water

Analysis Batch: 4120

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	16.4		25.0	41.69		mg/L		101	90 - 110	3	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-4150/1

Matrix: Water

Analysis Batch: 4150

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB 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

Matrix: Water

Analysis Batch: 4150

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	989.0		mg/L		99	80 - 120

Lab Sample ID: LCSD 880-4150/3

Matrix: Water

Analysis Batch: 4150

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	997.0		mg/L		100	80 - 120	1	10

Lab Sample ID: 880-3001-1 DU

Matrix: Water

Analysis Batch: 4150

Client Sample ID: TMW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	360		363.0		mg/L		0.8	10

Eurofins Xenco, Midland

## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
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 Batch
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	

Eurofins Xenco, Midland

## Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

## Client Sample ID: TMW-1

Date Collected: 06/10/21 10:23

Date Received: 06/14/21 08:37

## Lab Sample ID: 880-3001-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 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

Date Collected: 06/10/21 12:00

Date Received: 06/14/21 08:37

## Lab Sample ID: 880-3001-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 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

Date Collected: 06/10/21 11:05

Date Received: 06/14/21 08:37

## Lab Sample ID: 880-3001-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 16:22	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 15:56	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-4

Date Collected: 06/11/21 10:50

Date Received: 06/14/21 08:37

## Lab Sample ID: 880-3001-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 16:48	MR	XEN MID
Total/NA	Analysis	300.0		20			4120	06/15/21 16:18	CH	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

Date Collected: 06/10/21 12:26

Date Received: 06/14/21 08:37

## Lab Sample ID: 880-3001-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 17:13	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:25	CH	XEN MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	4150	06/16/21 18:56	SC	XEN MID

Eurofins Xenco, Midland

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  
Date Collected: 06/10/21 00:00  
Date Received: 06/14/21 08:37

Lab Sample ID: 880-3001-6  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	4074	06/14/21 18:57	MR	XEN MID
Total/NA	Analysis	300.0		5			4120	06/15/21 16:32	CH	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

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## Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache - EBDU #37

Job ID: 880-3001-1  
SDG: 19-0112-49

### Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8021B		Water	Total BTEX

Eurofins Xenco, Midland

## 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

## 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 &amp; Associates, Inc.

Job Number: 880-3001-1

SDG Number: 19-0112-49

Login Number: 3001

List Number: 1

Creator: Phillips, Kerianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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**District II**

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**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 17562

**COMMENTS**

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	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

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**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: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 17562
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	8/27/2021



May 8, 2024

VIA EMAIL: [RosaM.Romero@emnrd.nm.gov](mailto:RosaM.Romero@emnrd.nm.gov)  
[Michael.Buchanan@emnrd.nm.gov](mailto:Michael.Buchanan@emnrd.nm.gov)  
[mike.batcher@emnrd.nm.gov](mailto:mike.batcher@emnrd.nm.gov)

Ms. Rosa M. Romero  
Environmental Bureau Chief  
State of New Mexico – Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Apache Corp., EBDU #37 Incident NDHR1922141227 (1RP-5636) - Scope of Work for Additional Investigation, Lea County, New Mexico**

Dear Ms. Romero:

Larson & Associates, Inc. (LAI), on behalf of Apache Corp. (Apache), has prepared this scope of work (SOW) for the produced water release at the East Blinbry 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°. Mr. William "Bill" Stevens is the surface owner. Figure 1 presents a topographic map.

The SOW is in response to video/telephone calls on April 1, 2024 and May 1, 2024, between Apache, New Mexico Oil Conservation Division (NMOCD) and LAI representatives. During the call on April 1, 2024, NMOCD requested Apache to:

- Install additional monitoring well (TMW-28) north of TMW-11 and TMW-12 to establish the northern (upgradient) limit or background for chloride in groundwater.
- Install additional monitoring well south (TMW-25) of TMW-23 and TMW-24 to establish the southern extent for chloride in groundwater.
- Determine the source for chloride (5,850 mg/L) reported in the groundwater sample from monitoring well TMW-17.
- Implement measures to prevent further impact to the onsite water well (windmill) from chloride.
- Collect and analyze groundwater samples from the water well (windmill) for the entire list of constituents in 20.6.2.3102 NMAC including Human Health Standards in A (1) (a) through (tt), Other Standards for Domestic Water Supply in B. (1) through (10), and Standards for Irrigation Use in C (1) through (5).

On May 1, 2024, the following was requested:

- Install a monitoring well (TMW-29) north (up gradient) from monitoring well TMW-13.
- Update the analytical data table with complete analysis of the groundwater sample collected from the windmill on April 3, 2024.
- Collect and analyze groundwater samples for barium from monitoring wells TMW-1, TMW-3, and TMW-21.

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## **Background**

On July 14, 2019, Apache reported a produced water release from a flowline at a pipeline junction located about 720 feet east from EBDU 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. Appendix A presents the initial C-141.

The spill area was remediated according to a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinbry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico", submitted to the NMOCD October 29, 2019. On December 23, 2019, NMOCD approved the remediation plan addendum based on a telephone call on December 20, 2019 (Bradford Billings) with following conditions:

- Installed four (4) monitoring wells (TMW-1 through TMW-4).
- Performed quarterly (4 times per year) groundwater monitoring from monitoring wells and a water well (windmill).

In all, Apache has spent over \$750,000 to ensure the remediation was thorough and properly done in accordance with the NMOCD approved plan.

## **Investigations**

Between November 28 and 30, 2022, at NMOCD's request, Apache installed two (2) monitoring wells (TMW-5 and TMW-6) east of the playa where the release terminated. Soil samples were collected from seven (7) bores including BH-1, BH-3, BH-4, and BH-5 located in the playa with the remaining bores (BH-6, BH-7, and BH-8) located in the release corridor north of the playa.

Following a conference call with NMOCD On April 4, 2023, Apache installed four (4) additional monitoring wells (TMW-7 through TMW-10) near the sources for the release (TMW-7), north of the playa (TMW-8) and west (TMW-9) and east (TMW-10) of TMW-1 near the south end of the playa. Figure 2 presents an aerial map for the soil borings and monitoring wells.

Apache requested LAI to prepare a plan for installing additional monitoring wells following a call with NMOCD on October 30, 2023. The plan was submitted to NMOCD on November 10, 2023. Between November 29, 2023 and December 13, 2023, Scarborough Drilling Inc. (SDI), under LAI oversight, installed fourteen (14) additional monitoring wells (TMW-11 through TMW-24) at locations specified in the scope of work (SOW) approved by NMOCD on November 14, 2023. NMOCD specified a monitoring well (TMW-17) be installed halfway between existing monitoring well TMW-5 and proposed monitoring well TMW-15. SDI drilled the inner ring of monitoring wells (TMW-11 through TMW-16) prior to installing the outer ring of monitoring wells (TMW-18 through TMW-22) based on laboratory analysis of groundwater samples for chloride. Two (2) additional wells (TMW-23 and TMW-24) installed south of TMW-18 and TMW-19 based on field chloride tests. Figure 2 presents the monitoring well locations. Appendix B presents NMOCD communications. Appendix C presents the laboratory chloride analysis.

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SDI installed the monitoring wells in 5-inch diameter borings that were advanced with an air rotary rig between about sixty (60) feet (TMW-24) and eighty-nine (89) feet bgs. The monitoring wells were constructed in accordance with ASTM Designation: D5092 - Reapproved 2010 (*Standard Practice for Design and Installation of Groundwater Monitoring Wells*) with 2-inch diameter schedule 40 PVC casing and twenty (20) feet of 0.010-inch factory slotted screen that was positioned above and below the groundwater level observed during drilling. Graded silica sand was placed in the annuls between the borehole and well to about 2-feet above the screen. The remainder of the annulus was filled to about 1-foot bs with bentonite chips and hydrated with potable water. The wells were secured with locking steel covers anchored concrete. Land Point Surveying, Midland, Texas, a State of New Mexico licensed professional land surveying firm, surveyed the wells for location and elevation including ground surface and top of casing (TOC). Drill cuttings were examined based on the Unified Soil Classification System (USCS) according to ASTM Designation: D2487 (*Standard Practice for Classification of Soils for Engineering Purposes*). Table 1 presents the monitoring well drilling and completion details. Appendix D presents the lithologic logs and well completion records.

Monitoring wells TMW-20 through TMW-24 terminated in silty clay (red bed) of the Triassic-age Chinle Formation (Dockum Group) between about sixty-three (63) feet bgs (TMW-24) and seventy-eight (78) feet bgs (TMW-20). An unconformity occurs between the silty clay (Chinle Formation) and overlying Ogallala Formation, consisting of fine-to-fine grained quartz sand. There are few distinctions between the Ogallala Formation and overlying Blackwater Draw Formation with color being a distinction from reddish yellow to reddish orange. The sand thickness increases from east to west towards Monument Draw and is mostly controlled by the eroded Chinle Formation. A layer of carbonate-indurated sand (caliche) likely caused where a zone of illuviation where carbonate dust accumulated from surface transportation by meteoric water movement, occurs above the sand and extends from near the surface and to about twenty (20) feet bgs. Figure 3 presents an aerial drawing showing the monitoring well locations lines of geological cross sections. Figure 3a through Figure 3d present the geological cross sections.

On December 20 and 21, 2023, groundwater was recorded in the Ogallala Formation between about 46.91 feet bgs (TMW-1) and 65.97 feet bgs (TMW-22). The saturated thickness ranged from about 6.97 feet (TMW-24) to greater than 26.22 feet (TMW-18). The groundwater potentiometric surface elevation ranged between 3,365.57 feet above mean sea level (MSL) at TMW-12 (up gradient) and 3,362.33 feet above MSL at TMW-24 (down gradient). The groundwater flow direction was generally from north to south at a gradient of about 0.003 feet per foot. Figure 4 presents the groundwater saturated thickness map for December 20 and 21, 2023. Figure 5a presents the groundwater potentiometric surface map for December 20 and 21, 2023.

On March 14, 2024, groundwater was recorded in the Ogallala Formation between about 46.78 feet bgs (TMW-1) and 65.96 feet bgs (TMW-22). Between December 21, 2023 and March 14, 2024, depth to groundwater decreased (rising aquifer conditions) between 0.01 feet (TMW-22) and 1.38 feet (TMW-11). During this same period, depth to groundwater increased 0.06 feet (TMW-05) and 0.98 feet (TMW-19) which represents falling aquifer conditions. The rising and lowering groundwater conditions are likely the result of seasonal fluctuation in the aquifer. On March 14, 2024, the groundwater potentiometric surface elevation ranged between 3,365.65 feet above mean sea level (MSL) at TMW-12 (up gradient) and 3,362.84 feet above MSL at TMW-23 (down gradient). The groundwater flow direction was generally from north to south at a gradient of about 0.003 feet per foot. Groundwater mounding near well TMW-4 from a slightly elevated groundwater potentiometric surface elevation causes groundwater to flow to the west, east and south. A slight reversal in the groundwater flow direction was observed in the vicinity of TMW-19 and TMW-24, from increased (rising) groundwater

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potentiometric surface elevation in TMW-24 (3,362.40 feet) and decreased (falling) groundwater potentiometric surface elevation at TMW-19 (3,361.88 feet) causes groundwater to flow towards TMW-19. Figure 5b presents the groundwater potentiometric surface map for March 14, 2024.

Groundwater samples were collected from monitoring wells with the TMW-1 through TMW-24 and the windmill on December 20 and 21, 2023 and March 14, 2024. Duplicate samples were collected for laboratory quality assurance and quality control (QA/QC) from wells TMW-17 and TMW-2 on December 20 and 21, 2023, respectively, from TMW-3 and TMW-14 on March 14, 2024. The groundwater samples, except from the windmill, were collected using the low stress or low flow method, according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017). The low stress or low flow method where an environmental pump was submerged near the middle of the water column and the well was pumped at a low rate until environmental parameters stabilized. Groundwater samples were collected from the discharge of the dedicated disposable Tygon® tubing. Groundwater samples from the windmill were collected from the end of the discharge pipe before the stock tank. The Tygon® 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 delivered under preservation and chain of custody to Eurofins Xenco Laboratories, Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA SW-846 Method 8021B, chloride by EPA Method 300 and total dissolved solids (TDS) by Method SM2540C. Table 2 presents the laboratory analytical data summary. Appendix E presents the laboratory reports.

BTEX compounds were not reported in the groundwater samples at concentrations above the analytical reporting limits (RP) in samples including duplicate samples collected on December 20 and 21, 2023 or March 14, 2024.

On December 20 and 21, 2023, chloride was reported in groundwater samples from monitoring wells TMW-1 through TMW-24 and the windmill at concentrations from 37.3 mg/L in monitoring well TMW-10 to 5,850 mg/L in groundwater from monitoring well TMW-17. The background chloride concentration was 463 mg/L (TMW-12). The chloride concentration in the windmill sample was 409 mg/L. On March 14, 2024, chloride was reported in groundwater samples at concentrations from 17.0 mg/L (TMW-10) to 5,680 mg/L (TMW-17). The background chloride concentration was 448 mg/L from monitoring well TMW-12. The chloride concentration in the windmill sample was 471 mg/L. Figure 6a and Figure 6b present isopleth maps for chloride concentrations in groundwater samples collected on December 20 and 21, 2023 and March 14, 2024, respectively.

On December 20 and 21, 2023, TDS was reported in groundwater samples from the monitoring wells and windmill at concentrations from 404 mg/L (TMW-9) and 10,300 mg/L (TMW-17). The background TDS concentration was 1,520 mg/L (TMW-12). The TDS concentration in the windmill sample was 1,010 mg/L. On March 14, 2024, chloride was reported in at concentrations from 373 mg/L (TMW-9) to 8,930 mg/L (TMW-17). The background TDS concentration was 1,390 mg/L from monitoring well TMW-12. The TDS concentration in the windmill sample was 1,080 mg/L. Figure 7a and Figure 7b present isopleth maps for TDS concentrations in groundwater samples collected on December 20 and 21, 2023 and March 14, 2024, respectively.

On April 3, 2024, at the request of NMOCD, Apache requested LAI personnel to collect a groundwater sample from the windmill for analysis of New Mexico Water Quality Control Commission (WQCC) human health, domestic water quality and irrigation "3103" parameters in 20.6.2.3103 NMAC. The sample was collected from the discharge pipe near the windmill

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and delivered under preservation and chain of custody to Xenco laboratories located in Midland, Texas. Table 3 presents the laboratory data summary. Appendix F presents the laboratory reports.

The laboratory reported barium (2.18 mg/L) and chloride (440 mg/L) above the WQCC human health and domestic water quality standards of 2.0 mg/L and 250 mg/L, respectively, on April 3, 2024.

On May 2, 2024, following the video/telephone call on May 1, 2024, LAI personnel collected groundwater samples from monitoring wells TMW-1, TMW-3, TMW-21, and windmill. The samples were delivered under preservation and COC to Xenco, which analyzed the samples for dissolved barium by EPA SW-846 Method 6020B. Table 2 presents the monitoring well and windmill analytical data summary. According to 20.6.2.3103, "the standards apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication *methods for chemical analysis of water and waste of the U.S. environmental protection agency*", with the exception that standards for mercury, organic compounds and non-aqueous liquids shall apply to the total nonfiltered concentrations of the contaminants". The initial sample from the windmill (April 3, 2024) was an unfiltered (total) analysis and therefore not valid for comparison to the standards in 20.6.2.3103NMAC. Samples collected on May 2, 2024, were filtered by the laboratory, and represent dissolved barium concentrations which are below the NMWQCC human health standard of 2.0 mg/L in 20.6.2.3103A(1) NMAC. The dissolved barium concentrations reported between 0.0299 mg/L (TMW-3) and 0.445 mg/L (TMW-1). The dissolved barium concentration in the windmill sample on May 2, 2024, was 0.220 mg/L.

Apache does not believe the any additional analysis is necessary and will discontinue collecting samples from the windmill for the "3103" parameters.

### **Scope of Work**

Apache suspects the source of the chloride in groundwater from TMW-17 to be the same source for the spill. The source may have begun as an undetected pin-hole leak that migrated vertically to groundwater resulting in a density-driven chloride plume that migrated southward along the lower contact with the Triassic Dockum Group. To investigate this possible source scenario, boring BH-9 will be drilled near the junction box and monitoring well TMW-7. The soil samples will be collected with an air rotary rig beginning at ground surface and every five (5) feet to approximately fifty-five (55) feet bgs. The samples will be submitted to Xenco under chain of custody and analyzed for chloride by EPA Method 300. Figure 8 presents the approximate boring location.

Apache will install five (5) additional monitoring wells (TMW-25 through TMW-29) at locations shown on Figure 8a and Figure 8b. Monitoring well TMW-25 will be installed about 500 feet south of TMW-23 and TMW-24 to establish the downgradient limit of chloride in groundwater. Monitoring well TMW-26 will be installed about halfway between TMW-20 and TMW-23 to establish the downgradient and cross gradient concentration of chloride in groundwater. Monitoring well TMW-27 will be installed about 275 feet north-northwest of TMW-17 to confirm if chloride in groundwater is migrating southward from the junction box and is a suspect source for the release. This well will be completed as a recovery test well further described below. Monitoring well TMW-28 will be installed about 375 feet north of TMW-11 and TMW-12 to establish the up gradient or background chloride concentration in groundwater. Monitoring well TMW-29 will be installed about 375 feet north of TMW-13 to evaluate an additional source for the chloride and to establish the up gradient or background chloride concentration in groundwater.

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Applications will be prepared and submitted to the State of New Mexico Office of the State Engineering (NMOSE) for approval and prior to installing monitoring wells TMW-25 through TMW-29. The wells will be installed about twenty (20) feet into the uppermost groundwater unit calculated to occur at depths between about fifty-five (55) feet at TMW-27 and TMW-28 and sixty (60) feet bgs at the remaining locations. Drilling will terminate about two (2) feet into the lower confining unit (Triassic Dockum Group), if encountered. The wells will be completed in a nominal 5-inch diameter bore except MW-27 that will be advanced with an air rotary rig. Potable water may be introduced during drilling to remove drill cuttings from the boreholes. The lithologies will be described and logs prepared according to ASTM D-2487 (*Standard Practice for Classification of Soils for Engineering Purposes*). The wells will be secured with locking steel covers anchored into a concrete apron measuring about 3 by 3 feet and about 4-inches thick. Land Point Surveying, Midland, Texas, will survey the wells for position and elevation including natural ground and top of casing (TOC). The following is a summary of the calculated depth to groundwater, proposed drilling and well screen depths:

Monitoring Well	Depth to Groundwater, Feet bgs	*Well Depth, Feet bgs	Well Screen Interval, Feet bgs
TMW-25	60	80	60 – 80
TMW-26	60	80	60 – 80
TMW-27	55	95	75 - 95
TMW-28	55	75	55 – 75
TMW-29	60	80	60 - 80

\*Drilling will terminate about 2 feet into the lower confining unit (red bed) if encountered.

The wells will be developed by pumping with an electric submersible or mechanical pump to remove sediment disturbed during drilling and well installation. The pump will be fitted with new polyethylene discharge tubing that will be discarded between wells. The foot valve will be thoroughly cleaned between wells with a solution of laboratory-grade detergent (Alconox®) and rinsed distilled water. Purged water and sediment will be captured in 55-gallon drums for disposal in a NMOCD permitted Class II commercial salt-water disposal (SWD) well.

Groundwater will be allowed to recover to near the pre-development level before collecting groundwater samples. Depth to groundwater will be gauged at TOC with an electronic water level meter. Groundwater samples will be collected from each monitoring well including the existing monitoring wells (TMW-1 through TMW-24) using the low stress or low flow method according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low rate until environmental parameters stabilize. Groundwater samples were collected from discharge through disposable Tygon® tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and Alconox® and rinsed with distilled water. The sample from the windmill will be collected from the pump discharge pipe. The samples will be transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody Xenco in Midland, Texas. Two (2) duplicate samples will be collected for laboratory quality assurance and quality control (QA/QC). Xenco will analyze the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, cations (calcium, magnesium, potassium, and sodium) by Method SW-6020B, anions (chloride and sulfate) by EPA Method 300, alkalinity by EPA Method M-2320B, and total dissolved solids (TDS) by EPA Method M-2540C.

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## **Remediation**

Apache proposes to complete monitoring well TMW-27 as a remediation test well (RW-1). The well will be installed in an appropriately sized borehole that will be advanced using air and water rotary drilling methods to near the top of the lower confining unit (red bed) estimated to occur between about eighty-five (85) and ninety-five (95) feet bgs. Potable water will be used to remove drill cuttings from the boreholes. The well will be constructed with a 5-inch schedule 40 PVC casing and screen with glued joints as no organic compounds (i.e., BTEX) have been detected in groundwater samples. The well screen approximately 20 to 25 feet in length will be 0.020-inch factory slotted and will be positioned near the bottom of the borehole. The well screen will be surrounded with graded silica sand or gravel compatible with the screen opening (0.020 inches) and will extend from near the bottom of the well to about 2 feet above the screen. The remaining annulus above the sand will be filled with bentonite chips to approximately 1-foot bgs and hydrated with potable water. An electric submersible pump will be used to evaluate the well yield and radius of influence during a pumping test. Water from drilling and pumping the well will be captured in portable (frac) tanks and disposed of in an NMOCD permitted commercial saltwater disposal (SWD) well. Options for managing the pump discharge during remediation will be evaluated based on the pumping test. Apache will work with the State of New Mexico Office of the State Engineer (OSE) for authorization to produce water from the recovery well for the remediation project. Apache will conduct semi-annual (twice yearly) monitoring of groundwater in the monitoring wells (TMW-1 through TMW-28 and recovery well (RW-1). The samples will be analyzed for BTEX, chloride, and TDS. It is anticipated that the groundwater remediation system will be operated between approximately 3 and 5 years. Apache will submit the remediation program results to the NMOCD in annual (once per year) reports that will include a summary of water volumes recovered and treated, laboratory analytical data summary tables, groundwater potentiometric surface maps, isopleth maps for chloride and TDS, and laboratory reports. Apache will provide notification to NMOCD and landowner at least 7 days in advance of each event, excluding weekends.

Apache will discontinue monitoring groundwater from the windmill for WQCC human health, domestic water quality and irrigation standards in 20.6.2.3103, based on only barium (2.18 mg/L) and chloride (440 mg/L) being detected above the WQCC human health and domestic water quality standards of 2.0 mg/L and 250 mg/L, respectively, on April 3, 2024.

Your approval of this SOW for additional investigation and proposed remediation test well is requested. Please contact Barrett Bole with Apache at (432) 818-1108 or email [Barrett.Bole@apachecorp.com](mailto:Barrett.Bole@apachecorp.com), Bruce Baker with Apache at (432) 631-6982 or email [Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com), Daniel St. Germain at (432) 664-5357 or [dstgermain@laenvironmental.com](mailto:dstgermain@laenvironmental.com) or me to discuss any questions you may have.

Respectively,

**Larson & Associates, Inc.**



Mark J. Larson, P.G.  
President/Sr. Hydrogeologist  
Certified Professional Geologist #10490

Encl.

507 North Marienfeld, Suite 202 ♦ Midland, Texas 79701 ♦ Ph. (432) 687-0901 ♦ Fax (432) 687-0456

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## **Tables**

Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-1	9/19/2019	65.85	62.50	2	3,411.21	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	16.54	3,365.26
									12/07/2020	49.42	46.06	16.43	3,365.15
									03/11/2021	49.41	46.05	16.44	3,365.16
									06/10/2021	49.67	46.31	16.18	3,364.90
									10/11/2021	50.90	47.54	14.95	3,363.67
									12/22/2021	49.95	46.59	15.90	3,364.62
									03/01/2022	49.92	46.56	15.93	3,364.65
									05/23/2022	50.25	46.89	15.60	3,364.32
									08/16/2022	50.64	47.28	15.21	3,363.93
									12/15/2022	50.18	46.82	15.67	3,364.39
									03/14/2023	50.16	46.80	15.69	3,364.41
									06/22/2023	47.09	43.73	18.76	3,367.48
									09/06/2023	50.31	46.95	15.54	3,364.26
									12/21/2023	50.27	46.91	15.58	3,364.30
									03/14/2024	50.14	46.78	15.71	3,364.43
TMW-2	9/19/2019	70.85	80.00	2	3,421.30	47.50 - 67.17	2.86	3,424.16	09/23/2019	55.80	52.94	15.05	3,368.36
									12/26/2019	57.50	54.64	13.35	3,366.66
									09/30/2020	58.01	55.15	12.84	3,366.15
									12/07/2020	58.08	55.22	12.77	3,366.08
									03/11/2021	58.00	55.14	12.85	3,366.16
									06/10/2021	58.12	55.26	12.73	3,366.04
									10/11/2021	58.54	55.68	12.31	3,365.62
									12/22/2021	58.50	55.64	12.35	3,365.66
									03/01/2022	58.48	55.62	12.37	3,365.68

Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									05/23/2022	58.62	55.76	12.23	3,365.54
									08/16/2022	58.98	56.12	11.87	3,365.18
									12/15/2022	58.76	55.90	12.09	3,365.40
									03/14/2023	58.70	55.84	12.15	3,365.46
									06/22/2023	58.27	55.41	12.58	3,365.89
									09/06/2023	59.05	56.19	11.80	3,365.11
									12/21/2023	58.95	56.09	11.90	3,365.21
									03/14/2024	58.86	56.00	11.99	3,365.30
TWM-3	9/29/2020	71.29	68.41	2	3,420.33	49.96 - 69.76	2.88	3,423.21	09/23/2019	--	--	--	--
									12/26/2020	--	--	--	--
									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
									06/10/2021	57.90	55.02	13.39	3,365.31
									10/11/2021	58.31	55.43	12.98	3,364.90
									12/22/2021	58.18	55.30	13.11	3,365.03
									03/01/2022	58.14	55.26	13.15	3,365.07
									05/23/2022	58.41	55.53	12.88	3,364.80
									08/16/2022	58.87	55.99	12.42	3,364.34
									12/15/2022	58.44	55.56	12.85	3,364.77
									03/14/2023	58.36	55.48	12.93	3,364.85
									06/22/2023	57.53	54.65	13.76	3,365.68
									09/06/2023	58.85	55.97	12.44	3,364.36
									12/21/2023	58.61	55.73	12.68	3,364.60
									03/14/2024	58.47	55.59	12.82	3,364.74
TMW-4	9/29/2020	73.25	70.09	2	3,420.03	49.96 - 69.76	3.16	3,423.19	09/23/2019	--	--	--	--

Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									12/26/2019	--	--	--	--
									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
									06/10/2021	57.60	54.44	15.65	3,365.59
									10/11/2021	57.99	54.83	15.26	3,365.20
									12/22/2021	57.90	54.74	15.35	3,365.29
									03/01/2022	57.87	54.71	15.38	3,365.32
									03/29/2022	57.89	54.73	15.36	3,365.30
									05/23/2022	58.05	54.89	15.20	3,365.14
									08/16/2022	58.48	55.32	14.77	3,364.71
									12/15/2022	58.15	54.99	15.10	3,365.04
									03/14/2023	58.07	54.91	15.18	3,365.12
									06/22/2023	57.28	54.12	15.97	3,365.91
									09/06/2023	58.45	55.29	14.80	3,364.74
									12/20/2023	58.31	55.15	14.94	3,364.88
									03/14/2024	58.19	55.03	15.06	3,365.00
TMW-5	11/28/2022	78.59	75.50	2	3,418.91	54.37 - 74.32	2.95	3,421.86	12/15/2022	57.91	54.96	20.68	3,363.95
									03/14/2023	57.27	54.32	21.32	3,364.59
									06/22/2023	55.63	52.68	22.96	3,366.23
									09/06/2023	57.63	54.68	20.96	3,364.23
									12/20/2023	57.49	54.54	21.10	3,364.37
TMW-6	11/28/2022	72.10	73.00	2	3,424.13	54.37 - 74.32	2.42	3,426.55	03/14/2024	57.55	54.60	21.04	3,364.31
									12/15/2022	62.17	59.75	9.93	3,364.38
									03/14/2023	62.08	59.66	10.02	3,364.47

Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									06/22/2023	61.41	58.99	10.69	3,365.14
									09/06/2023	61.95	59.53	10.15	3,364.60
									12/20/2023	61.88	59.46	10.22	3,364.67
									03/14/2024	61.79	59.37	10.31	3,364.76
TMW-7	6/13/2023	83.85	80.99	2	3,423.07	61.29 - 80.78	2.86	3,425.93	06/19/2023	60.35	57.49	23.50	3,365.58
									06/22/2023	63.34	60.48	20.51	3,362.59
									09/06/2023	60.98	58.12	22.87	3,364.95
									12/20/2023	60.91	58.05	22.94	3,365.02
									03/14/2024	60.81	57.95	23.04	3,365.12
TMW-8	6/12/2023	76.55	73.75	2	3,417.28	53.83 - 73.74	2.80	3,420.08	06/20/2023	54.04	51.24	22.51	3,366.04
									06/22/2023	54.02	54.00	22.53	3,366.06
									09/06/2023	55.39	52.59	21.16	3,364.69
									12/20/2023	55.23	52.43	21.32	3,364.85
									03/14/2024	55.12	52.32	21.43	3,364.60
TMW-9	6/13/2023	71.90	69.03	2	3,414.62	49.41 - 68.72	2.87	3,417.49	06/21/2023	51.11	48.24	20.79	3,366.38
									06/22/2023	51.14	48.27	20.76	3,366.35
									09/06/2023	53.66	50.79	18.24	3,363.83
									12/21/2023	53.55	50.68	18.35	3,363.94
									03/14/2024	53.45	50.58	18.45	3,364.76
TMW-10	6/14/2023	72.76	69.81	2	3,415.26	49.68 - 68.99	2.95	3,418.21	06/20/2023	51.57	48.62	21.19	3,366.64
									06/22/2023	51.61	48.66	21.15	3,366.60
									09/06/2023	54.21	51.26	18.55	3,364.00
									12/21/2023	54.12	51.17	18.64	3,364.09
									03/14/2024	54.02	51.07	18.74	3,364.19
TMW-11	11/29/2023	76.75	73.95	2	3,421.56	53.30 - 73.27	2.80	3,424.35	12/21/2023	59.92	57.12	16.83	3,364.43
									03/14/2024	58.85	56.05	17.90	3,365.50

Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-12	11/30/2023	85.73	82.81	2	3,424.30	60.16 - 82.13	2.92	3,427.22	12/21/2023	61.65	58.73	24.08	3,365.57
									03/14/2024	61.57	58.65	24.16	3,365.65
TMW-13	12/4/2023	86.67	83.90	2	3,426.21	63.24 - 83.21	2.77	3,428.98	12/20/2023	63.75	60.98	22.92	3,365.23
									03/14/2024	63.68	60.91	22.99	3,365.30
TMW-14	12/1/2023	88.64	85.61	2	3,426.78	64.96 - 84.93	2.76	3,429.54	12/20/2023	65.02	62.26	23.62	3,364.52
									03/14/2024	64.99	62.23	23.38	3,364.55
TMW-15	11/30/2023	83.14	79.62	2	3,423.18	58.97 - 78.94	2.79	3,425.97	12/20/2023	61.79	59.00	21.35	3,364.18
									03/14/2024	61.71	58.92	58.92	3,364.26
TMW-16	11/29/2023	84.82	81.79	2	3,420.73	59.14 - 81.11	2.92	3,423.65	12/20/2023	60.19	57.27	24.63	3,363.46
									03/14/2024	60.08	57.16	24.63	3,363.57
TMW-17	11/28/2023	84.68	81.46	2	3,422.52	60.81 - 80.78	3.16	3,425.68	12/20/2023	61.56	58.40	23.12	3,364.12
									03/14/2024	61.43	58.27	23.19	3,364.25
TMW-18	12/5/2023	88.57	85.05	2	3,422.29	64.57 - 84.51	3.32	3,425.61	12/20/2023	62.15	58.83	26.42	3,363.46
									03/14/2024	62.01	58.69	26.56	3,363.60
TMW-19	12/5/2023	83.50	80.31	2	3,420.79	59.66 - 79.63	2.99	3,423.78	12/20/2023	60.92	57.93	22.58	3,362.86
									03/14/2024	61.90	59.91	20.60	3,361.88
TMW-20	12/6/2023	77.50	74.52	2	3,426.46	53.90 - 73.87	2.88	3,429.34	12/20/2023	65.26	62.38	12.24	3,364.08
									03/14/2024	65.21	62.33	12.91	3,364.13
TMW-21	12/7/2023	74.22	71.80	2	3,429.87	51.15 - 71.12	2.33	3,432.20	12/20/2023	67.31	64.98	6.91	3,364.89
									03/14/2024	67.29	64.96	6.84	3,364.91
TMW-22	12/7/2023	73.01	70.02	2	3,431.29	49.37 - 69.34	2.89	3,434.17	12/20/2023	68.86	65.97	4.15	3,365.31
									03/14/2024	68.85	65.96	4.06	3,365.22



Table 1  
Monitoring Well Completion and Gauging Summary  
Apache Corporation, EBDU 37  
Incident ID: nDHR1922141227  
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-23	12/13/2023	72.34	69.35	2	3,421.28	48.69 - 68.66	2.95	3,424.23	12/20/2023	61.51	58.56	10.83	3,362.72
									03/14/2024	61.39	58.44	10.91	3,372.84
TMW-24	12/13/2023	63.02	59.98	2	3,418.54	39.33 - 59.30	3.20	3,421.74	12/20/2023	59.41	56.21	3.61	3,362.33
									03/14/2024	59.28	56.08	3.90	3,362.46

**Notes:**  
Monitoring wells installed by Scarborough Drilling Inc., Lamesa, Texas, with 2-inch schedule 40 PVC casing and screen.  
bgs: below ground surface  
TOC: top of casing  
AMSL: above mean sea level

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
Windmill	<sup>1</sup> 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	<sup>2</sup> 09/23/2019	--	--	--	--	--	--	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	--
	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	255	781	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	251	800	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	246	751	--
	<sup>4</sup> 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	256	828	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	222	738	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	256	1,190	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	198	508	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	401	1,130	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	276	852	--
	<sup>4</sup> 09/07/2023	<0.00200	<0.00200	<0.00400	<0.00400	350	981	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	409	1,010	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	471	1,080	--
	04/03/2024	--	--	--	--	--	--	2.18
	05/02/2024	--	--	--	--	--	--	0.220
TMW-1	<sup>2</sup> 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	--
	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	--
	<sup>3</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	17.5	358	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.3	391	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	13.2	343	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	26.0	369	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	50.3	404	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	21.4	216	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	41.9	358	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	275	845	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	277	830	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	156	662	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00404	136	551	--
	05/02/2024	--	--	--	--	--	--	0.445
TMW-2	<sup>2</sup> 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	293	1,000	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	267	1,050	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	263	1,030	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	284	1,270	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	282	1,030	--

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00400	<0.00400	256	1,070	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00400	<0.00400	239	940	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	195	985	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	211	1,060	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	248	1,120	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	270	1,050	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	264	1,100	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	249	992	--
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	192	967	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	211	949	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	233	944	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	202	955	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00200	245	1,100	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	175	808	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	233	940	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	229	1,020	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	240	1,010	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	242	1,020	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	234	959	0.0299
	05/02/2024	--	--	--	--	--	--	
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	987	2,300	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	834	1,960	--
	<sup>3</sup> 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	745	1,990	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	689	1,990	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	735	2,180	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	1,610	2,080	--
	<sup>4</sup> 03/29/2022	<0.00200	<0.00200	<0.00200	0.00700	547	1,930	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	522	1,930	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	684	2,000	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	486	1,940	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	703	1,850	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	673	1,900	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	625	1,810	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	598	1,750	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	580	1,750	--
TMW-5	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	1,170	4,950	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	2,890	5,200	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	2,790	5,380	--

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,700	4,590	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,320	4,250	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	2,980	5,360	--
TMW-6	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	941	3,160	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	2,270	3,200	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	1,550	3,260	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,630	2,820	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,570	3,070	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,500	3,280	--
TMW-7	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	1,770	3,980	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,870	3,880	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,770	3,720	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,740	3,690	--
TMW-8	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	974	2,410	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,130	2,470	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00200	709	1,840	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	655	1,830	--
TMW-9	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	18.0	373	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	41.8	390	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	37.3	404	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	29.3	373	--
TMW-10	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	9.89	525	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	67.0	514	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	114.0	666	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	17.0	405	--
TMW-11	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	350	1,190	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	318	1,090	--
TMW-12	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	463	1,520	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	448	1,390	--
TMW-13	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,730	3,680	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,690	3,480	--
TMW-14	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,500	5,140	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,810	2,820	--
TMW-15	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,120	3,870	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	2,160	3,400	--
TMW-16	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	85.5	495	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	43.0	380	--

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
TMW-17	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	5,850	10,300	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	5,680	8,930	--
TMW-18	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,050	6,430	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	908	1,650	--
TMW-19	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	927	1,860	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	553	1,070	--
TMW-20	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	287	927	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	385	937	--
TMW-21	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	262	885	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	310	902	0.0471
	05/02/2024	--	--	--	--	--	--	
TMW-22	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	270	939	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	342	918	--
TMW-23	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	895	1,980	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,020	2,020	--
TMW-24	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	271	1,050	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	330	1,060	--
DUP-1 (Windmill)	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	276	794	--
DUP-1 (Windmill)	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	278	908	--
DUP-1 (Windmill)	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	259	798	--
DUP-1 (Windmill)	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	256	781	--
DUP-1 (Windmill)	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	250	830	--
DUP-1 (Windmill)	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	243	796	--
Dup-1 (TMW-2)	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	297	1,010	--
Dup-2 (Windmill)	<sup>4</sup> 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	491	787	--
Dup-1 (Windmill)	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	215	729	--
Dup-1 (Windmill)	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	283	1,120	--
Dup-1 (TMW-5)	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	1,410	4,520	--
Dup-1 (Windmill)	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	413	1,130	--
Dup-1 (Windmill)	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	273	855	--
Dup-1 (TMW-5)	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	3,030	5,850	--
Dup-1 (TMW-17)	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	5,830	10,300	--
Dup-2 (TMW-2)	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	265	1,010	--
Dup-1 (TMW-3)	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	328	986	--
Dup-2 (TMW-14)	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,330	2,530	--

**Notes:**

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

&lt;: concentration is less than analytical method reporting limit (RL).

\*: NMWQCC Human Health Standard

\*\*: NMWQCC Domestic Water Quality Standard

## 20.6.2.3101 NMAC

Laboratory Analytical Data Summary  
Windmill, EBDU 37, Lea County, New Mexico

Page 1 of 2

20.6.2.3103 NMAC - Human Health Standards							
A.	Parameter	mg/L	4/3/2024	5/2/2024			
(a)	Antimony	0.006	<0.00400	--			
(b)	Arsenic	0.01	<0.00400	--			
(c)	Barium	2.0	<b>2.18</b>	*0.220			
(d)	Beryllium	0.004	<0.00200	--			
(e)	Cadmium	0.005	<0.00200	--			
(f)	Chromium	0.05	<0.00400	--			
(g)	Cyanide	0.2	<0.00500	--			
(h)	Fluoride	1.6	<1.00	--			
(i)	Lead	0.015	<0.00200	--			
(j)	Mercury (Total)	0.002	<0.000200	--			
(k)	Nitrate	10.0	<b>2.78</b>	--			
(l)	Nitrite	1.0	<0.100	--			
(m)	Selenium	0.05	<0.00200	--			
(n)	Silver	0.05	<0.00200	--			
(o)	Thallium	0.002	<0.00200	--			
(p)	Uranium	0.03	<b>0.00315</b>	--			
(q)	Radioactivity (combined R226 and R228)	5.0	<b>0.945</b>	--			
(r)	Benzene	0.005	<0.00100	--			
(s)	Polychlorinated biphenyls (PCB)	0.0005	<0.000262	--			
(t)	Toluene	1.0	<0.00100	--			
(u)	Carbon Tetrachloride	0.005	<0.00500	--			
(v)	1,2-dichloroethane (EDC)	0.005	<0.00100	--			
(w)	1,1-dichloroethylene	0.007	<0.00100	--			
(x)	Tetrachloroethylene (PCE)	0.005	<0.00100	--			
(y)	Trichloroethylene (TCE)	0.005	<0.00500	--			
(z)	Ethylbenzene	0.70	<0.00100	--			
(aa)	Xylenes (Total)	0.62	<0.0100	--			
(bb)	Methylene Chloride	0.005	<0.00500	--			
(cc)	Chloroform	0.1	<0.00100	--			
(dd)	1,1-Dichloroethane	0.025	<0.00100	--			
(ee)	Ethylene Dibromide (EDB)	0.00005	<0.00500	--			
(ff)	1,1,1-trichloroethane	0.20	<0.00100	--			
(gg)	1,1,2-trichloroethane	0.005	<0.00100	--			
(hh)	1,1,2,2-tetrachloroethane	0.01	<0.00100	--			
(ii)	vinyl chloride	0.002	<0.002	--			
(jj)	PAHs: total naphthalene plus monomethylnaphthalenes	0.03	<0.571	--			
(kk)	benzo-a-pyrene	0.0002	<0.571	--			
(ll)	cis-1,2-dichloroethene	0.07	<0.00100	--			
(mm)	trans-1,2-dichloroethene	0.1	<0.00100	--			
(nn)	1,2-dichloropropane (PDC)	0.005	<0.00500	--			
(oo)	Styrene	0.1	<0.00100	--			
(pp)	1,2-dichlorobenzene	0.60	<0.00100	--			
(qq)	1,4-dichlorobenzene	0.075	<0.00100	--			
(rr)	1,2,4-trichlorobenzene	0.07	<0.00500	--			
(ss)	pentachlorophenol	0.001	<1.14	--			
(tt)	atrazine	0.003	<0.500	--			

## 20.6.2.3101 NMAC

## Laboratory Analytical Data Summary

Windmill, EBDU 37, Lea County, New Mexico

Page 2 of 2

## 20.6.2.3103 NMAC - Standards for Domestic Water Supply

B.	Parameter	mg/L	4/3/2024				
(1)	Chloride	250.0	<b>440</b>	--			
(2)	Copper	1.0	<b>0.00509</b>	--			
(3)	Iron	1.0	<0.100	--			
(4)	Manganese	0.2	<0.00200	--			
(5)	Phenols	0.005	<0.0100	--			
(6)	Sulfate	600.0	<b>56.5</b>	--			
(7)	Total Dissolved Solids (TDS)	1,000.0	<b>1,000</b>	--			
(8)	Zinc	10.0	<b>0.00465</b>	--			
(9)	pH	6 - 9	7.3	--			
(10)	Methy tertiary-butyl ether (MTBE)	0.1	<0.00500	--			

## 20.6.2.3103 NMAC - Standards for Irrigation Use

B.	Parameter	mg/L	4/3/2024	5/2/2024			
(1)	Aluminum	5.0	<0.0200	--			
(2)	Boron	0.75	<b>0.154</b>	--			
(3)	Cobalt	0.05	<0.00200	--			
(4)	Molybdenum	1.0	<0.00200	--			
(5)	Nickel	0.2	<0.00200	--			

Notes: Analysis performed by Eurofins Xenco Laboratories, Midland, Texas, by EPA SW-846 Methods.

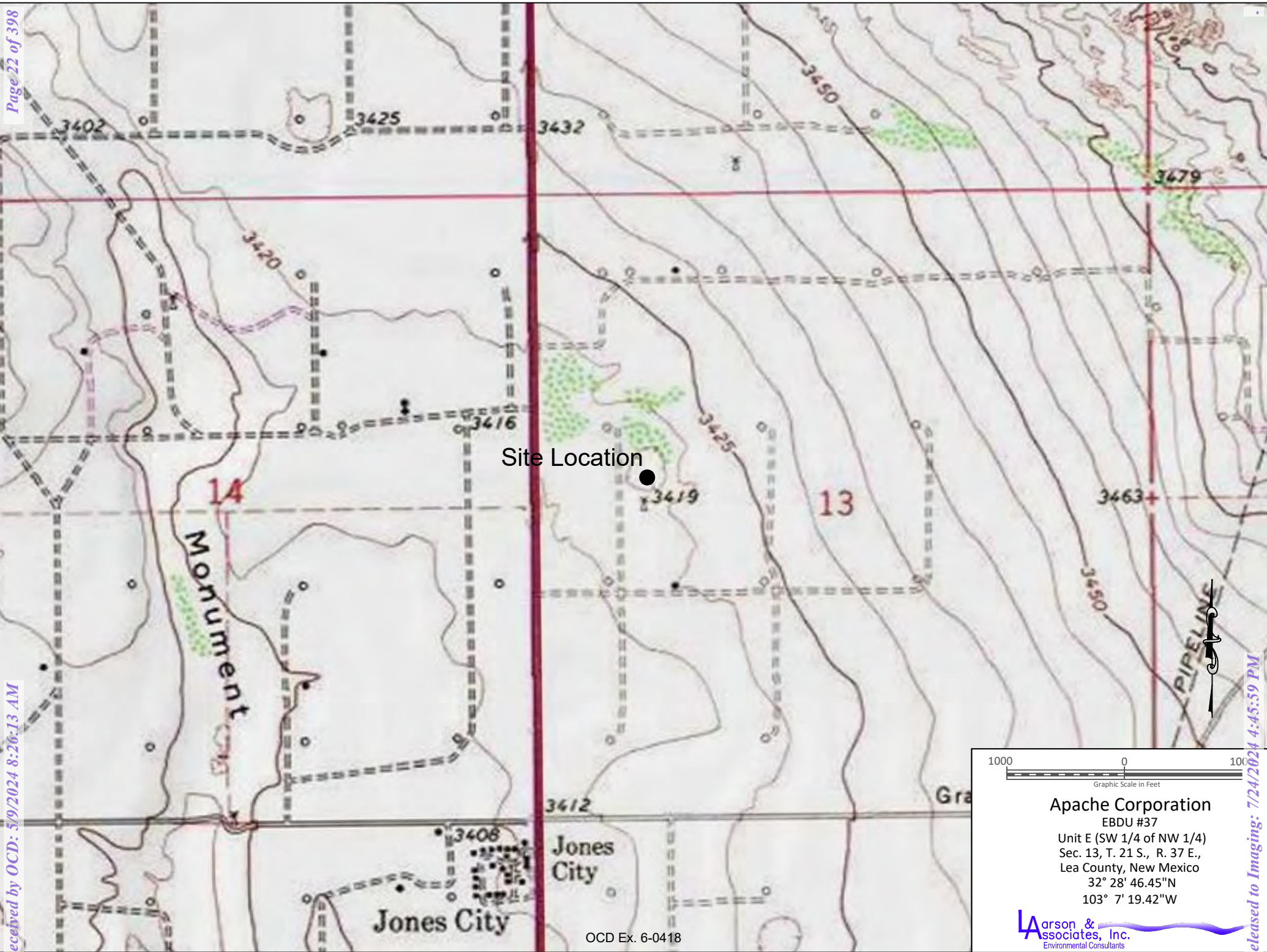
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)

&lt; Indicates analyte concentration is less than reporting limit (RL)

**Bold indicates analyte concentration exceeds the reporting limit (RL) but below the regulatory limit****Bold and highlighted indicates analyte concentration exceeds RL and regulatory limit**

## Figures





OCD Ex. 6-0418

1000 0 100  
Graphic Scale in Feet

**Apache Corporation**  
EBDU #37  
Unit E (SW 1/4 of NW 1/4)  
Sec. 13, T. 21 S., R. 37 E.,  
Lea County, New Mexico  
32° 28' 46.45"N  
103° 7' 19.42"W

**Larson & Associates, Inc.**  
Environmental Consultants

Figure 1 - Topographic Map



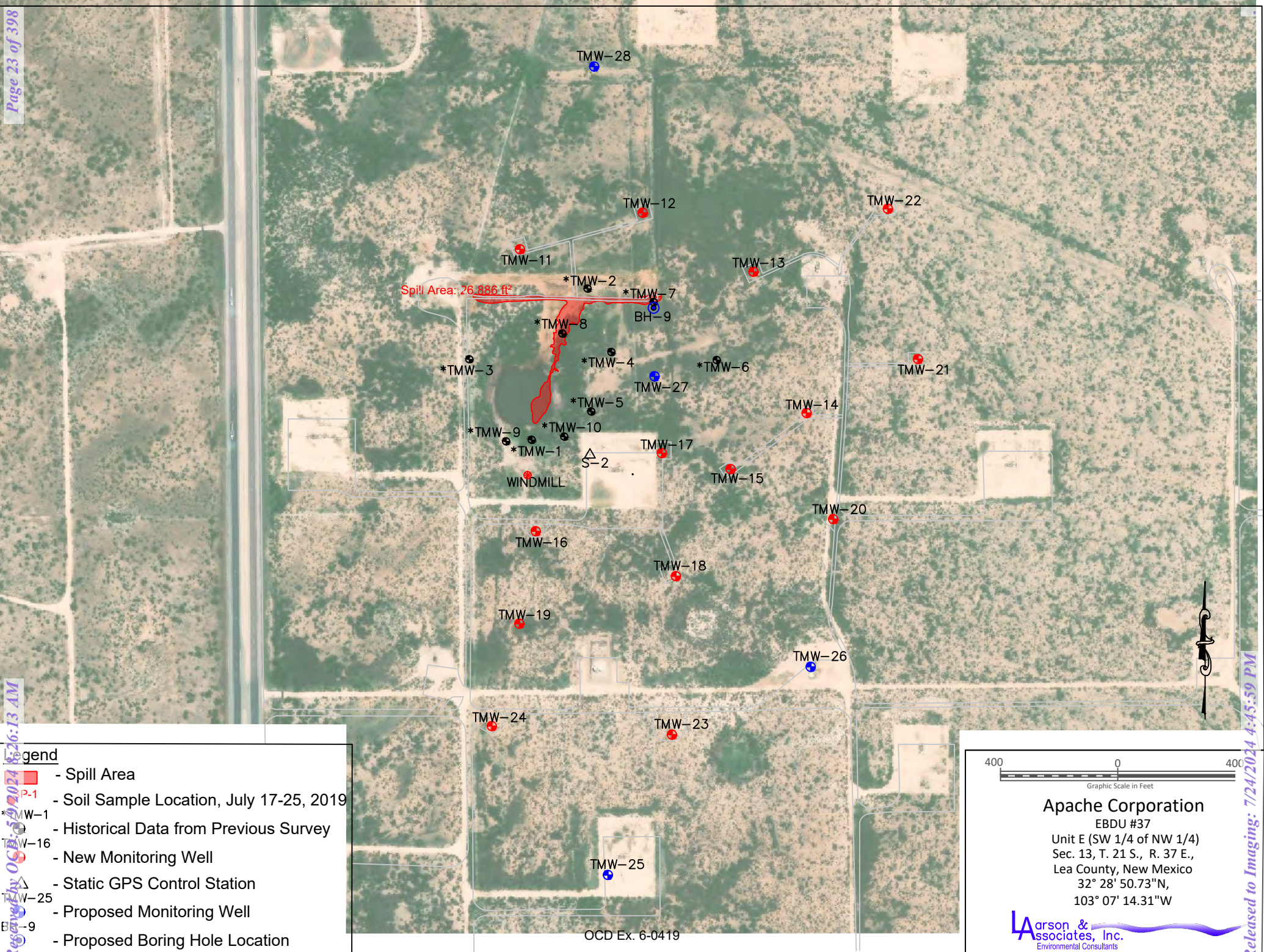
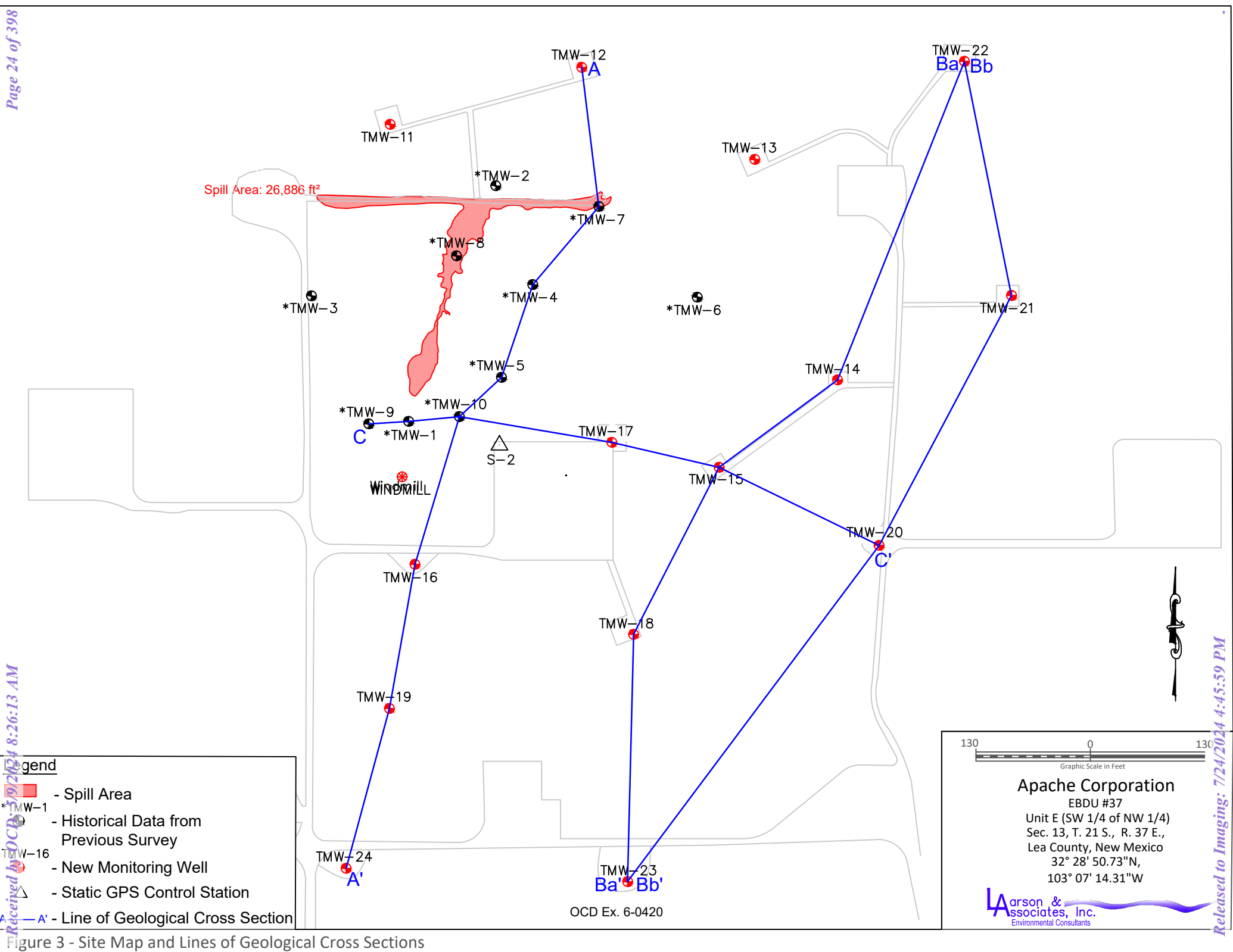
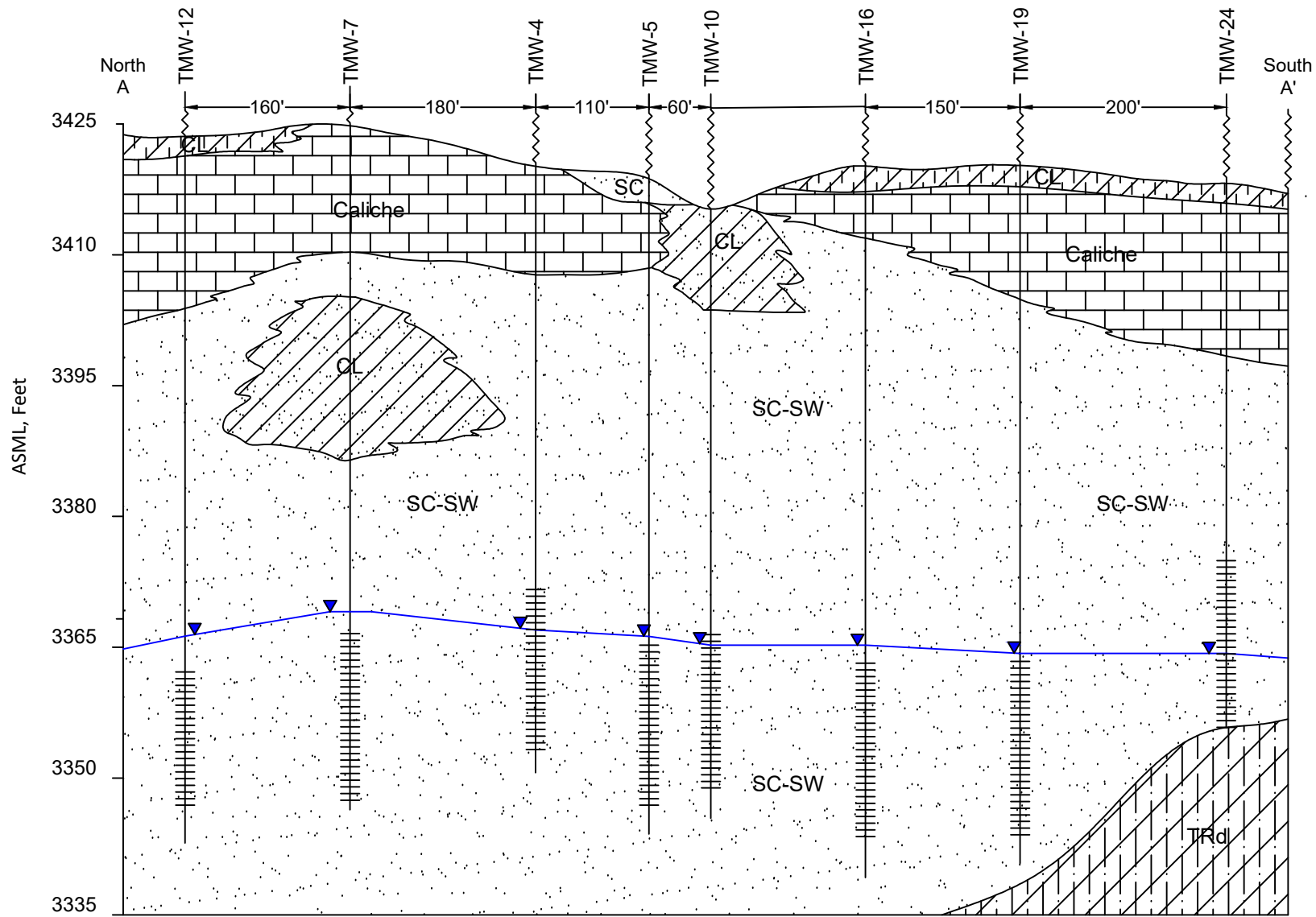


Figure 2 - Aerial Map Showing Monitoring Well Locations



Figure 3 - Site Map and Lines of Geological Cross Sections





### Legend

- Silty Clay/Top Soil (CL)
- Silty Clay (Triassic Chinle Fm.)
- Groundwater Potentiometric Surface, December 21, 2023
- Caliche
- Sand (SC-SW)
- Well Screen

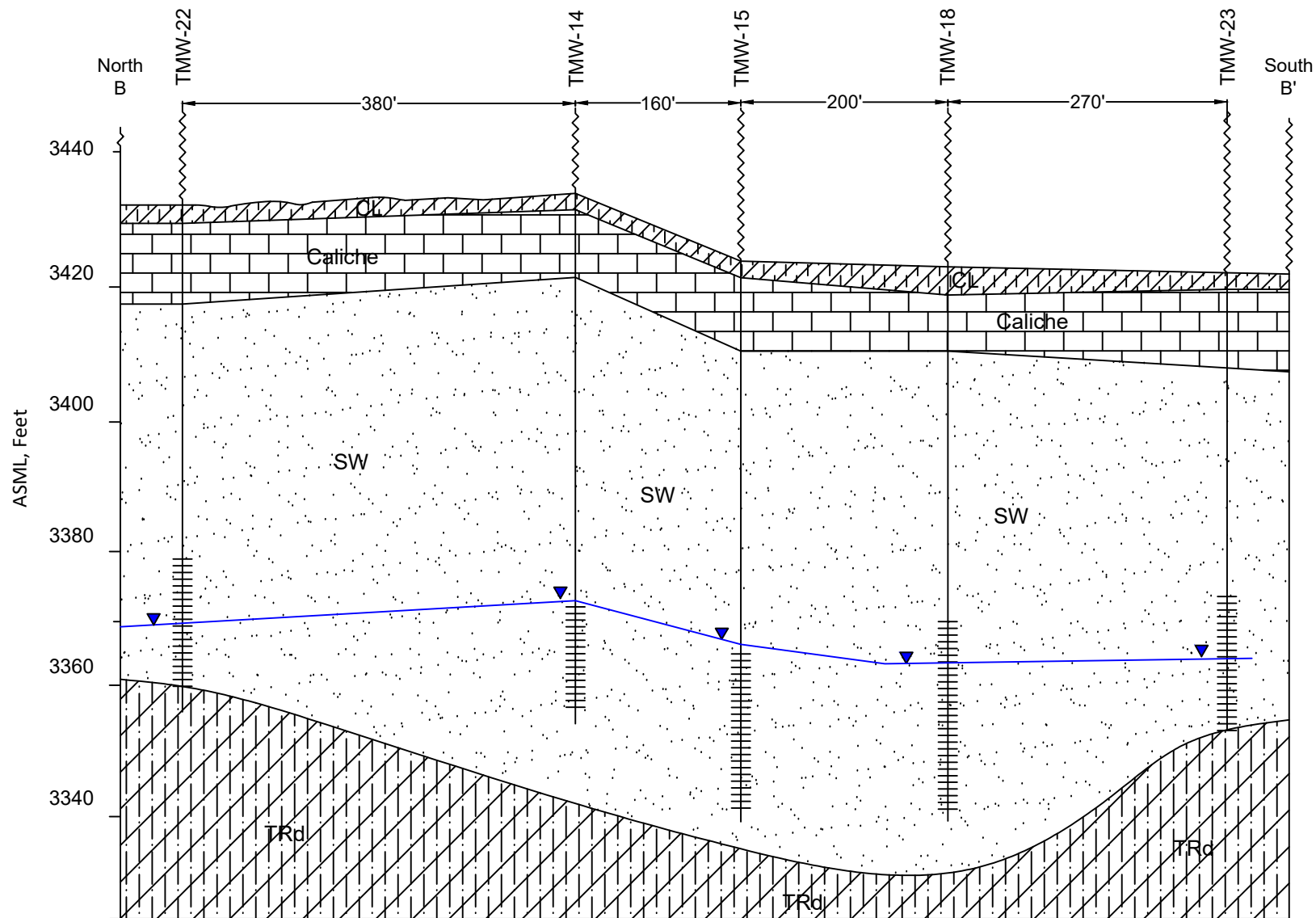
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 -Horizontal Scale: 1"=125'  
 -Vertical Exaggeration: X5.33  
 OCD Ex. 6-0421

### Apache Corporation







EBDU #37  
 Unit E (SW 1/4 of NW 1/4)  
 Sec. 13, T. 21 S., R. 37 E.,  
 Lea County, New Mexico  
 32° 28' 50.73"N,  
 103° 07' 14.31"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Figure 3a - Geological Cross Section A-A' (N-S)



### Legend

-  - Silty Clay/Top Soil (CL)
-  - Caliche
-  - Groundwater Potentiometric Surface, December 21, 2023
-  - Sand (SW)
-  - Silty Clay (Triassic Chinle Fm.)
-  - Well Screen

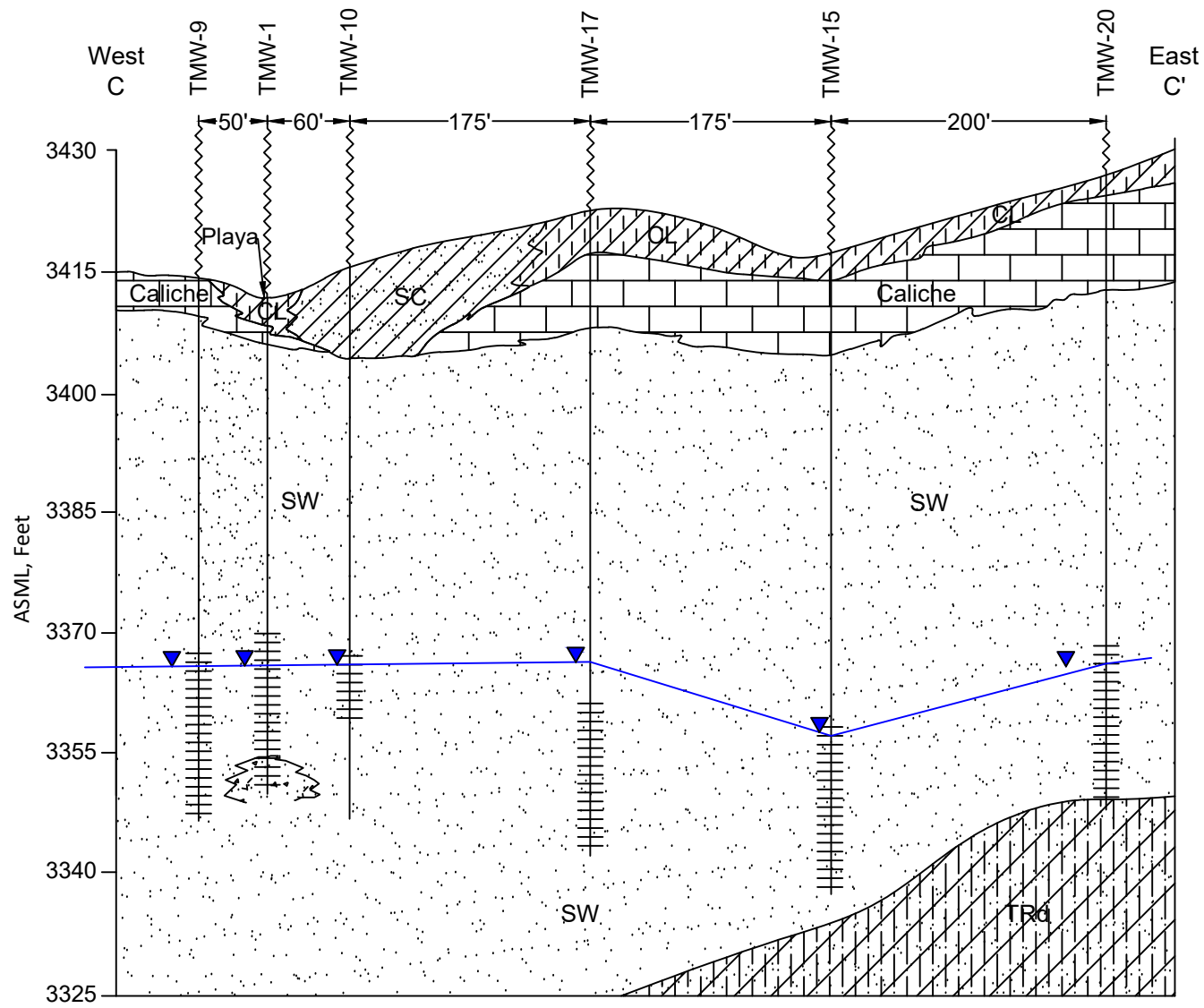
-Vertical Scale: 1"=20'  
 -Horizontal Scale: 1"=125'  
 -Vertical Exaggeration: X6.5  
 OCD Ex. 6-0422

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EBDU #37  
 Unit E (SW 1/4 of NW 1/4)  
 Sec. 13, T. 21 S., R. 37 E.,  
 Lea County, New Mexico  
 32° 28' 50.73"N,  
 103° 07' 14.31"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Figure 3b - Geological Cross Section Ba-Ba' (N-S)



### Legend

- Silty Clay/Top Soil (CL)
- Sandy Clay (CL)
- Groundwater Potentiometric Surface, December 21, 2023
- Caliche
- Sand (SW)
- Silty Clay (Triassic Chinle Fm)
- Well Screen

-Vertical Scale: 1"=15'  
 -Horizontal Scale: 1"= 80'  
 -Vertical Exaggeration: X5.3  
 OCD Ex. 6-0423

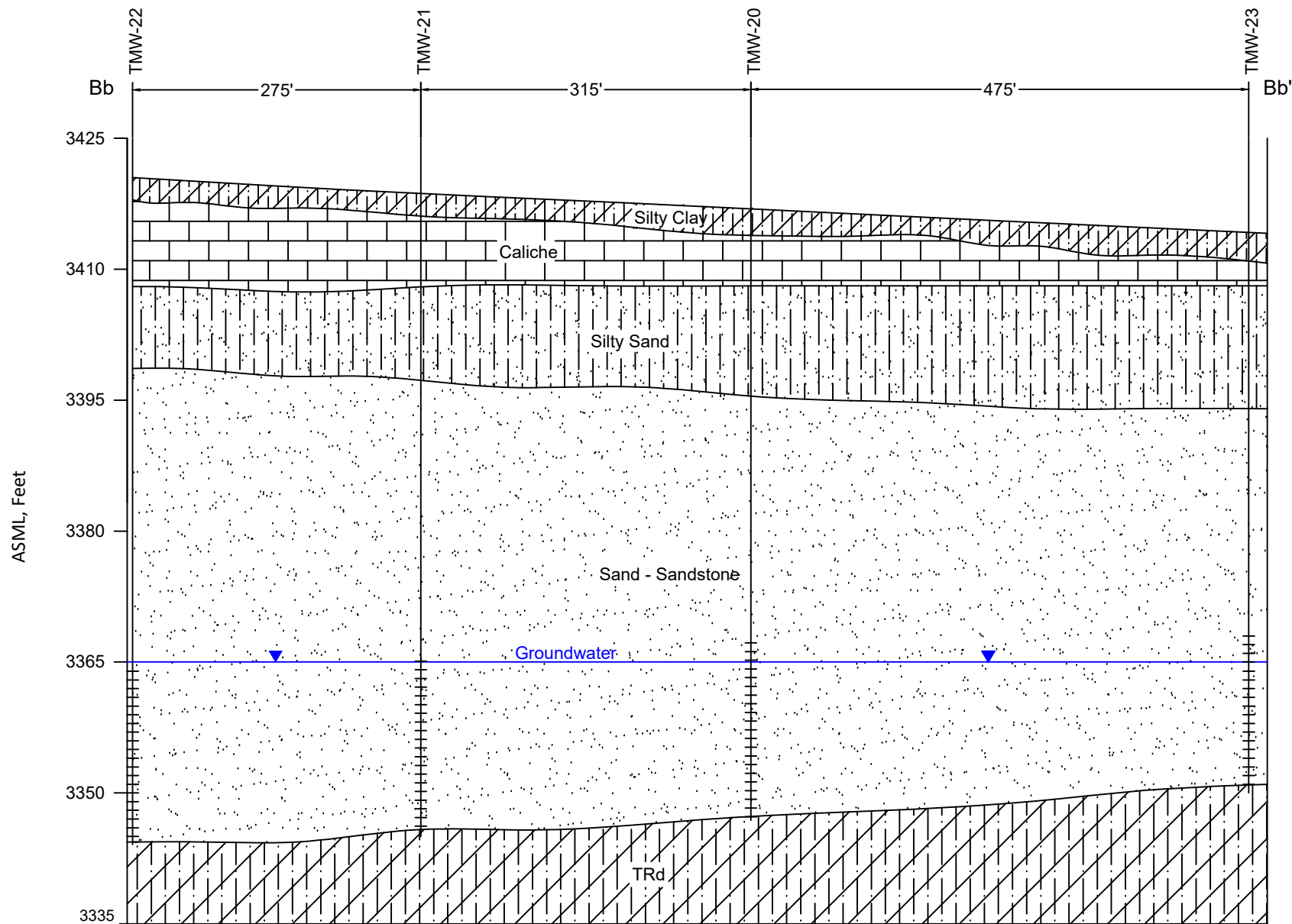
### Apache Corporation

EBDU #37

Unit E (SW 1/4 of NW 1/4)  
 Sec. 13, T. 21 S., R. 37 E.,  
 Lea County, New Mexico  
 32° 28' 50.73"N,  
 103° 07' 14.31"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Figure 3c - Geological Cross Section C-C' (W-E)



### Legend

- Silty Clay/Top Soil (CL)
- Silty Sand (SM)
- Groundwater Potentiometric Surface, December 21, 2023
- Silty Clay (Triassic Chinle Fm)
- Well Screen

-Vertical Scale: 1"=15'  
 -Horizontal Scale: 1"= 140'  
 -Vertical Exaggeration: X5.3  
 OCD Ex. 6-0424

### Apache Corporation

EBDU #37  
 Unit E (SW 1/4 of NW 1/4)  
 Sec. 13, T. 21 S., R. 37 E.,  
 Lea County, New Mexico  
 32° 28' 50.73"N,  
 103° 07' 14.31"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Figure 3d -Geological Cross Section Bb-Bb' (N-S)

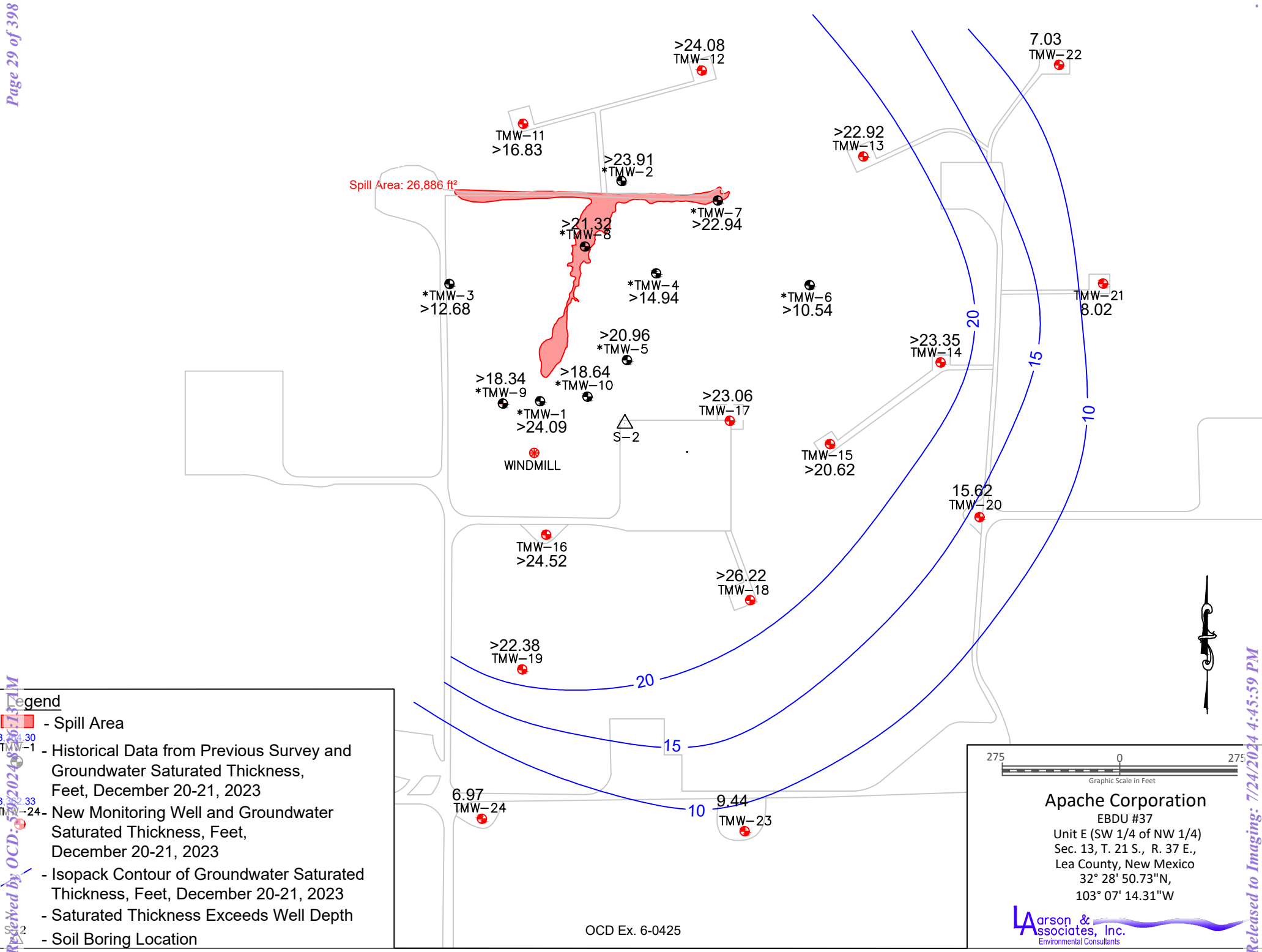
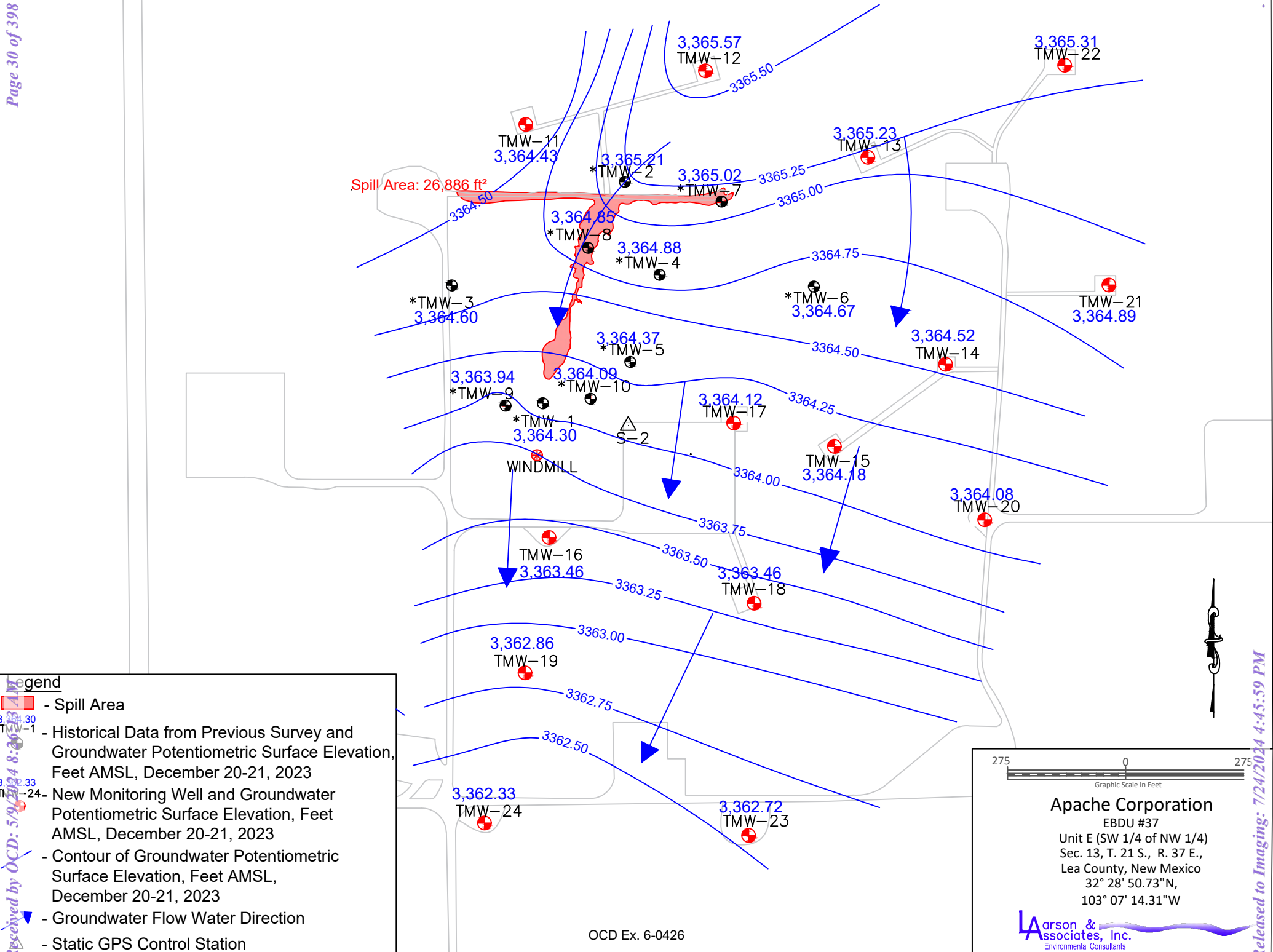


Figure 4 - Groundwater Saturated Thickness Map, December 20-21, 2023



Figure 5a - Groundwater Potentiometric Surface Map, December 20-21, 2023



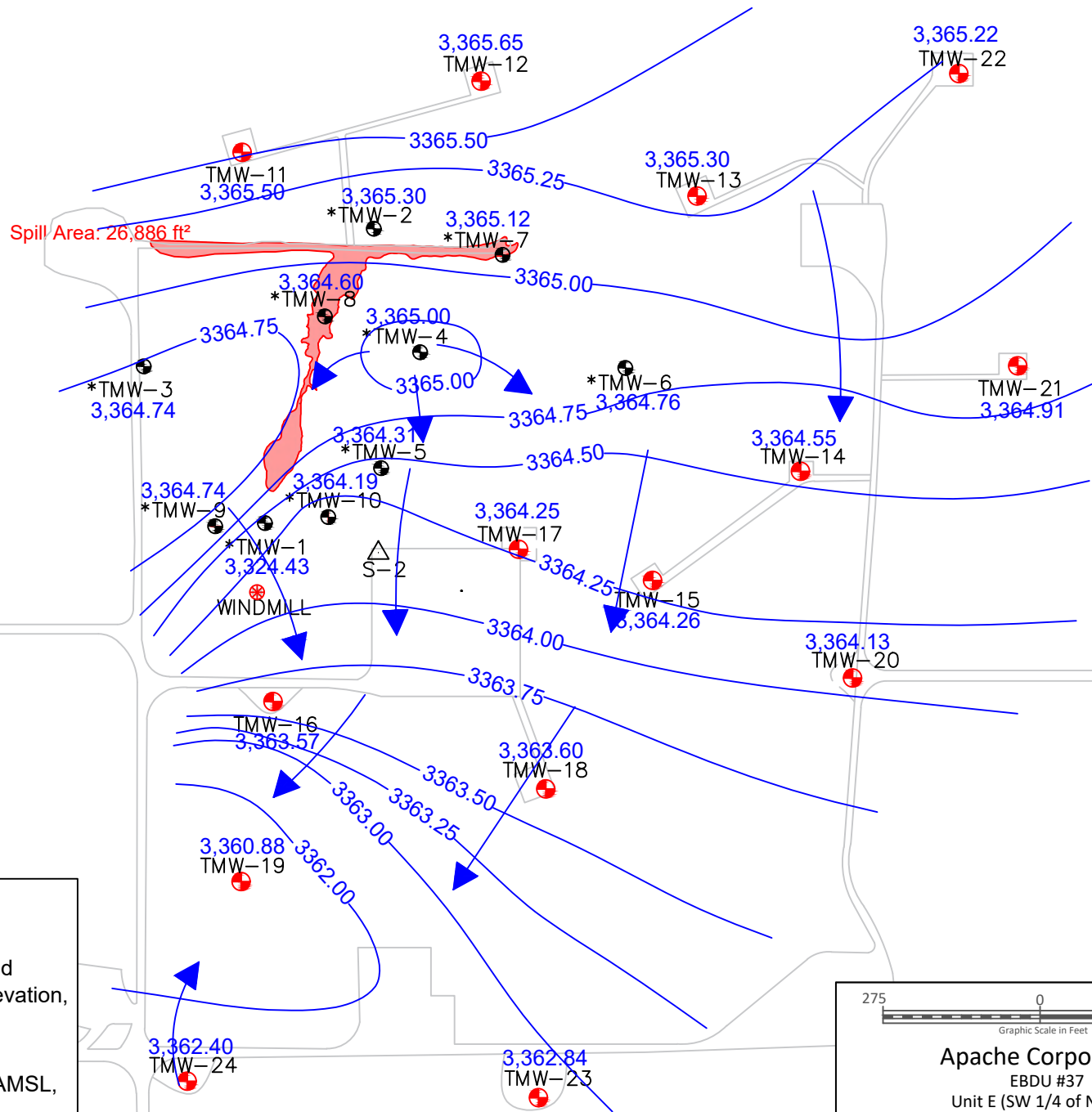
OCD Ex. 6-0426

275 0 275  
Graphic Scale in Feet

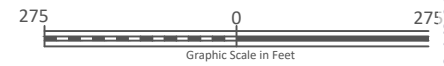
**Apache Corporation**  
EBDU #37  
Unit E (SW 1/4 of NW 1/4)  
Sec. 13, T. 21 S., R. 37 E.,  
Lea County, New Mexico  
32° 28' 50.73"N,  
103° 07' 14.31"W

**Larson & Associates, Inc.**  
Environmental Consultants

- Legend**
- - Spill Area
  - - Historical Data from Previous Survey and Groundwater Potentiometric Surface Elevation, Feet AMSL, March 14, 2024
  - - New Monitoring Well and Groundwater Potentiometric Surface Elevation, Feet AMSL, March 14, 2024
  - Contour of Groundwater Potentiometric Surface Elevation, Feet AMSL, March 14, 2024
  - ▶ - Groundwater Flow Water Direction
  - △ - Static GPS Control Station



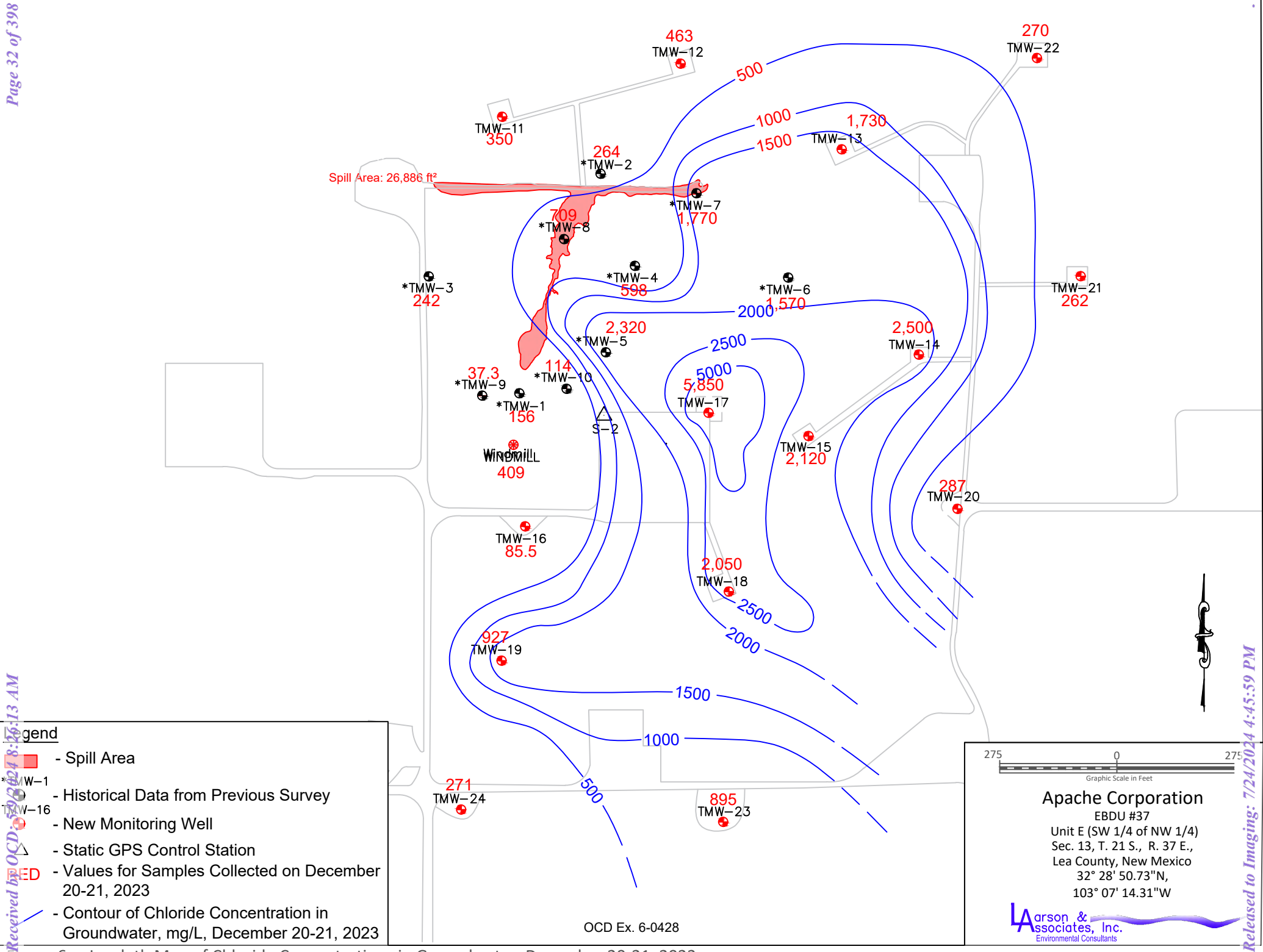
OCD Ex. 6-0427



**Apache Corporation**  
 EBDU #37  
 Unit E (SW 1/4 of NW 1/4)  
 Sec. 13, T. 21 S., R. 37 E.,  
 Lea County, New Mexico  
 32° 28' 50.73"N,  
 103° 07' 14.31"W

**Larson & Associates, Inc.**  
 Environmental Consultants

Figure 5b - Groundwater Potentiometric Surface Map, March 14, 2024



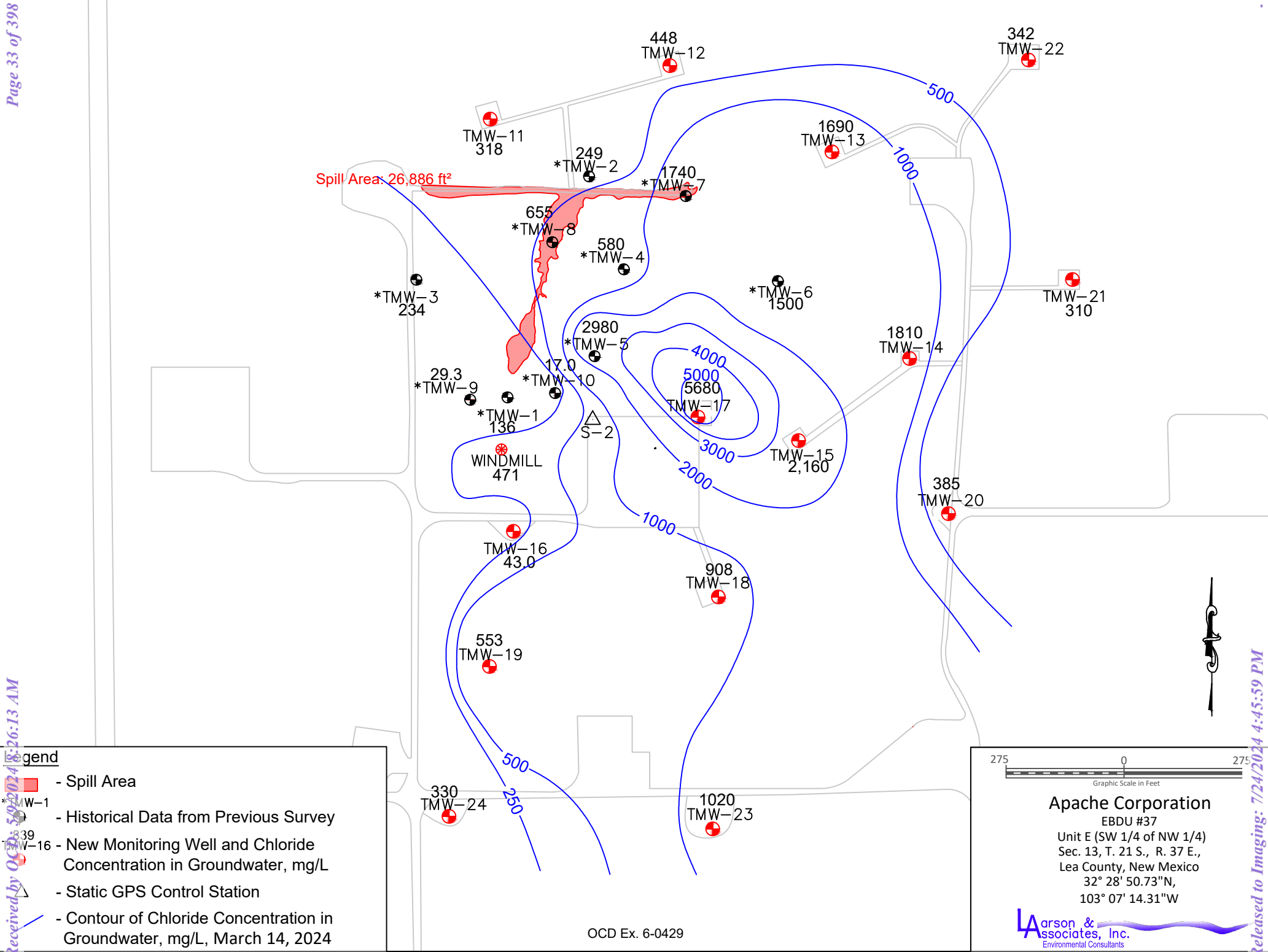
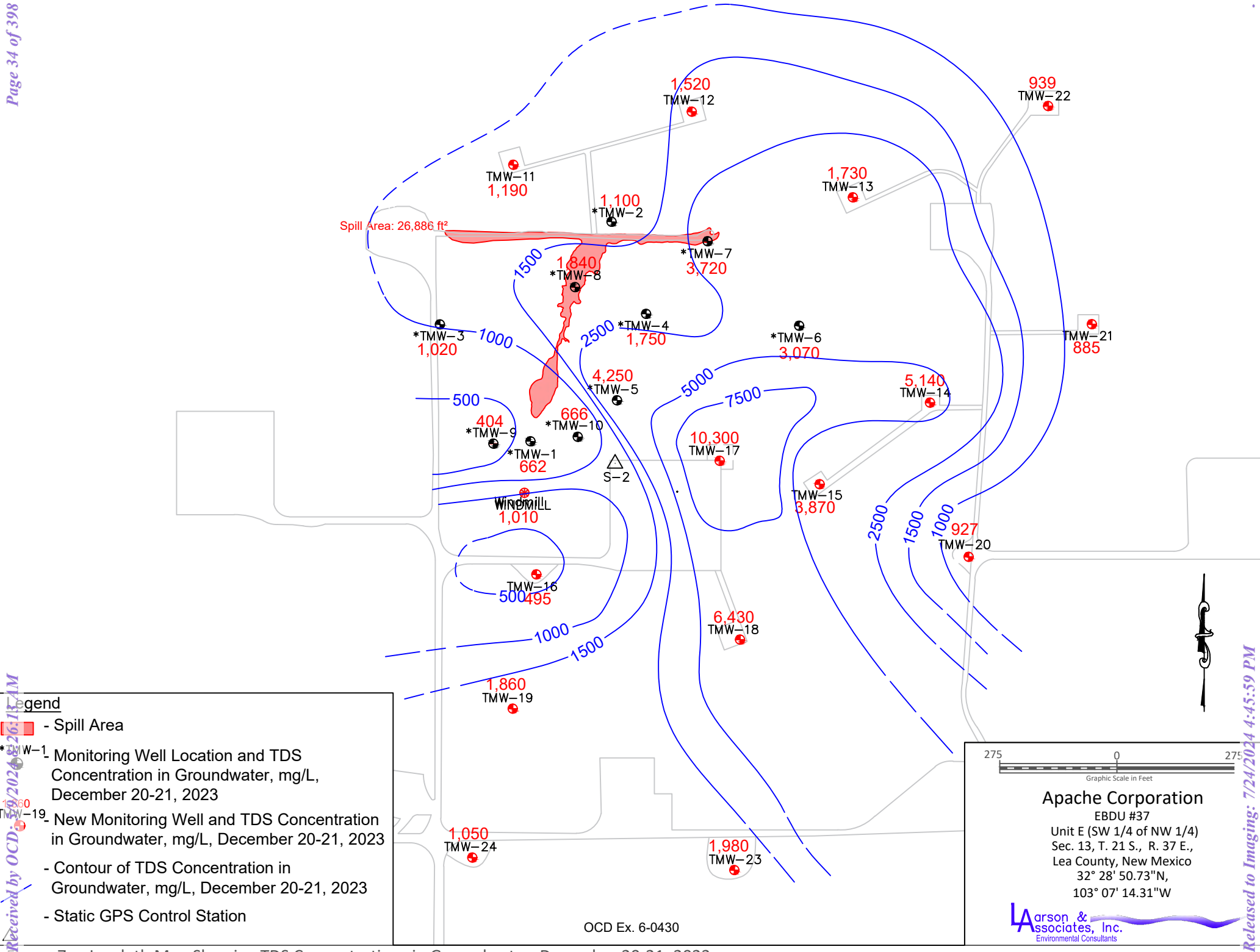


Figure 6b - Isopleth Map of Chloride Concentrations in Groundwater, March 14, 2024



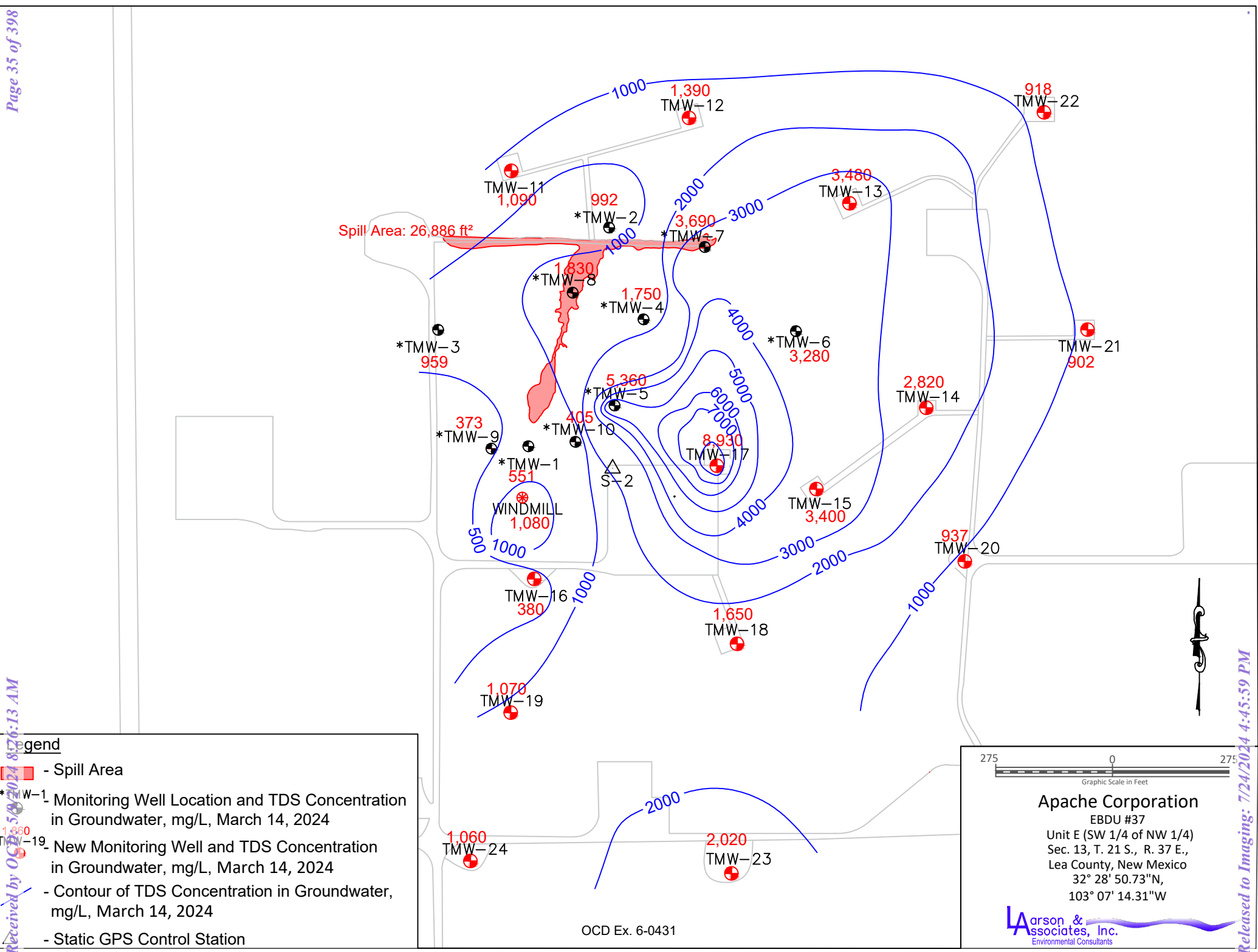


Figure 7b - Isopleth Map Showing TDS Concentrations in Groundwater, March 14, 2024



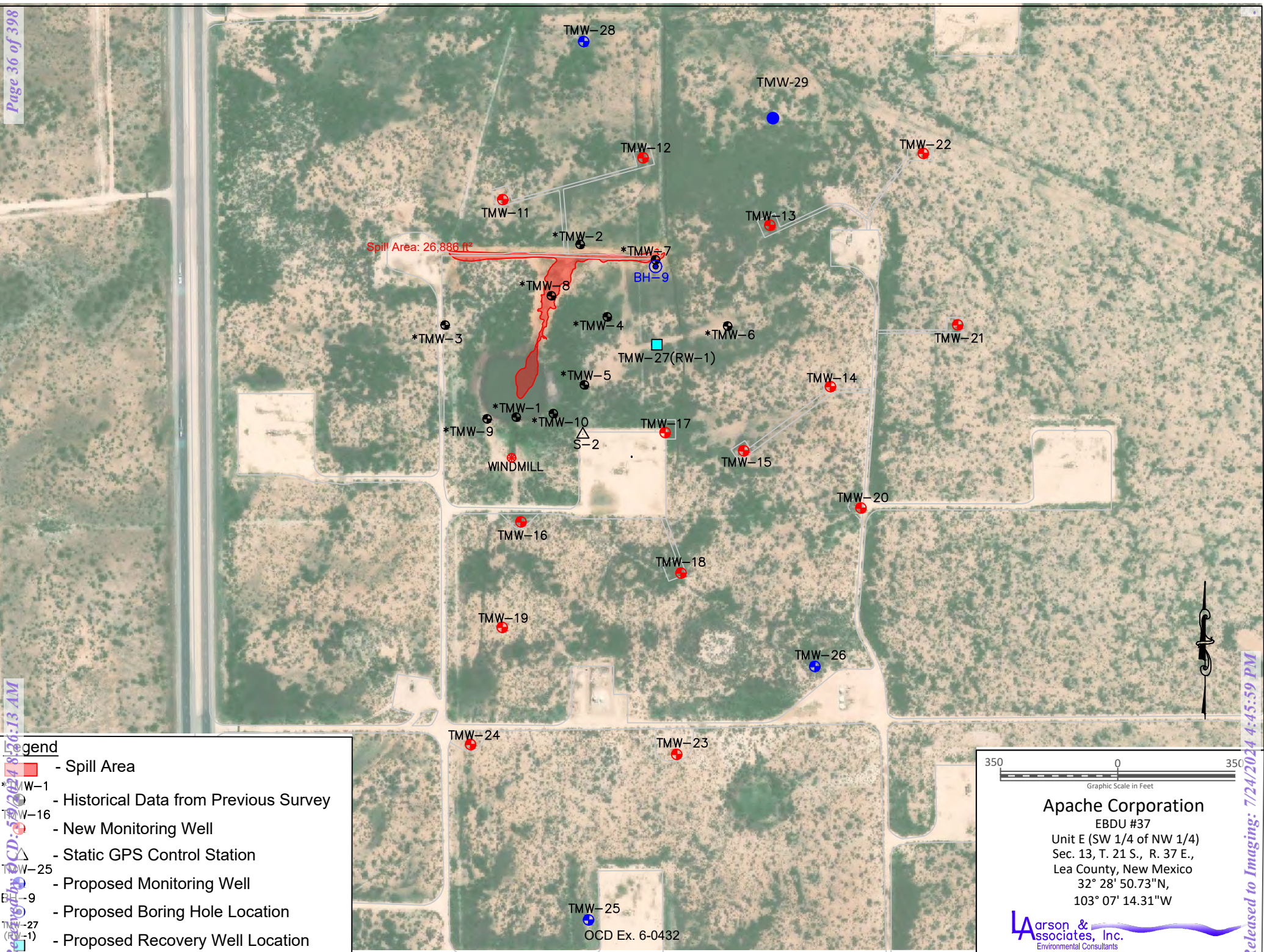


Figure 8a - Aerial Map Showing Monitoring Well Locations



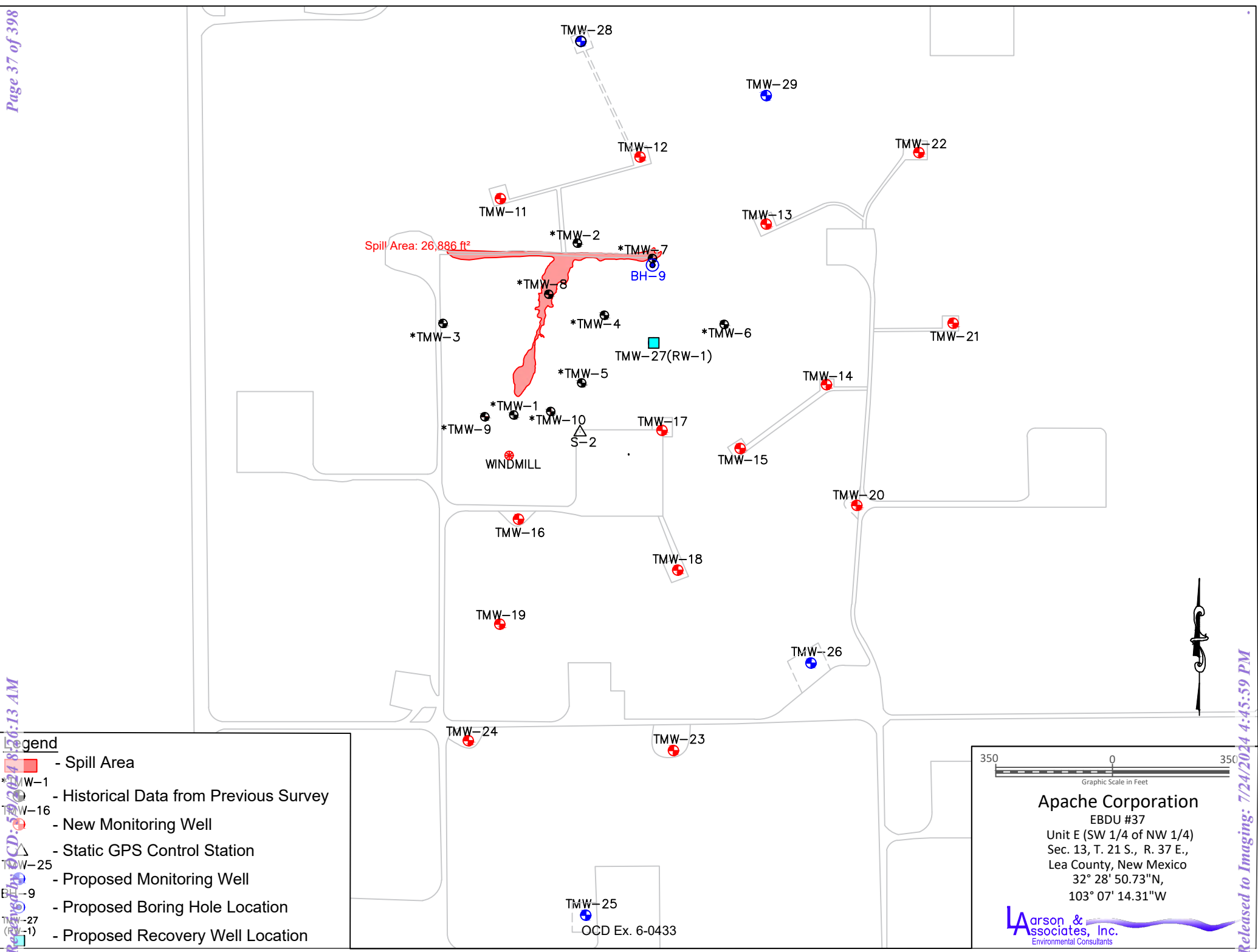


Figure 8b - Site Map Showing Monitoring Well Locations



**Attachment A  
Initial C-141**

Incident ID	NDHR1922141227
District RP	1RP-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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

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

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

Printed Name: Bruce Baker Title: Sr. Environmental Tech

Signature: \_\_\_\_\_ Date: 10/29/2019

email: Larry.Baker@apachecorp.com Telephone: 432-631-6982

**OCD Only**

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

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 confirmed as part of any request for deferral of remediation.*

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

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

Printed Name: Bruce Baker Title: Sr. Environmental Tech  
Signature: \_\_\_\_\_ 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 ☐ Denied ☐ Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Attachment B**  
**NMOCD Communications**

**From:** [Bratcher, Michael, EMNRD](#)  
**To:** [Mark Larson](#); [Romero, Rosa, EMNRD](#); [Buchanan, Michael, EMNRD](#); [Powell, Brandon, EMNRD](#)  
**Cc:** [Bole, Barrett](#); ["Larry.Baker@apachecorp.com"](mailto:Larry.Baker@apachecorp.com); [Robert Nelson](#)  
**Subject:** RE: [EXTERNAL] FW: Apache Corporation, EBDU 37 (Incident NDHR1922141227/1RP-5636) - Scope of Work for Additional Monitoring Wells  
**Date:** Tuesday, November 14, 2023 12:08:50 PM  
**Attachments:** [image001.png](#)

---

Mark,

Your proposal (scope of work) dated November 8, 2023, for the installation of additional investigatory/monitor wells, is approved with one additional well installation requested. OCD requests in addition to those proposed, one more well be installed approximately half way between TMW-5 and the proposed TMW-15 well.

Thank you,

**Mike Bratcher** • Incident Supervisor  
Environmental Bureau  
EMNRD - Oil Conservation Division  
506 W. Texas Ave | Artesia, NM 88210  
(575) 626-0857 | [mike.bratcher@emnrd.nm.gov](mailto:mike.bratcher@emnrd.nm.gov)  
<http://www.emnrd.nm.gov/ocd>



---

**From:** Mark Larson <Mark@laenvironmental.com>  
**Sent:** Friday, November 10, 2023 8:20 AM  
**To:** Romero, Rosa, EMNRD <RosaM.Romero@emnrd.nm.gov>; Buchanan, Michael, EMNRD <Michael.Buchanan@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>  
**Cc:** Bole, Barrett <Barrett.Bole@apachecorp.com>; 'Larry.Baker@apachecorp.com' <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>  
**Subject:** [EXTERNAL] FW: Apache Corporation, EBDU 37 (Incident NDHR1922141227/1RP-5636) - Scope of Work for Additional Monitoring Wells

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Ms. Rosa M. Romero, Mr. Michael Buchanan, Mr. Mike Bratcher,  
Per the meeting on October 30, 2023, Larson & Associates,, Inc. (LAI), on behalf of Apache Corporation (Apache), submits the attached scope of work (SOW) for installing additional monitoring wells (TMW-11 through TMW-16) at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/NW), Section 13, Township 21 South, Range 37 East, Lea County, New Mexico. Please contact Barrett Bole with Apache at (432) 818-1108 or email [Barrett.Bole@apachecorp.com](mailto:Barrett.Bole@apachecorp.com), Bruce Baker with Apache at (432) 631-6982 or email [Larry.Baker@apachecorp.com](mailto:Larry.Baker@apachecorp.com), Robert Nelson at (432) 687-0901 or [rnelson@laenvironmental.com](mailto:rnelson@laenvironmental.com) or me to discuss any questions you may have.

Respectfully,  
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](mailto:mark@laenvironmental.com)



“Serving the Permian Basin Since 2000”

**Attachment C**

**Laboratory Report  
(Chloride Analysis)**





Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/4/2023 9:53:16 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-36346-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

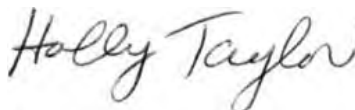
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/4/2023 9:53:16 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-36346-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Job ID: 880-36346-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36346-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/1/2023 9:14 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 4.3°C

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68117 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Client Sample ID: TMW-11

Lab Sample ID: 880-36346-1

Date Collected: 11/30/23 09:23

Matrix: Water

Date Received: 12/01/23 09:14

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.00	mg/L			12/01/23 17:35	10

Client Sample ID: TMW-12

Lab Sample ID: 880-36346-2

Date Collected: 11/30/23 12:16

Matrix: Water

Date Received: 12/01/23 09:14

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437	F1 F2	5.00	mg/L			12/01/23 12:45	10

Client Sample ID: Tote

Lab Sample ID: 880-36346-3

Date Collected: 11/30/23 08:15

Matrix: Water

Date Received: 12/01/23 09:14

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	948		50.0	mg/L			12/01/23 13:25	100

Client Sample ID: Tote

Lab Sample ID: 880-36346-4

Date Collected: 11/30/23 11:30

Matrix: Water

Date Received: 12/01/23 09:14

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.7		2.50	mg/L			12/01/23 17:27	5

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68106/3

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/01/23 14:18	1

Lab Sample ID: LCS 880-68106/4

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.37		mg/L		101	90 - 110

Lab Sample ID: LCSD 880-68106/5

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.79		mg/L		103	90 - 110	2	20

Lab Sample ID: MB 880-68112/3

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/01/23 16:52	1

Lab Sample ID: LCS 880-68112/4

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.51		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-68112/5

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.61		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36346-4 MS

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Tote

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11.7		125	134.7		mg/L		98	90 - 110

Lab Sample ID: 880-36346-4 MSD

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Tote

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11.7		125	135.3		mg/L		99	90 - 110	0	20

Eurofins Midland

QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68117/3 Matrix: Water Analysis Batch: 68117										Client Sample ID: Method Blank Prep Type: Total/NA			
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac					
Chloride	<0.500	U	0.500	mg/L			12/01/23 12:04	1					

Lab Sample ID: LCS 880-68117/4 Matrix: Water Analysis Batch: 68117										Client Sample ID: Lab Control Sample Prep Type: Total/NA			
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride			25.0	25.61		mg/L		102	90 - 110				

Lab Sample ID: LCSD 880-68117/5 Matrix: Water Analysis Batch: 68117										Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA			
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride			25.0	25.68		mg/L		103	90 - 110	0	20		

Lab Sample ID: 880-36346-2 MS Matrix: Water Analysis Batch: 68117										Client Sample ID: TMW-12 Prep Type: Total/NA			
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride	437	F1 F2	250	528.4	F1	mg/L		37	90 - 110				

Lab Sample ID: 880-36346-2 MSD Matrix: Water Analysis Batch: 68117										Client Sample ID: TMW-12 Prep Type: Total/NA			
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride	437	F1 F2	250	725.0	F1 F2	mg/L		115	90 - 110	31	20		



QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-1	TMW-11	Total/NA	Water	300.0	
MB 880-68106/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68106/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68106/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 68112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-4	Tote	Total/NA	Water	300.0	
MB 880-68112/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68112/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68112/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-4 MS	Tote	Total/NA	Water	300.0	
880-36346-4 MSD	Tote	Total/NA	Water	300.0	

Analysis Batch: 68117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-2	TMW-12	Total/NA	Water	300.0	
880-36346-3	Tote	Total/NA	Water	300.0	
MB 880-68117/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68117/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68117/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-2 MS	TMW-12	Total/NA	Water	300.0	
880-36346-2 MSD	TMW-12	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Client Sample ID: TMW-11  
Date Collected: 11/30/23 09:23  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68106	12/01/23 17:35	CH	EET MID

Client Sample ID: TMW-12  
Date Collected: 11/30/23 12:16  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68117	12/01/23 12:45	CH	EET MID

Client Sample ID: Tote  
Date Collected: 11/30/23 08:15  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68117	12/01/23 13:25	CH	EET MID

Client Sample ID: Tote  
Date Collected: 11/30/23 11:30  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	10 mL	10 mL	68112	12/01/23 17:27	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36346-1	TMW-11	Water	11/30/23 09:23	12/01/23 09:14
880-36346-2	TMW-12	Water	11/30/23 12:16	12/01/23 09:14
880-36346-3	Tote	Water	11/30/23 08:15	12/01/23 09:14
880-36346-4	Tote	Water	11/30/23 11:30	12/01/23 09:14

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36346 No. 3173  
CHAIN-OF-CUSTODY

<b>Arson &amp; Associates, Inc.</b> Environmental Consultants Data Reported to <u>Robert Nelson</u>		507 N. Marienfeld, Ste. 202 Midland, TX 79701 432-687-0901		DATE <u>12/1/2023</u> PAGE <u>1</u> OF <u>1</u> PO# _____ LAB WORK ORDER# _____ PROJECT LOCATION OR NAME <u>EDDA #37</u> LAI PROJECT # <u>19-0112-49</u> COLLECTOR <u>Ant BB</u>
TRRP report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	S=SOIL W=WATER A=AIR	P=PAINT SL=SLUDGE OT=OTHER	PRESERVATION HCl <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> UNPRESERVED <input type="checkbox"/> ICE <input type="checkbox"/>	ANALYSES TPH 418 <input type="checkbox"/> MTBE <input type="checkbox"/> GASOLINE MOD 8015 <input type="checkbox"/> DIESEL MOD 8015 <input type="checkbox"/> OIL MOD 8015 <input type="checkbox"/> VOC 8260 <input type="checkbox"/> SVOC 8270 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/> TOLP METALS (RCRA) <input type="checkbox"/> 8151 HERBICIDES <input type="checkbox"/> TOLP PEST <input type="checkbox"/> HERB <input type="checkbox"/> TOLP VOC <input type="checkbox"/> LEAD - TOTAL <input type="checkbox"/> P W 200.8 <input type="checkbox"/> TOLP <input type="checkbox"/> RCI <input type="checkbox"/> TOX <input type="checkbox"/> FLASHPOINT <input type="checkbox"/> PH <input type="checkbox"/> HEXAVALENT CHROMIUM <input type="checkbox"/> CYANIDE <input type="checkbox"/> CHLORIDES <input type="checkbox"/> AMMONIUM <input type="checkbox"/> ALKALINITY <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/>
TIME ZONE <u>MST/ NM</u>	Lab #	Date	Time	
Field Sample ID				
TNW-11		11/30/23	9:23	W
TNW-12			12:16	W
Tote			6:15	W
Tote			11:30	OT
TOTAL 4				
RELINQUISHED BY (Signature) <u>Robert Nelson</u> DATE/TIME <u>12/1/24</u> RECEIVED BY (Signature) <u>[Signature]</u>				LABORATORY USE ONLY: THERM# <u>4.114.3</u> TWE 1-20 RECEIVING TEMP <u>4.114.3</u> CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____
RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____				TURN AROUND TIME NORMAL <input type="checkbox"/> 1 DAY <input checked="" type="checkbox"/> Rush!! 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/>
RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____				HAND DELIVERED <input checked="" type="checkbox"/>
LABORATORY <u>Xena</u>				880-36346 Chain of Custody

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12/4/2023

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36346-1  
SDG Number: 19-0112-49

Login Number: 36346  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/4/2023 9:53:16 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-36346-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701



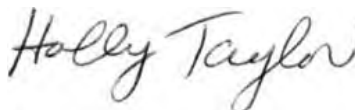
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/4/2023 9:53:16 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-36346-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Job ID: 880-36346-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36346-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/1/2023 9:14 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 4.3°C

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68117 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Client Sample ID: TMW-11  
Date Collected: 11/30/23 09:23  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.00	mg/L			12/01/23 17:35	10

Client Sample ID: TMW-12  
Date Collected: 11/30/23 12:16  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-2  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437	F1 F2	5.00	mg/L			12/01/23 12:45	10

Client Sample ID: Tote  
Date Collected: 11/30/23 08:15  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-3  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	948		50.0	mg/L			12/01/23 13:25	100

Client Sample ID: Tote  
Date Collected: 11/30/23 11:30  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-4  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.7		2.50	mg/L			12/01/23 17:27	5

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68106/3

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/01/23 14:18	1

Lab Sample ID: LCS 880-68106/4

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.37		mg/L		101	90 - 110

Lab Sample ID: LCSD 880-68106/5

Matrix: Water

Analysis Batch: 68106

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.79		mg/L		103	90 - 110	2	20

Lab Sample ID: MB 880-68112/3

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/01/23 16:52	1

Lab Sample ID: LCS 880-68112/4

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.51		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-68112/5

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.61		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36346-4 MS

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Tote

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11.7		125	134.7		mg/L		98	90 - 110

Lab Sample ID: 880-36346-4 MSD

Matrix: Water

Analysis Batch: 68112

Client Sample ID: Tote

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11.7		125	135.3		mg/L		99	90 - 110	0	20

Eurofins Midland

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68117/3

Matrix: Water

Analysis Batch: 68117

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/01/23 12:04	1

Lab Sample ID: LCS 880-68117/4

Matrix: Water

Analysis Batch: 68117

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.61		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-68117/5

Matrix: Water

Analysis Batch: 68117

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.68		mg/L		103	90 - 110	0	20

Lab Sample ID: 880-36346-2 MS

Matrix: Water

Analysis Batch: 68117

Client Sample ID: TMW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	437	F1 F2	250	528.4	F1	mg/L		37	90 - 110

Lab Sample ID: 880-36346-2 MSD

Matrix: Water

Analysis Batch: 68117

Client Sample ID: TMW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	437	F1 F2	250	725.0	F1 F2	mg/L		115	90 - 110	31	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-1	TMW-11	Total/NA	Water	300.0	
MB 880-68106/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68106/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68106/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 68112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-4	Tote	Total/NA	Water	300.0	
MB 880-68112/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68112/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68112/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-4 MS	Tote	Total/NA	Water	300.0	
880-36346-4 MSD	Tote	Total/NA	Water	300.0	

Analysis Batch: 68117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-2	TMW-12	Total/NA	Water	300.0	
880-36346-3	Tote	Total/NA	Water	300.0	
MB 880-68117/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68117/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68117/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-2 MS	TMW-12	Total/NA	Water	300.0	
880-36346-2 MSD	TMW-12	Total/NA	Water	300.0	



Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Client Sample ID: TMW-11  
Date Collected: 11/30/23 09:23  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68106	12/01/23 17:35	CH	EET MID

Client Sample ID: TMW-12  
Date Collected: 11/30/23 12:16  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68117	12/01/23 12:45	CH	EET MID

Client Sample ID: Tote  
Date Collected: 11/30/23 08:15  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68117	12/01/23 13:25	CH	EET MID

Client Sample ID: Tote  
Date Collected: 11/30/23 11:30  
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	10 mL	10 mL	68112	12/01/23 17:27	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

**Protocol References:**  
EPA = US Environmental Protection Agency

**Laboratory References:**  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36346-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36346-1	TMW-11	Water	11/30/23 09:23	12/01/23 09:14
880-36346-2	TMW-12	Water	11/30/23 12:16	12/01/23 09:14
880-36346-3	Tote	Water	11/30/23 08:15	12/01/23 09:14
880-36346-4	Tote	Water	11/30/23 11:30	12/01/23 09:14

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36346 No. 3173  
CHAIN-OF-CUSTODY

DATE 12/11/2023						PAGE 1 OF 1								
PO#						LAB WORK ORDER#								
PROJECT LOCATION OR NAME EDDU #27														
LAI PROJECT # 19-0112-49						COLLECTOR RUTB3								
Data Reported to Robert Nelson														
TRRP report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		S=SOIL W=WATER A=AIR	P=PAINT SL=SLUDGE OT=OTHER	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	ICF	UNPRESERVED
TIME ZONE Time zone/State MST/AM														
Field Sample ID														
Tnw-11		11/30/23 9:23 W 1												
Tnw-12		12/11/23 12:16 W 1												
Total		6:15 W 1												
Total		11:30 OT 1												
TOTAL 4														
RELINQUISHED BY (Signature)						RECEIVED BY (Signature)								
RELINQUISHED BY (Signature)						RECEIVED BY (Signature)								
RELINQUISHED BY (Signature)						RECEIVED BY (Signature)								
LABORATORY XERO														

ANALYSES		FIELD NOTES	
BTEX/MTE	X	Direct bill to	
TPH 418.1	I	Apache	
GASOLINE MOD 8015			
DIESEL - MOD 8015			
OIL - MOD 8015			
VOC 8270			
SVOC 8270			
8081 PESTICIDES			
8082 PCBs			
TCLP - METALS (RCRA)			
TCLP - PEST			
LEAD - TOTAL			
RCL TOX			
JDS TSS			
PH			
EXPLOSIVES			
CHLORIDE ANIONS			
ALKALINITY			
CYANIDE			
% MOISTURE			
FLASHPOINT			
D.W. 200.8			
OTHER LIST			
TCLP VOC			
HERB			
SEM-VOC			
HOLDPAH			
8151 HERBICIDES			

LABORATORY USE ONLY		THERM#	
RECEIVING TEMP	4.1/4.3	JRE K.D.	
CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT		<input type="checkbox"/> NOT USED	
CARRIER BILL #			
HAND DELIVERED			

880-36346 Chain of Custody

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36346-1  
SDG Number: 19-0112-49

Login Number: 36346  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/6/2023 1:35:17 PM

## JOB DESCRIPTION

EDBU #37  
19-0112-49

## JOB NUMBER

880-36575-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

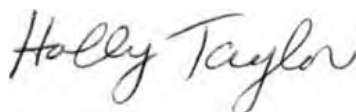
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/6/2023 1:35:17 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296



Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Laboratory Job ID: 880-36575-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Job ID: 880-36575-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36575-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/6/2023 10:17 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 6.3°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Client Sample ID: TMW-13  
Date Collected: 12/05/23 12:13  
Date Received: 12/06/23 10:17

Lab Sample ID: 880-36575-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	1920		25.0	mg/L			12/06/23 12:57	50	

Client Sample ID: TMW-18  
Date Collected: 12/05/23 15:30  
Date Received: 12/06/23 10:17

Lab Sample ID: 880-36575-2  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	2800		25.0	mg/L			12/06/23 13:16	50	

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68488/3

Matrix: Water

Analysis Batch: 68488

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/06/23 12:37	1

Lab Sample ID: LCS 880-68488/4

Matrix: Water

Analysis Batch: 68488

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.97		mg/L		104	90 - 110

Lab Sample ID: LCSD 880-68488/5

Matrix: Water

Analysis Batch: 68488

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.35		mg/L		101	90 - 110	2	20

Lab Sample ID: 880-36575-1 MS

Matrix: Water

Analysis Batch: 68488

Client Sample ID: TMW-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1920		1250	3226		mg/L		105	90 - 110

Lab Sample ID: 880-36575-1 MSD

Matrix: Water

Analysis Batch: 68488

Client Sample ID: TMW-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1920		1250	3229		mg/L		105	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36575-1	TMW-13	Total/NA	Water	300.0	
880-36575-2	TMW-18	Total/NA	Water	300.0	
MB 880-68488/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68488/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68488/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36575-1 MS	TMW-13	Total/NA	Water	300.0	
880-36575-1 MSD	TMW-13	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Client Sample ID: TMW-13  
Date Collected: 12/05/23 12:13  
Date Received: 12/06/23 10:17

Lab Sample ID: 880-36575-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	10 mL	10 mL	68488	12/06/23 12:57	SMC	EET MID

Client Sample ID: TMW-18  
Date Collected: 12/05/23 15:30  
Date Received: 12/06/23 10:17

Lab Sample ID: 880-36575-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	10 mL	10 mL	68488	12/06/23 13:16	SMC	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

- 1
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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

- Protocol References:**
- EPA = US Environmental Protection Agency
- Laboratory References:**
- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36575-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36575-1	TMW-13	Water	12/05/23 12:13	12/06/23 10:17
880-36575-2	TMW-18	Water	12/05/23 15:30	12/06/23 10:17

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**Larson & Associates, Inc.**  
Environmental Consultants

507 N. Marientfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to **Robert Nelson / Mark Larson**

DATE: 12/15/23 PAGE 1 OF 1  
PO#: \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME EBDU #33  
LAI PROJECT # 19-0112-49 COLLECTOR DSG

**CHAIN-OF-CUSTODY**

No. 3039

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State

MMT/MM

Field  
Sample I D

Lab #

Date

Time

Matrix

# of Containers

HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐  
ICE  
UNPRESERVED

**ANALYSES**  
BTEX ☐ MTBE ☐  
TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐  
GASOLINE MOD 8015 ☐  
DIESEL - MOD 8015 ☐  
OIL - MOD 8015 ☐  
VOC 8260 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HCLPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
8082 PESTICIDES ☐  
TCLP - METALS (RCRA) ☐ TCLP VOC ☐  
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ OTHER LIST ☐  
LEAD - TOTAL ☐ DW 200.8 ☐ TCLP ☐  
RCL ☐ TOX ☐ FLASHPOINT ☐  
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐  
PH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PENTACHLORATE ☐  
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Bill directly  
to Apache



880-36575 Chain of Custody

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-36575-1

SDG Number: 19-0112-49

Login Number: 36575

List Number: 1

Creator: Kramer, Jessica

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/5/2023 3:13:18 PM

## JOB DESCRIPTION

EBDU 37  
19-0112-49

## JOB NUMBER

880-36445-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/5/2023 3:13:18 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Laboratory Job ID: 880-36445-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count



Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Job ID: 880-36445-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36445-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 12/5/2023 8:34 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-68424 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

The associated samples are: TMW-14 (880-36445-1), (880-36445-A-1 MS) and (880-36445-A-1 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Client Sample ID: TMW-14  
Date Collected: 12/04/23 13:15  
Date Received: 12/05/23 08:34

Lab Sample ID: 880-36445-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	6010	F1	50.0	mg/L			12/05/23 12:49	100	

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68424/3 Matrix: Water Analysis Batch: 68424										Client Sample ID: Method Blank Prep Type: Total/NA	
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Chloride	<0.500	U	0.500	mg/L			12/05/23 12:30	1			

Lab Sample ID: LCS 880-68424/4 Matrix: Water Analysis Batch: 68424										Client Sample ID: Lab Control Sample Prep Type: Total/NA	
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	26.38		mg/L		106	90 - 110		

Lab Sample ID: LCSD 880-68424/5 Matrix: Water Analysis Batch: 68424										Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA	
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.02		mg/L		100	90 - 110	5	20

Lab Sample ID: 880-36445-1 MS Matrix: Water Analysis Batch: 68424										Client Sample ID: TMW-14 Prep Type: Total/NA	
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	6010	F1	2500	8919	F1	mg/L		116	90 - 110		

Lab Sample ID: 880-36445-1 MSD Matrix: Water Analysis Batch: 68424										Client Sample ID: TMW-14 Prep Type: Total/NA	
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6010	F1	2500	8916	F1	mg/L		116	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36445-1	TMW-14	Total/NA	Water	300.0	
MB 880-68424/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68424/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68424/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36445-1 MS	TMW-14	Total/NA	Water	300.0	
880-36445-1 MSD	TMW-14	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Client Sample ID: TMW-14  
Date Collected: 12/04/23 13:15  
Date Received: 12/05/23 08:34

Lab Sample ID: 880-36445-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68424	12/05/23 12:49	SMC	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

- 1
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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU 37

Job ID: 880-36445-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36445-1	TMW-14	Water	12/04/23 13:15	12/05/23 08:34

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**Larson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to Robert Nelson / Mark Larson

DATE 12/4/2023 PAGE 1 OF 1  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME Edin 37  
LAI PROJECT # 19-0112-19 COLLECTOR DG

TRRP report ☒ Yes ☐ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State

Field Sample ID

Lab #  
Date  
Time  
Matrix

# of Containers

PRESERVATION  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐  
ICE  
UNPRESERVED

**ANALYSES**

BTEX ☐ MTBE ☐  
TPH 418 ☐ TPH 1005 ☐ TPH 1006 ☐  
GASOLINE MOD 8015 ☐  
DIESEL - MOD 8015 ☐  
OIL - MOD 8015 ☐  
VOC 8260 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
8082 PCBs ☐  
TCLP - METALS (RCRA) ☐ TCLP VOC ☐  
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ OTHER LIST ☐  
LEAD - TOTAL ☐ DW 2008 ☐ TCLP ☐  
RCI ☐ TOX ☐ FLASHPOINT ☐  
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐  
PH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PENTACHLORATE ☐  
CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

B.I. Barrett  
to Apache

26445 No. 3175  
CHAIN-OF-CUSTODY

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36445-1  
SDG Number: 19-0112-49

Login Number: 36445  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Robert Nelson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/5/2023 9:09:53 AM

## JOB DESCRIPTION

EBDU #32  
19-0112-49

## JOB NUMBER

880-36386-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/5/2023 9:09:53 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Laboratory Job ID: 880-36386-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Job ID: 880-36386-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36386-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 12/4/2023 9:25 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.8°C

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68296 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Client Sample ID: TMW-15  
Date Collected: 12/01/23 12:08  
Date Received: 12/04/23 09:25

Lab Sample ID: 880-36386-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	3850	F1	25.0	mg/L			12/04/23 16:57	50	

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68296/3

Matrix: Water

Analysis Batch: 68296

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/04/23 16:25	1

Lab Sample ID: LCS 880-68296/4

Matrix: Water

Analysis Batch: 68296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.11		mg/L		100	90 - 110

Lab Sample ID: LCSD 880-68296/5

Matrix: Water

Analysis Batch: 68296

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.06		mg/L		100	90 - 110	0	20

Lab Sample ID: 880-36386-1 MS

Matrix: Water

Analysis Batch: 68296

Client Sample ID: TMW-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3850	F1	1250	5370	F1	mg/L		122	90 - 110

Lab Sample ID: 880-36386-1 MSD

Matrix: Water

Analysis Batch: 68296

Client Sample ID: TMW-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3850	F1	1250	5377	F1	mg/L		122	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36386-1	TMW-15	Total/NA	Water	300.0	
MB 880-68296/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68296/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68296/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36386-1 MS	TMW-15	Total/NA	Water	300.0	
880-36386-1 MSD	TMW-15	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Client Sample ID: TMW-15  
Date Collected: 12/01/23 12:08  
Date Received: 12/04/23 09:25

Lab Sample ID: 880-36386-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	50 mL	50 mL	68296	12/04/23 16:57	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

**Protocol References:**  
EPA = US Environmental Protection Agency

**Laboratory References:**  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #32

Job ID: 880-36386-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36386-1	TMW-15	Water	12/01/23 12:08	12/04/23 09:25

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**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Morienfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to **Robert Nelson**

DATE 12/11/2013 PAGE 1 OF 1  
PO# \_\_\_\_\_ LAB WORK ORDER# 363806  
PROJECT LOCATION OR NAME EBDA #32  
LAI PROJECT # 19-0112-49 COLLECTOR LN

No. 3174  
CHAIN-OF-CUSTODY

TRRP report? ☐ Yes ☒ No  
S=SOIL W=WATER P=PAINT  
A=AIR SL=SLUDGE OT=OTHER

PRESERVATION

HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐  
ICE  
UNPRESERVED

ANALYSES

BTEX ☐ MTBE ☐  
TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐  
GASOLINE MOD 8015 ☐  
DIESEL - MOD 8015 ☐  
OIL - MOD 8015 ☐  
VOC 8260 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
8082 PCBs ☐  
TCMP - METALS (RCRA) ☐ TCMP VOC ☐  
TCMP - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ DW 200 8 ☐ TCMP ☐  
LEAD - TOTAL ☐ FLASHPOINT ☐  
RO ☐ TOX ☐ % MOISTURE ☐ CYANIDE ☐  
TDS ☐ TSS ☐  
PH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PECTHLORATE ☐  
CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Direct hit to Apache



RELINQUISHED BY (Signature) [Signature] DATE/TIME 12/14 RECEIVED BY (Signature) [Signature] DATE/TIME 12/14 935  
RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_  
RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_  
LABORATORY Xenico TURN AROUND TIME  
NORMAL ☐ 1 DAY ☒ 2 DAY ☐ OTHER ☐  
LABORATORY USE ONLY: RECEIVING TEMP 36/38 THERM# 128  
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED  
☐ CARRIER BILL # \_\_\_\_\_  
☐ HAND DELIVERED

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-36386-1

SDG Number: 19-0112-49

Login Number: 36386

List Number: 1

Creator: Kramer, Jessica

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	





Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 11/30/2023 11:43:37 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-36265-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

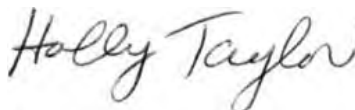
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
11/30/2023 11:43:37 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-36265-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Job ID: 880-36265-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36265-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 11/30/2023 8:11 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Client Sample ID: TMW-16  
Date Collected: 11/29/23 12:53  
Date Received: 11/30/23 08:11

Lab Sample ID: 880-36265-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	839		10.0	mg/L			11/30/23 11:06	20

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-67820/3

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			11/29/23 19:53	1

Lab Sample ID: LCS 880-67820/4

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.46		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-67820/5

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.49		mg/L		102	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 67820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36265-1	TMW-16	Total/NA	Water	300.0	
MB 880-67820/3	Method Blank	Total/NA	Water	300.0	
LCS 880-67820/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-67820/5	Lab Control Sample Dup	Total/NA	Water	300.0	

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Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Client Sample ID: TMW-16  
Date Collected: 11/29/23 12:53  
Date Received: 11/30/23 08:11

Lab Sample ID: 880-36265-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20	10 mL	10 mL	67820	11/30/23 11:06	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

**Protocol References:**  
EPA = US Environmental Protection Agency

**Laboratory References:**  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36265-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36265-1	TMW-16	Water	11/29/23 12:53	11/30/23 08:11

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11/30/2023

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36265-1  
SDG Number: 19-0112-49

Login Number: 36265  
List Number: 1  
Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 11/30/2023 10:03:46 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-36200-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

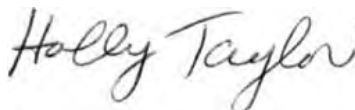
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
11/30/2023 10:03:46 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296



Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-36200-1  
SDG: 19-0112-49

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Sample Summary . . . . .	12
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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Job ID: 880-36200-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36200-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 11/29/2023 8:15 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Client Sample ID: TMW-17  
Date Collected: 11/28/23 15:21  
Date Received: 11/29/23 08:15

Lab Sample ID: 880-36200-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	11200		50.0	mg/L			11/29/23 23:13	100	

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-67820/3

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			11/29/23 19:53	1

Lab Sample ID: LCS 880-67820/4

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.46		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-67820/5

Matrix: Water

Analysis Batch: 67820

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.49		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36200-1 MS

Matrix: Water

Analysis Batch: 67820

Client Sample ID: TMW-17

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11200		1250	12390	E 4	mg/L		99	90 - 110

Lab Sample ID: 880-36200-1 MSD

Matrix: Water

Analysis Batch: 67820

Client Sample ID: TMW-17

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11200		1250	12370	E 4	mg/L		97	90 - 110	0	20

Eurofins Midland

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 67820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36200-1	TMW-17	Total/NA	Water	300.0	
MB 880-67820/3	Method Blank	Total/NA	Water	300.0	
LCS 880-67820/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-67820/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36200-1 MS	TMW-17	Total/NA	Water	300.0	
880-36200-1 MSD	TMW-17	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Client Sample ID: TMW-17  
Date Collected: 11/28/23 15:21  
Date Received: 11/29/23 08:15

Lab Sample ID: 880-36200-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	67820	11/29/23 23:13	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36200-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36200-1	TMW-17	Water	11/28/23 15:21	11/29/23 08:15

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**Carson & Associates, Inc.**  
Environmental Consultants

507 N. Marientfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to

DATE 11/29/2025 PAGE 1 OF 1  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME: EADU #32  
LAI PROJECT # 19-0112-49 COLLECTOR Ken

30200

No. 3171  
CHAIN-OF-CUSTODY

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

PRESERVATION  
HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐  
ICE  
UNPRESERVED

TIME ZONE  
Time zone/State  
MST/MD

Field  
Sample ID  
Lab #  
Date  
Time  
Matrix

# of Containers  
1

ANALYSES  
BTEX ☐ MTBE ☐  
TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐  
GASOLINE MOD 8015 ☐  
DIESEL - MOD 8015 ☐  
OIL - MOD 8015 ☐  
VOC 8280 ☐  
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐  
8081 PESTICIDES ☐ 8151 HERBICIDES ☐  
8082 PCBs ☐  
TCPL - METALS (RCRA) ☐ TCPL VOC ☐  
TCPL - PEST ☐ HERB ☐ Semi-VOC ☐  
TOTAL METALS (RCRA) ☐ OTHER LIST ☐  
LEAD - TOTAL ☐ D W 200 8 ☐ TCPL ☐  
RCI ☐ TOX ☐ FLASHPOINT ☐  
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐  
pH ☐ HEXAVALENT CHROMIUM ☐  
EXPLOSIVES ☐ PECTHOLATE ☐  
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Time-17

11/25/23 1521

W

1

X

X

X

X

X



880-36200 Chain of Custody

TOTAL

1

RECEIVED BY Signature

DATE/TIME

RECEIVED BY Signature

DATE/TIME

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DATE/TIME

RELINQUISHED BY (Signature)

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LABORATORY

Ken

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RECEIVED BY (Signature)

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RECEIVED BY (Signature)

DATE/TIME

TURN AROUND TIME  
NORMAL ☐  
1 DAY ☒ Rush ☐  
2 DAY ☐  
OTHER ☐

LABORATORY USE ONLY:  
RECEIVING TEMP 33.3 THERM# 118  
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED  
☒ CARRIER BILL # \_\_\_\_\_  
☒ HAND DELIVERED

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-36200-1

SDG Number: 19-0112-49

Login Number: 36200

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/7/2023 3:03:15 PM

## JOB DESCRIPTION

EDBU #37  
19-0112-49

## JOB NUMBER

880-36641-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/7/2023 3:03:15 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Laboratory Job ID: 880-36641-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count



Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Job ID: 880-36641-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36641-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/7/2023 9:28 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 1.5°C

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68588 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Client Sample ID: TMW-19  
Date Collected: 12/06/23 10:38  
Date Received: 12/07/23 09:28

Lab Sample ID: 880-36641-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	1520	F1	25.0	mg/L			12/07/23 15:00	50	

Client Sample ID: TMW-20  
Date Collected: 12/06/23 14:07  
Date Received: 12/07/23 09:28

Lab Sample ID: 880-36641-2  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	289		5.00	mg/L			12/07/23 15:20	10	

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68588/3

Matrix: Water

Analysis Batch: 68588

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/07/23 14:40	1

Lab Sample ID: LCS 880-68588/4

Matrix: Water

Analysis Batch: 68588

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	26.06		mg/L		104	90 - 110

Lab Sample ID: LCSD 880-68588/5

Matrix: Water

Analysis Batch: 68588

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.40		mg/L		102	90 - 110	3	20

Lab Sample ID: 880-36641-1 MS

Matrix: Water

Analysis Batch: 68588

Client Sample ID: TMW-19

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1520	F1	1250	3078	F1	mg/L		124	90 - 110

Lab Sample ID: 880-36641-1 MSD

Matrix: Water

Analysis Batch: 68588

Client Sample ID: TMW-19

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1520	F1	1250	3073	F1	mg/L		124	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36641-1	TMW-19	Total/NA	Water	300.0	
880-36641-2	TMW-20	Total/NA	Water	300.0	
MB 880-68588/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68588/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68588/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36641-1 MS	TMW-19	Total/NA	Water	300.0	
880-36641-1 MSD	TMW-19	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Client Sample ID: TMW-19  
Date Collected: 12/06/23 10:38  
Date Received: 12/07/23 09:28

Lab Sample ID: 880-36641-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			68588	12/07/23 15:00	CH	EET MID

Client Sample ID: TMW-20  
Date Collected: 12/06/23 14:07  
Date Received: 12/07/23 09:28

Lab Sample ID: 880-36641-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			68588	12/07/23 15:20	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

- 1
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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-36641-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36641-1	TMW-19	Water	12/06/23 10:38	12/07/23 09:28
880-36641-2	TMW-20	Water	12/06/23 14:07	12/07/23 09:28

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**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Marienfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to: Robert Nelson / Mark Larson

DATE 12/6/2023 PAGE 1 OF 1  
PO#                      LAB WORK ORDER#                       
PROJECT LOCATION OR NAME EBDA 37  
LAI PROJECT # 14-0112-49 COLLECTOR DSH/RN

300041

No. 3226  
CHAIN-OF-CUSTODY

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

PRESERVATION

- ANALYSES**
- BTEX ☐ MTBE ☐
  - TPH 418 ☐ TPH 1005 ☐ TPH 1008 ☐
  - GASOLINE MOD 8015 ☐
  - DIESEL - MOD 8015 ☐
  - OIL - MOD 8015 ☐
  - VOC 8260 ☐
  - SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
  - 8081 PESTICIDES ☐ 8151 HERBICIDES ☐
  - 8082 PCBs ☐
  - TCLP - METALS (RCRA) ☐ TCLP VOC ☐
  - TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ OTHER LIST ☐
  - TOTAL METALS (RCRA) ☐ D W 200.8 ☐ TCLP ☐
  - LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐
  - ROI ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
  - pH ☐ HEXAVALENT CHROMIUM ☐ PECTHOLATE ☐
  - EXPLOSIVES ☐ ANIONS ☐ ALKALINITY ☐
  - CHLORIDES ☐

FIELD NOTES

Field Sample ID	Lab #	Date	Time	Matrix
MMW-19		12/6/23	1038	W
MMW-20		12/6/23	1407	W

# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED
1				X	
1				X	

Direct bill to  
Apache



TOTAL 2

RELINQUISHED BY (Signature)  
*[Signature]*

DATE/TIME  
12/7 9:38

RECEIVED BY (Signature)  
*[Signature]*

DATE/TIME  
12/10/23 9:28

TURN AROUND TIME  
NORMAL ☐  
1 DAY ☒ RUSH  
2 DAY ☐  
OTHER ☐

LABORATORY USE ONLY  
RECEIVING TEMP 13.5 THERM#                       
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED  
☐ CARRIER BILL #                       
☒ HAND DELIVERED

RELINQUISHED BY (Signature)  
*[Signature]*

DATE/TIME

RECEIVED BY (Signature)

LABORATORY

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-36641-1

SDG Number: 19-0112-49

Login Number: 36641

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/13/2023 5:25:36 PM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-36791-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/13/2023 5:25:36 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-36791-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Job ID: 880-36791-1

Laboratory: Eurofins Midland

Narrative

Job Narrative  
880-36791-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 12/12/2023 8:51 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Client Sample ID: TMW-22  
Date Collected: 12/11/23 10:47  
Date Received: 12/12/23 08:51

Lab Sample ID: 880-36791-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	268		5.00	mg/L			12/12/23 17:14	10	

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68938/3  
Matrix: Water  
Analysis Batch: 68938

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/12/23 16:54	1

Lab Sample ID: LCS 880-68938/4  
Matrix: Water  
Analysis Batch: 68938

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.61		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-68938/5  
Matrix: Water  
Analysis Batch: 68938

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.52		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36791-1 MS  
Matrix: Water  
Analysis Batch: 68938

Client Sample ID: TMW-22  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	268		250	528.5		mg/L		104	90 - 110

Lab Sample ID: 880-36791-1 MSD  
Matrix: Water  
Analysis Batch: 68938

Client Sample ID: TMW-22  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	268		250	529.9		mg/L		105	90 - 110	0	20

Eurofins Midland

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36791-1	TMW-22	Total/NA	Water	300.0	
MB 880-68938/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68938/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68938/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36791-1 MS	TMW-22	Total/NA	Water	300.0	
880-36791-1 MSD	TMW-22	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Client Sample ID: TMW-22  
Date Collected: 12/11/23 10:47  
Date Received: 12/12/23 08:51

Lab Sample ID: 880-36791-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68938	12/12/23 17:14	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-36791-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36791-1	TMW-22	Water	12/11/23 10:47	12/12/23 08:51

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36791 No. 3227  
CHAIN-OF-CUSTODY

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36791-1  
SDG Number: 19-0112-49

Login Number: 36791  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	





Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 12/19/2023 12:26:12 PM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-37049-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

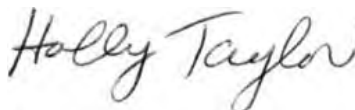
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
12/19/2023 12:26:12 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-37049-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project: EBDU #37

Job ID: 880-37049-1

Job ID: 880-37049-1

Eurofins Midland

Job Narrative  
880-37049-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 12/18/2023 10:42 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Midland



Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Client Sample ID: TMW-24  
Date Collected: 12/15/23 13:40  
Date Received: 12/18/23 10:42

Lab Sample ID: 880-37049-1  
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	262		5.00	mg/L			12/18/23 18:03	10	

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69322/3

Matrix: Water

Analysis Batch: 69322

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/18/23 17:43	1

Lab Sample ID: LCS 880-69322/4

Matrix: Water

Analysis Batch: 69322

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.54		mg/L		102	90 - 110

Lab Sample ID: LCSD 880-69322/5

Matrix: Water

Analysis Batch: 69322

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.72		mg/L		103	90 - 110	1	20

Lab Sample ID: 880-37049-1 MS

Matrix: Water

Analysis Batch: 69322

Client Sample ID: TMW-24

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	262		250	533.3		mg/L		108	90 - 110

Lab Sample ID: 880-37049-1 MSD

Matrix: Water

Analysis Batch: 69322

Client Sample ID: TMW-24

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	262		250	532.4		mg/L		108	90 - 110	0	20

Eurofins Midland

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 69322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37049-1	TMW-24	Total/NA	Water	300.0	
MB 880-69322/3	Method Blank	Total/NA	Water	300.0	
LCS 880-69322/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-69322/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-37049-1 MS	TMW-24	Total/NA	Water	300.0	
880-37049-1 MSD	TMW-24	Total/NA	Water	300.0	



Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Client Sample ID: TMW-24  
Date Collected: 12/15/23 13:40  
Date Received: 12/18/23 10:42

Lab Sample ID: 880-37049-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			69322	12/18/23 18:03	CH	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

- 1
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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

1
2
3
4
5
6
7
8
9
10
11
12
13

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37049-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37049-1	TMW-24	Water	12/15/23 13:40	12/18/23 10:42

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Arson & Associates, Inc.  
Environmental Consultants

507 N Warrenfield Ste 202  
Midland TX 79701  
432-687 0901

Date Reported to

Mark Jansen / Robert Nelson

DATE 12/15/2023  
PO#  
PROJECT LOCATION OR NAME E18014 #37  
LAI PROJECT # 19-012-49  
COLLECTOR DSG/RN  
LAB WORK ORDER#  
PAGE 1 OF 1

37049 No. 2355  
CHAIN-OF-CUSTODY

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State

Field Sample ID

Lab # Date Time Matrix

# of Containers

HCl  
HNO<sub>3</sub>  
H<sub>2</sub>SO<sub>4</sub> NaOH  
ICE

PRESERVATION

UNPRESERVED

ANALYSES

BTEX MTBE  
TPH 418.1 TPH 1005 TPH 1006  
GASOLINE MOD 8015  
DIESEL - MOD 8015  
OIL - MOD 8015  
VOC 8260  
SVOC 8270 PAH 8270 HOLDPAH  
8081 PESTICIDES 8151 HERBICIDES  
8082 PCBs  
TCF METALS (RCRA) TCF VOC  
TCF - PEST HERB Semi-VOC  
TOTAL METALS (RCRA) OTHER LIST  
LEAD - TOTAL DW 200.8 TCF  
RCL TOX FLASHPOINT  
TDS TSS % MOISTURE CYANIDE  
PH HEXAVALENT CHROMIUM  
EXPLOSIVES PECHLORATE  
CHLORIDE ANIONS ALKALINITY

FIELD NOTES

MMW-24 12/15/23 13:40

1 X

Direct Bill to Apache

TOTAL

UNQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

UNQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

UNQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

UNQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

TURN AROUND TIME  
NORMAL  
1 DAY  
2 DAY  
OTHER

LABORATORY USE ONLY:  
RECEIVING TEMP  
CUSTODY SEALS - BROKEN  
CARRIER BILL #

5.0/5.0

1228

880-37049 Chain of Custody



Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37049-1  
SDG Number: 19-0112-49

Login Number: 37049  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	

## **Attachment D**

### **Boring Logs and Well Completion Records**

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 11:26 Finish: DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,421.56' TOC Elevation: 3,424.35'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil			1	2	
	5	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche			2	8	
	15	Quartz Sand, 2.5YR 8/2 Pinkish White, Very Fine Grained				3	20	
	20	Quartz Sand, Well Rounded, Well Sorted						
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm				4	30	
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown						
	35							
	40		SW					
	45							
	50	Moist @ 50'				5	50	
	55							
	60	Water Injected				6	60	
	65							
	70							
	75							
	80	TD: 80.00'				7	80	
	85							

12/21/23  
57.12'

51.30  
53.30  
73.27  
73.95  
80.0

Bentonite Pellets

Graded Silica Sand

2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw

Cap

Slough

<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> ONE CONTINUOUS AUGER SAMPLER  <input type="checkbox"/> STANDARD PENETRATION TEST  <input type="checkbox"/> UNDISTURBED SAMPLE  <input type="checkbox"/> WATER TABLE ( 24 HRS ) </div> <div>  WATER TABLE ( TIME OF BORING )   LABORATORY TEST LOCATION   PENETROMETER ( TONS/ SQ. FT )   NO RECOVERY </div> </div>	<p>JOB NUMBER : <u>Apache/ 19-0112-49</u></p> <p>HOLE DIAMETER : <u>5"</u></p> <p>LOCATION : <u>EBDU # 37/</u> <span style="float: right;">32°28'52.4141", 103°07'19.7965"W</span></p> <p>LAI GEOLOGIST : <u>R. Nelson</u></p> <p>DRILLING CONTRACTOR : <u>SDI</u></p> <p>DRILLING METHOD : <u>Air Rotary</u></p>	<p>DRILL DATE : <u>11/29/23</u></p> <p>BORING NUMBER : <u>TMW-11</u></p>
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## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:25 Finish: DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,424.30' TOC Elevation: 3427.22'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING
								SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil			1	2	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche					
	10							
	15							
	18	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted				2	18	
	20	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm						
	25	Darker Color with depth, 7.5YR 5/6 Strong Brown				3	25	
	30							
	35					4	35	
	40		SW					
	45							
	50	Moist @ 50'						
	55							
	60	Water Injected				5	60	
	65							
	70							
	75							
	80	TD: 80.00'				6	80	
	85							

12/21/23  
58.73'

60.16  
62.16  
Graded Silica Sand  
2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw  
82.13  
82.81  
Cap

- ☐ ONE CONTINUOUS AUGER SAMPLER  
☐ STANDARD PENETRATION TEST  
☐ UNDISTURBED SAMPLE  
☐ WATER TABLE ( 24 HRS )

- ☐ WATER TABLE ( TIME OF BORING )  
☐ LABORATORY TEST LOCATION  
☐ PENETROMETER ( TONS/ SQ. FT )  
☐ NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'53.4598"N, 103°07'14.8709"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson & Associates, Inc.  
Environmental Consultants

DRILL DATE :  
11/30/23

BORING NUMBER :  
TMW-12

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:25 Finish: 11:13 MST DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,426.21' TOC Elevation: 3428.98'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil					BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained						
	20	Quartz Sand, Well Rounded, Well Sorted						
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈ 1-2mm						
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown						
	40		SW					
	45							
	50							
	55							
	60	Water Injected						
	65							
	70							
	75							
	80							
	85	TD: 85.00'						

12/20/23  
60.98'

61.24  
63.24

Graded Silica Sand  
2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw

83.21  
83.89  
85.0

Cap Slough

- ☐ ONE CONTINUOUS AUGER SAMPLER  
☐ STANDARD PENETRATION TEST  
☐ UNDISTURBED SAMPLE  
☐ WATER TABLE ( 24 HRS )

- ☐ WATER TABLE ( TIME OF BORING )  
☐ LABORATORY TEST LOCATION  
☐ PENETROMETER ( TONS/ SQ. FT )  
☐ NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'51.4724", -103°07'10.5589"

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson & Associates, Inc.  
Environmental Consultants

DRILL DATE :  
12/04/2023

BORING NUMBER :  
TMW-13

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 08:54 Finish: 10:15 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,426.76' TOC Elevation: 3,429.54'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil					BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche					
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained						
	20	Quartz Sand, Well Rounded, Well Sorted						
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted,						
	30	Quartz Clast ≈ 1-2mm						
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown						
	40		SW					
	45							
	50							
	55							
	60							
	65							
	70							
	75							
	80	TD: 80.00'						
	85							

12/20/23  
62.24'

62.96  
64.96

Graded Silica Sand

2" Sch. 40 PVC Threaded 0.0" Slotted Screw

84.93  
85.61

Cap

- ☐ ONE CONTINUOUS AUGER SAMPLER  
☐ STANDARD PENETRATION TEST  
☐ UNDISTURBED SAMPLE  
☐ WATER TABLE ( 24 HRS )

- WATER TABLE ( TIME OF BORING )  
 LABORATORY TEST LOCATION  
 PENETROMETER ( TONS/ SQ. FT )  
 NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'46.6967"N, 103°07'08.6721"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

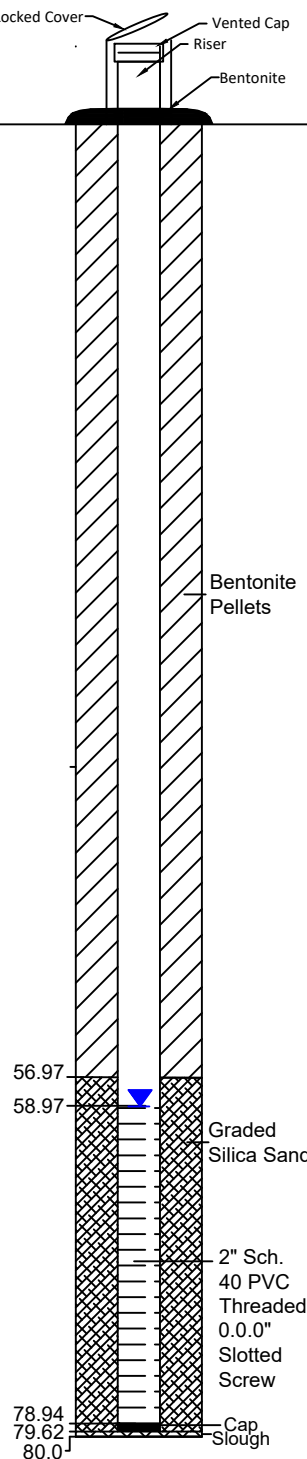
DRILL DATE :  
12/01/2023

BORING NUMBER :  
TMW-14

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: Finish: DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,423.18' TOC Elevation: 3,425.97'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING
								SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil			1	2	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche			2	13	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained				3	20	
	20	Quartz Sand, Well Rounded, Well Sorted						
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted,						
	30	Quartz Clast ≈ 1-2mm, Wet Darker Color with depth, 7.5YR 5/6 Strong Brown				4	30	
	35							
	40		SW					
	45							
	50							
	55							
	60	Moist, Water Injected						
	65							
	70							
	75							
	80	TD: 80.00'				5	80	
	85							

12/20/23  
59.00  
▽  
—



- ☐ ONE CONTINUOUS AUGER SAMPLER  
☐ STANDARD PENETRATION TEST  
☐ UNDISTURBED SAMPLE  
☐ WATER TABLE ( 24 HRS )

- ≡ WATER TABLE ( TIME OF BORING )  
 L LABORATORY TEST LOCATION  
 + PENETROMETER ( TONS/ SQ. FT )  
 NR NO RECOVERY

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
11/30/2023

BORING NUMBER :  
TMW-15

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'44.9502"N,  
103°07'11.7480"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:35 Finish: 10:17 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,420.73' TOC Elevation: 3,423.65'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Caliche Clast ≈ 10-20mm, Organic Material	Top Soil					
	3							
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche					
	8							
	10							
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted						
	20							
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm						
	30							
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown						
	40		SW					
	45							
	50							
	55	Moist						
	60	Water Injected						
	65							
	70							
	75							
	80	TD: 80.00'						
	85							

12/20/2023

57.27



59.14

61.14

Graded Silica Sand

2" Sch.  
40 PVC  
Threaded  
0.0.0" Slotted  
Screw

81.11

81.79

Cap

ONE CONTINUOUS AUGER SAMPLER

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

WATER TABLE ( 24 HRS )

WATER TABLE ( TIME OF BORING )

L LABORATORY TEST LOCATION

+ PENETROMETER ( TONS/ SQ. FT )

NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'42.8747"N,  
103°07'19.3738"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson &  
Associates, Inc.  
Environmental ConsultantsDRILL DATE :  
11/29/2023BORING NUMBER :  
TMW-16

OCD Ex. 6-0590

Page 1 of 1

BORING RECORD									
GEOLOGIC UNIT	DEPTH	Start: 10:15 Finish: DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,422.52' TOC Elevation: 3,425.68'			REMARKS	
						NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Sandy Clay, Poorly Graded Sand with Clay, 10YR 5/4	CH						
	5	Yellowish Brown, Quartz Clasts ~ 0-10mm in size, Moderately Sorted, Well Rounded				1		5	
	10	Caliche, 7.5YR 8/3 Pink, Clasts ~0-10mm, Moderately Sorted, Well Rounded	Caliche						
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Well Sorted, Well Rounded				2		15	
	20	Change in Color 7.5YR 6/8 Reddish Yellow				3		20	
	25								
	30								
	35								
	40		SW						
	45	Change in Color 5YR 5/8 Yellowish Red				4		45	
	50								
	55	Moist							
	60	Water Injected				5		57	
	65								
	70								
	75								
	80	TD: 80.00'				6		80	
	85								

12/20/2023  
58.40'

58.81

60.81

80.78

81.46

Bentonite Pellets

Graded Silica Sand

2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw

Cap

ONE CONTINUOUS AUGER SAMPLER

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

WATER TABLE ( 24 HRS )

WATER TABLE ( TIME OF BORING )

LABORATORY TEST LOCATION

PENETROMETER ( TONS/ SQ. FT )

NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'45.4199"N, 103°07'14.3198"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

DRILL DATE : 11/28/2023

BORING NUMBER : TMW-17

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

LA Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/28/2023

BORING NUMBER : TMW-17



## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:25 Finish: 10:25 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,422.29' TOC Elevation: 3,425.61'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
	0	Topsoil, 10YR 5/3 Brown, Organic Material	Top Soil					BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche					
	5	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted						
	10							
	12							
	15							
	20							
	25	7.5YR 6/4 Light Brown, Very Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈ 1-2mm						
	30							
	35							
	40	Darker Color with depth, 7.5YR 5/6, Strong Brown	SW					
	45							
	50							
	55							
	60	Water Injected						
	65							
	70							
	75							
	80							
	85	TD: 85.00'						

12/20/2023

58.83'



ONE CONTINUOUS AUGER SAMPLER

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

WATER TABLE ( 24 HRS )

WATER TABLE ( TIME OF BORING )

L LABORATORY TEST LOCATION

+ PENETROMETER ( TONS/ SQ. FT )

NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'41.3327", -103°07'13.9784"

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
12/05/2023

BORING NUMBER :  
TMW-18

OCD Ex. 6-0592

Page 1 of 1

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 12:15 Finish: 14:06 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,420.79' TOC Elevation: 3,423.79'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil					BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	2						1	2
	5	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	10							
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted					2	15
	20							
	25	Densely Packed					3	25
	30	Water Injected					4	30
	35							
	40		SW					
	45							
	50							
	55							
	60				57.66			
	65				59.66			
	70							
	75							
	80	TD: 80.00'			79.63		5	80
	85				80.31			

12/20/2023

57.93'



ONE CONTINUOUS AUGER SAMPLER

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

WATER TABLE ( 24 HRS )

WATER TABLE ( TIME OF BORING )

L LABORATORY TEST LOCATION

+ PENETROMETER ( TONS/ SQ. FT )

NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'39.6650", -103°07'20.1318"

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
12/05/2023

BORING NUMBER :  
TMW-19

OCD Ex. 6-0593

Page 1 of 1



## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:35 MST Finish: 11:25 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,426.46' TOC Elevation: 3,429.34'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil					
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	15	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm						
	20	Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted						
	30							
	35							
	40		SW					
	45							
	50							
	55							
	60	Water Injected						
	65							
	70							
	75							
	78	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD					
	80							
	85							
		TD: 80.00'						

12/20/23  
62.38'

- ☐ ONE CONTINUOUS AUGER SAMPLER  
☐ STANDARD PENETRATION TEST  
☐ UNDISTURBED SAMPLE  
☐ WATER TABLE ( 24 HRS )

- ☐ WATER TABLE ( TIME OF BORING )  
☐ LABORATORY TEST LOCATION  
☐ PENETROMETER ( TONS/ SQ. FT )  
☐ NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'43.1706", -103°07'07.6036"

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

Larson & Associates, Inc.  
Environmental Consultants

DRILL DATE :  
12/06/2023

BORING NUMBER :  
TMW-20

## BORING RECORD

GEOLOGIC UNIT		DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,429.87' TOC Elevation: 3,432.20'	REMARKS	
							NUMBER	RECOVERY
							DEPTH	
		0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil			1	2
		5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche			2	15
		20					3	25
		25	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm	SW				
		45	Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted					
		50						
		55						
		60	Water Injected					
		65						
		70						
		75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD			4	80
		80						
		85						

12/21/23  
64.98'



ONE CONTINUOUS AUGER SAMPLER



STANDARD PENETRATION TEST



UNDISTURBED SAMPLE



WATER TABLE ( 24 HRS )



WATER TABLE ( TIME OF BORING )



LABORATORY TEST LOCATION



PENETROMETER ( TONS/ SQ. FT )



NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ 32°28'48.6833", -103°07'04.2879"

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
12/07/2023

BORING NUMBER :  
TMW-21

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 13:26 Finish: 14:56 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,431.29' TOC Elevation: 3,434.17'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil				1	2
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained					2	15
	20	Quartz Sand, Well Rounded, Well Sorted						
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈ 1-2mm					3	25
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown					4	30
	35	Water Injected at 35'					5	35
	40							
	45		SW					
	50				47.37			
	55				49.37			
	60							
	65							
	70				69.34			
	73				70.02			
	75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dry	RD				6	75
	80							
	85							

12/20/23  
65.97'

JOB NUMBER : Apache/ 19-0112-49

HOLE DIAMETER : 5"

LOCATION : EBDU # 37/ -103°07'05.2315"W

LAI GEOLOGIST : R. Nelson

DRILLING CONTRACTOR : SDI

DRILLING METHOD : Air Rotary

**Larson & Associates, Inc.**  
Environmental Consultants

DRILL DATE :  
12/07/2023

BORING NUMBER :  
TMW-22

## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 09:55 Finish: 11:55 MST DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,421.28' TOC Elevation: 3,424.23'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil				1	2
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained					2	15
	20	Quartz Sand, Well Rounded, Well Sorted						
	25							
	30	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈ 1-2mm					3	30
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown						
	40	Water Injected at 40'	SW				4	40
	45							
	50							
	55							
	60							
	65							
	68							
	70	Silty Clay (Redbed) 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Demo Dry	RD				5	70
	75							
	80							
	85							

12/20/2023 58.56'

46.69

48.69

68.66

69.34

70.0

Bentonite Pellets

Graded Silica Sand

2" Sch. 40 PVC Threaded 0.0" Slotted Screw

Cap Slough

<input type="checkbox"/> ONE CONTINUOUS AUGER SAMPLER <input type="checkbox"/> STANDARD PENETRATION TEST <input type="checkbox"/> UNDISTURBED SAMPLE <input type="checkbox"/> WATER TABLE ( 24 HRS )	<input type="checkbox"/> WATER TABLE ( TIME OF BORING ) <input type="checkbox"/> LABORATORY TEST LOCATION <input type="checkbox"/> PENETROMETER ( TONS/ SQ. FT ) <input type="checkbox"/> NO RECOVERY	JOB NUMBER : <u>Apache/ 19-0112-49</u> HOLE DIAMETER : <u>5"</u> LOCATION : <u>EBDU # 37/</u> <span style="float: right;">32°28'35.92"N, 103°07'14.06"W</span> LAI GEOLOGIST : <u>R. Nelson</u> DRILLING CONTRACTOR : <u>SDI</u> DRILLING METHOD : <u>Air Rotary</u>
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	DRILL DATE : <u>12/13/2023</u>	BORING NUMBER : <u>TMW-23</u>
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## BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 13:45 Finish: 14:55 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	Surface Elevation: 3,418.54' TOC Elevation: 3,421.74'			REMARKS
					Locked Cover	Vented Cap Riser	Bentonite	
					NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil					
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche					
	20	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted						
	35	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈ 1-2mm	SW					
	40	Water Injected at 40'						
	63	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD					
	65	TD: 65.00'						
	70							
	75							
	80							
	85							

12/20/23  
56.21'

37.33  
39.33  
59.30  
59.98  
65.0

Bentonite Pellets  
Graded Silica Sand  
2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw  
Cap  
Slough

<input type="checkbox"/> ONE CONTINUOUS AUGER SAMPLER <input type="checkbox"/> STANDARD PENETRATION TEST <input type="checkbox"/> UNDISTURBED SAMPLE <input type="checkbox"/> WATER TABLE ( 24 HRS )	<input type="checkbox"/> WATER TABLE ( TIME OF BORING ) <input type="checkbox"/> LABORATORY TEST LOCATION <input type="checkbox"/> PENETROMETER ( TONS/ SQ. FT ) <input type="checkbox"/> NO RECOVERY	JOB NUMBER : <u>Apache/ 19-0112-49</u> HOLE DIAMETER : <u>5"</u> LOCATION : <u>EBDU # 37/</u> <span style="font-size: small;">32°28'36.33722"N 103°07'21.23108"W</span> LAI GEOLOGIST : <u>R. Nelson</u> DRILLING CONTRACTOR : <u>SDI</u> DRILLING METHOD : <u>Air Rotary</u>
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DRILL DATE : <div style="text-align: center;">12/13/2023</div>	BORING NUMBER : <div style="text-align: center;">TMW-24</div>	DRILLING CONTRACTOR : <u>SDI</u> DRILLING METHOD : <u>Air Rotary</u>
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## **Appendix E**

### **Monitoring Well Laboratory Reports**



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 3/22/2024 9:58:33 AM

## JOB DESCRIPTION

EBDU #37  
19-01112-49

## JOB NUMBER

880-40887-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

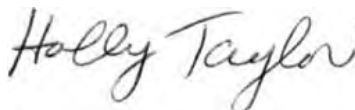
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
3/22/2024 9:58:33 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296



Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-40887-1  
SDG: 19-01112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Larson & Associates, Inc.  
Project: EBDU #37

Job ID: 880-40887-1

**Job ID: 880-40887-1**

**Eurofins Midland**

### Job Narrative 880-40887-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 3/15/2024 8:55 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 2.2°C.

#### Receipt Exceptions

The following samples were submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): TMW-1 (880-40887-1), TMW-2 (880-40887-2), TMW-3 (880-40887-3), TMW-4 (880-40887-4), TMW-5 (880-40887-5), TMW-6 (880-40887-6), TMW-7 (880-40887-7), TMW-8 (880-40887-8), TMW-9 (880-40887-9), TMW-10 (880-40887-10), TMW-11 (880-40887-11), TMW-12 (880-40887-12), TMW-13 (880-40887-13), Windmill (880-40887-14) and Dup-01 (880-40887-15)  
Sample 15

#### GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: Windmill (880-40887-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample duplicate (LCSD) for analytical batch 880-75949 recovered outside control limits for the following analytes: o-Xylene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-75765 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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.

Eurofins Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-1

Lab Sample ID: 880-40887-1

Date Collected: 03/14/24 09:54

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 21:52	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 21:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 21:52	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 21:52	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 21:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 21:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		70 - 130		03/19/24 21:52	1
1,4-Difluorobenzene (Surr)	92		70 - 130		03/19/24 21:52	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 21:52	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	136		2.50	mg/L			03/15/24 18:06	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	551		50.0	mg/L			03/15/24 20:09	1

Client Sample ID: TMW-2

Lab Sample ID: 880-40887-2

Date Collected: 03/14/24 10:42

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 22:13	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 22:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 22:13	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 22:13	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 22:13	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 22:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130		03/19/24 22:13	1
1,4-Difluorobenzene (Surr)	88		70 - 130		03/19/24 22:13	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 22:13	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	249		5.00	mg/L			03/15/24 18:12	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	992		50.0	mg/L			03/15/24 20:09	1

Eurofins Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-3

Lab Sample ID: 880-40887-3

Date Collected: 03/14/24 10:20

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 22:33	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 22:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 22:33	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 22:33	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 22:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 22:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130		03/19/24 22:33	1
1,4-Difluorobenzene (Surr)	87		70 - 130		03/19/24 22:33	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 22:33	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	234		5.00	mg/L			03/15/24 18:18	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	959		50.0	mg/L			03/15/24 20:09	1

Client Sample ID: TMW-4

Lab Sample ID: 880-40887-4

Date Collected: 03/14/24 12:49

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 22:54	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 22:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 22:54	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 22:54	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 22:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 22:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130		03/19/24 22:54	1
1,4-Difluorobenzene (Surr)	84		70 - 130		03/19/24 22:54	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 22:54	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	580		10.0	mg/L			03/15/24 18:24	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1750		100	mg/L			03/15/24 20:09	1

Eurofins Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-5

Lab Sample ID: 880-40887-5

Date Collected: 03/14/24 13:03

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 23:14	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 23:14	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 23:14	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 23:14	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 23:14	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130		03/19/24 23:14	1
1,4-Difluorobenzene (Surr)	86		70 - 130		03/19/24 23:14	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 23:14	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2980	F1	25.0	mg/L			03/15/24 18:30	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5360		200	mg/L			03/15/24 20:09	1

Client Sample ID: TMW-6

Lab Sample ID: 880-40887-6

Date Collected: 03/14/24 13:16

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 23:35	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 23:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 23:35	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 23:35	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 23:35	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 23:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130		03/19/24 23:35	1
1,4-Difluorobenzene (Surr)	90		70 - 130		03/19/24 23:35	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 23:35	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500		25.0	mg/L			03/15/24 18:49	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3280		200	mg/L			03/15/24 20:09	1

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-7  
Date Collected: 03/14/24 12:35  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-7  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 23:55	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 23:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 23:55	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 23:55	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/19/24 23:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 23:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		70 - 130				03/19/24 23:55	1
1,4-Difluorobenzene (Surr)	92		70 - 130				03/19/24 23:55	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/19/24 23:55	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1740		25.0	mg/L			03/15/24 18:55	50

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3690		200	mg/L			03/15/24 20:09	1

Client Sample ID: TMW-8  
Date Collected: 03/14/24 11:00  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-8  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 00:16	1
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 00:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 00:16	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 00:16	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 00:16	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 00:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130				03/20/24 00:16	1
1,4-Difluorobenzene (Surr)	87		70 - 130				03/20/24 00:16	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 00:16	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	655		10.0	mg/L			03/15/24 19:13	20

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1830		100	mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-9  
Date Collected: 03/14/24 10:03  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-9  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 00:36	1
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 00:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 00:36	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 00:36	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 00:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 00:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130				03/20/24 00:36	1
1,4-Difluorobenzene (Surr)	78		70 - 130				03/20/24 00:36	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 00:36	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.3		2.50	mg/L			03/15/24 19:20	5

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	373		50.0	mg/L			03/15/24 20:09	1

Client Sample ID: TMW-10  
Date Collected: 03/14/24 09:44  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-10  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 00:57	1
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 00:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 00:57	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 00:57	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 00:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 00:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130				03/20/24 00:57	1
1,4-Difluorobenzene (Surr)	86		70 - 130				03/20/24 00:57	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 00:57	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.0		2.50	mg/L			03/15/24 19:26	5

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	405		50.0	mg/L			03/15/24 20:09	1



Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-11  
Date Collected: 03/14/24 11:14  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-11  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 02:20	1	
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 02:20	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 02:20	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 02:20	1	
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 02:20	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 02:20	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
4-Bromofluorobenzene (Surr)	78		70 - 130				03/20/24 02:20	1	
1,4-Difluorobenzene (Surr)	90		70 - 130				03/20/24 02:20	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 02:20	1	

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	318		5.00	mg/L			03/15/24 19:32	10	

General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total Dissolved Solids (SM 2540C)	1090		50.0	mg/L			03/15/24 20:09	1	

Client Sample ID: TMW-12  
Date Collected: 03/14/24 11:30  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-12  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 02:41	1	
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 02:41	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 02:41	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 02:41	1	
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 02:41	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 02:41	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
4-Bromofluorobenzene (Surr)	77		70 - 130				03/20/24 02:41	1	
1,4-Difluorobenzene (Surr)	90		70 - 130				03/20/24 02:41	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 02:41	1	

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	448		5.00	mg/L			03/15/24 19:38	10	

General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total Dissolved Solids (SM 2540C)	1390		100	mg/L			03/15/24 20:09	1	

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-13

Lab Sample ID: 880-40887-13

Date Collected: 03/14/24 13:29

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 03:01	1
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 03:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 03:01	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 03:01	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 03:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 03:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130		03/20/24 03:01	1
1,4-Difluorobenzene (Surr)	89		70 - 130		03/20/24 03:01	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 03:01	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1690		25.0	mg/L			03/15/24 19:44	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3480		200	mg/L			03/15/24 20:09	1

Client Sample ID: Windmill

Lab Sample ID: 880-40887-14

Date Collected: 03/14/24 09:30

Matrix: Water

Date Received: 03/15/24 08:55

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 03:22	1
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 03:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 03:22	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 03:22	1
o-Xylene	<0.00200	U *	0.00200	mg/L			03/20/24 03:22	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 03:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130		03/20/24 03:22	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130		03/20/24 03:22	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 03:22	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	471		5.00	mg/L			03/15/24 19:50	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1080		50.0	mg/L			03/15/24 20:09	1

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: Dup-01  
Date Collected: 03/14/24 00:00  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-15  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/L			03/20/24 03:42	1	
Toluene	<0.00200	U	0.00200	mg/L			03/20/24 03:42	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/20/24 03:42	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/20/24 03:42	1	
o-Xylene	<0.00200	U *+	0.00200	mg/L			03/20/24 03:42	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/20/24 03:42	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	78		70 - 130				03/20/24 03:42	1	
1,4-Difluorobenzene (Surr)	90		70 - 130				03/20/24 03:42	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00400	U	0.00400	mg/L			03/20/24 03:42	1	
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	328		5.00	mg/L			03/19/24 08:16	10	
General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total Dissolved Solids (SM 2540C)	986		50.0	mg/L			03/15/24 20:09	1	

Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-40887-1	TMW-1	76	92
880-40887-1 MS	TMW-1	112	100
880-40887-1 MSD	TMW-1	117	112
880-40887-2	TMW-2	82	88
880-40887-3	TMW-3	81	87
880-40887-4	TMW-4	82	84
880-40887-5	TMW-5	81	86
880-40887-6	TMW-6	78	90
880-40887-7	TMW-7	80	92
880-40887-8	TMW-8	83	87
880-40887-9	TMW-9	95	78
880-40887-10	TMW-10	79	86
880-40887-11	TMW-11	78	90
880-40887-12	TMW-12	77	90
880-40887-13	TMW-13	78	89
880-40887-14	Windmill	92	69 S1-
880-40887-15	Dup-01	78	90
LCS 880-75949/34	Lab Control Sample	112	90
LCSD 880-75949/35	Lab Control Sample Dup	117	107
MB 880-75818/5-A	Method Blank	71	92
MB 880-75949/39	Method Blank	71	90
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-75818/5-A

Matrix: Water

Analysis Batch: 75949

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 75818

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L		03/18/24 10:27	03/19/24 10:55	1
Toluene	<0.00200	U	0.00200	mg/L		03/18/24 10:27	03/19/24 10:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/L		03/18/24 10:27	03/19/24 10:55	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L		03/18/24 10:27	03/19/24 10:55	1
o-Xylene	<0.00200	U	0.00200	mg/L		03/18/24 10:27	03/19/24 10:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/L		03/18/24 10:27	03/19/24 10:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130	03/18/24 10:27	03/19/24 10:55	1
1,4-Difluorobenzene (Surr)	92		70 - 130	03/18/24 10:27	03/19/24 10:55	1

Lab Sample ID: MB 880-75949/39

Matrix: Water

Analysis Batch: 75949

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/19/24 21:31	1
Toluene	<0.00200	U	0.00200	mg/L			03/19/24 21:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/19/24 21:31	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/19/24 21:31	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/19/24 21:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/19/24 21:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130		03/19/24 21:31	1
1,4-Difluorobenzene (Surr)	90		70 - 130		03/19/24 21:31	1

Lab Sample ID: LCS 880-75949/34

Matrix: Water

Analysis Batch: 75949

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08666		mg/L		87	70 - 130
Toluene	0.100	0.09146		mg/L		91	70 - 130
Ethylbenzene	0.100	0.1067		mg/L		107	70 - 130
m,p-Xylenes	0.200	0.2117		mg/L		106	70 - 130
o-Xylene	0.100	0.1070		mg/L		107	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: LCSD 880-75949/35

Matrix: Water

Analysis Batch: 75949

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1043		mg/L		104	70 - 130	19	20

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-75949/35  
Matrix: Water  
Analysis Batch: 75949

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike		LCSD	LCSD	Unit	D	%Rec	%Rec		RPD
	Added	Result	Qualifier	Limit				Limits	RPD	
Toluene	0.100	0.09786			mg/L		98	70 - 130	7	20
Ethylbenzene	0.100	0.1096			mg/L		110	70 - 130	3	20
m,p-Xylenes	0.200	0.2154			mg/L		108	70 - 130	2	20
o-Xylene	0.100	0.1307	*+		mg/L		131	70 - 130	20	20
Surrogate		LCSD	LCSD	Limits						
		%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)		117		70 - 130						
1,4-Difluorobenzene (Surr)		107		70 - 130						

Lab Sample ID: 880-40887-1 MS  
Matrix: Water  
Analysis Batch: 75949

Client Sample ID: TMW-1  
Prep Type: Total/NA

Analyte	Sample		Spike	MS		Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	RPD
Benzene	<0.00200	U	0.100	0.1035		mg/L		103	70 - 130	
Toluene	<0.00200	U	0.100	0.1054		mg/L		105	70 - 130	
Ethylbenzene	<0.00200	U	0.100	0.1257		mg/L		126	70 - 130	
m,p-Xylenes	<0.00400	U	0.200	0.2430		mg/L		122	70 - 130	
o-Xylene	<0.00200	U *	0.100	0.1228		mg/L		123	70 - 130	
Surrogate		MS	MS	Limits						
		%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)		112		70 - 130						
1,4-Difluorobenzene (Surr)		100		70 - 130						

Lab Sample ID: 880-40887-1 MSD  
Matrix: Water  
Analysis Batch: 75949

Client Sample ID: TMW-1  
Prep Type: Total/NA

Analyte	Sample		Spike	MSD		Unit	D	%Rec	%Rec		RPD
	Result	Qualifier		Result	Qualifier				Limits	RPD	
Benzene	<0.00200	U	0.100	0.1121		mg/L		112	70 - 130	8	25
Toluene	<0.00200	U	0.100	0.1080		mg/L		108	70 - 130	2	25
Ethylbenzene	<0.00200	U	0.100	0.1257		mg/L		126	70 - 130	0	25
m,p-Xylenes	<0.00400	U	0.200	0.2522		mg/L		126	70 - 130	4	25
o-Xylene	<0.00200	U *	0.100	0.1274		mg/L		127	70 - 130	4	25
Surrogate		MSD	MSD	Limits							
		%Recovery	Qualifier								
4-Bromofluorobenzene (Surr)		117		70 - 130							
1,4-Difluorobenzene (Surr)		112		70 - 130							

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-75676/3  
Matrix: Water  
Analysis Batch: 75676

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<0.500	U	0.500	mg/L			03/19/24 05:58	1

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-75676/4

Matrix: Water

Analysis Batch: 75676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.93		mg/L		104	90 - 110

Lab Sample ID: LCSD 880-75676/5

Matrix: Water

Analysis Batch: 75676

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	25.97		mg/L		104	90 - 110	0	20

Lab Sample ID: MB 880-75765/3

Matrix: Water

Analysis Batch: 75765

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			03/15/24 16:46	1

Lab Sample ID: LCS 880-75765/4

Matrix: Water

Analysis Batch: 75765

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	24.00		mg/L		96	90 - 110

Lab Sample ID: LCSD 880-75765/5

Matrix: Water

Analysis Batch: 75765

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	23.04		mg/L		92	90 - 110	4	20

Lab Sample ID: 880-40887-5 MS

Matrix: Water

Analysis Batch: 75765

Client Sample ID: TMW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2980	F1	1250	4453	F1	mg/L		118	90 - 110

Lab Sample ID: 880-40887-5 MSD

Matrix: Water

Analysis Batch: 75765

Client Sample ID: TMW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2980	F1	1250	4385	F1	mg/L		112	90 - 110	2	20

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-75768/1 Matrix: Water Analysis Batch: 75768										Client Sample ID: Method Blank Prep Type: Total/NA	
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Total Dissolved Solids	<25.0	U	25.0	mg/L			03/15/24 20:09	1			

Lab Sample ID: LCS 880-75768/2 Matrix: Water Analysis Batch: 75768										Client Sample ID: Lab Control Sample Prep Type: Total/NA	
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	981.0		mg/L		98	80 - 120		

Lab Sample ID: LCSD 880-75768/3 Matrix: Water Analysis Batch: 75768										Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA	
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	984.0		mg/L		98	80 - 120	0	10

Lab Sample ID: 880-40887-8 DU Matrix: Water Analysis Batch: 75768										Client Sample ID: TMW-8 Prep Type: Total/NA	
Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1830			1798		mg/L				2	10



QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

GC VOA

Prep Batch: 75818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-75818/5-A	Method Blank	Total/NA	Water	5035	

Analysis Batch: 75949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	8021B	
880-40887-2	TMW-2	Total/NA	Water	8021B	
880-40887-3	TMW-3	Total/NA	Water	8021B	
880-40887-4	TMW-4	Total/NA	Water	8021B	
880-40887-5	TMW-5	Total/NA	Water	8021B	
880-40887-6	TMW-6	Total/NA	Water	8021B	
880-40887-7	TMW-7	Total/NA	Water	8021B	
880-40887-8	TMW-8	Total/NA	Water	8021B	
880-40887-9	TMW-9	Total/NA	Water	8021B	
880-40887-10	TMW-10	Total/NA	Water	8021B	
880-40887-11	TMW-11	Total/NA	Water	8021B	
880-40887-12	TMW-12	Total/NA	Water	8021B	
880-40887-13	TMW-13	Total/NA	Water	8021B	
880-40887-14	Windmill	Total/NA	Water	8021B	
880-40887-15	Dup-01	Total/NA	Water	8021B	
MB 880-75818/5-A	Method Blank	Total/NA	Water	8021B	75818
MB 880-75949/39	Method Blank	Total/NA	Water	8021B	
LCS 880-75949/34	Lab Control Sample	Total/NA	Water	8021B	
LCS 880-75949/35	Lab Control Sample Dup	Total/NA	Water	8021B	
880-40887-1 MS	TMW-1	Total/NA	Water	8021B	
880-40887-1 MSD	TMW-1	Total/NA	Water	8021B	

Analysis Batch: 76087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	Total BTEX	
880-40887-2	TMW-2	Total/NA	Water	Total BTEX	
880-40887-3	TMW-3	Total/NA	Water	Total BTEX	
880-40887-4	TMW-4	Total/NA	Water	Total BTEX	
880-40887-5	TMW-5	Total/NA	Water	Total BTEX	
880-40887-6	TMW-6	Total/NA	Water	Total BTEX	
880-40887-7	TMW-7	Total/NA	Water	Total BTEX	
880-40887-8	TMW-8	Total/NA	Water	Total BTEX	
880-40887-9	TMW-9	Total/NA	Water	Total BTEX	
880-40887-10	TMW-10	Total/NA	Water	Total BTEX	
880-40887-11	TMW-11	Total/NA	Water	Total BTEX	
880-40887-12	TMW-12	Total/NA	Water	Total BTEX	
880-40887-13	TMW-13	Total/NA	Water	Total BTEX	
880-40887-14	Windmill	Total/NA	Water	Total BTEX	
880-40887-15	Dup-01	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 75676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-15	Dup-01	Total/NA	Water	300.0	
MB 880-75676/3	Method Blank	Total/NA	Water	300.0	
LCS 880-75676/4	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

HPLC/IC (Continued)

Analysis Batch: 75676 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-75676/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 75765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	300.0	
880-40887-2	TMW-2	Total/NA	Water	300.0	
880-40887-3	TMW-3	Total/NA	Water	300.0	
880-40887-4	TMW-4	Total/NA	Water	300.0	
880-40887-5	TMW-5	Total/NA	Water	300.0	
880-40887-6	TMW-6	Total/NA	Water	300.0	
880-40887-7	TMW-7	Total/NA	Water	300.0	
880-40887-8	TMW-8	Total/NA	Water	300.0	
880-40887-9	TMW-9	Total/NA	Water	300.0	
880-40887-10	TMW-10	Total/NA	Water	300.0	
880-40887-11	TMW-11	Total/NA	Water	300.0	
880-40887-12	TMW-12	Total/NA	Water	300.0	
880-40887-13	TMW-13	Total/NA	Water	300.0	
880-40887-14	Windmill	Total/NA	Water	300.0	
MB 880-75765/3	Method Blank	Total/NA	Water	300.0	
LCS 880-75765/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-75765/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40887-5 MS	TMW-5	Total/NA	Water	300.0	
880-40887-5 MSD	TMW-5	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 75768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	SM 2540C	
880-40887-2	TMW-2	Total/NA	Water	SM 2540C	
880-40887-3	TMW-3	Total/NA	Water	SM 2540C	
880-40887-4	TMW-4	Total/NA	Water	SM 2540C	
880-40887-5	TMW-5	Total/NA	Water	SM 2540C	
880-40887-6	TMW-6	Total/NA	Water	SM 2540C	
880-40887-7	TMW-7	Total/NA	Water	SM 2540C	
880-40887-8	TMW-8	Total/NA	Water	SM 2540C	
880-40887-9	TMW-9	Total/NA	Water	SM 2540C	
880-40887-10	TMW-10	Total/NA	Water	SM 2540C	
880-40887-11	TMW-11	Total/NA	Water	SM 2540C	
880-40887-12	TMW-12	Total/NA	Water	SM 2540C	
880-40887-13	TMW-13	Total/NA	Water	SM 2540C	
880-40887-14	Windmill	Total/NA	Water	SM 2540C	
880-40887-15	Dup-01	Total/NA	Water	SM 2540C	
MB 880-75768/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-75768/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-75768/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-40887-8 DU	TMW-8	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-1  
Date Collected: 03/14/24 09:54  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 21:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 21:52	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 18:06	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-2  
Date Collected: 03/14/24 10:42  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:13	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 18:12	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-3  
Date Collected: 03/14/24 10:20  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:33	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 18:18	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-4  
Date Collected: 03/14/24 12:49  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:54	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	75765	03/15/24 18:24	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-5  
Date Collected: 03/14/24 13:03  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-5  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:14	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:30	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-6  
Date Collected: 03/14/24 13:16  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-6  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:35	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-7  
Date Collected: 03/14/24 12:35  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-7  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:55	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:55	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-8  
Date Collected: 03/14/24 11:00  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-8  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:16	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	75765	03/15/24 19:13	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-9  
Date Collected: 03/14/24 10:03  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-9  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:36	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 19:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-10  
Date Collected: 03/14/24 09:44  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-10  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:57	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 19:26	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Client Sample ID: TMW-11  
Date Collected: 03/14/24 11:14  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-11  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 02:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 02:20	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:32	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-12  
Date Collected: 03/14/24 11:30  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-12  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 02:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 02:41	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-13  
Date Collected: 03/14/24 13:29  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-13  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:01	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 19:44	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: Windmill  
Date Collected: 03/14/24 09:30  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-14  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:22	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:50	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: Dup-01  
Date Collected: 03/14/24 00:00  
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-15  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:42	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75676	03/19/24 08:16	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

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Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

**Protocol References:**

EPA = US Environmental Protection Agency

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.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-40887-1  
SDG: 19-01112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-40887-1	TMW-1	Water	03/14/24 09:54	03/15/24 08:55
880-40887-2	TMW-2	Water	03/14/24 10:42	03/15/24 08:55
880-40887-3	TMW-3	Water	03/14/24 10:20	03/15/24 08:55
880-40887-4	TMW-4	Water	03/14/24 12:49	03/15/24 08:55
880-40887-5	TMW-5	Water	03/14/24 13:03	03/15/24 08:55
880-40887-6	TMW-6	Water	03/14/24 13:16	03/15/24 08:55
880-40887-7	TMW-7	Water	03/14/24 12:35	03/15/24 08:55
880-40887-8	TMW-8	Water	03/14/24 11:00	03/15/24 08:55
880-40887-9	TMW-9	Water	03/14/24 10:03	03/15/24 08:55
880-40887-10	TMW-10	Water	03/14/24 09:44	03/15/24 08:55
880-40887-11	TMW-11	Water	03/14/24 11:14	03/15/24 08:55
880-40887-12	TMW-12	Water	03/14/24 11:30	03/15/24 08:55
880-40887-13	TMW-13	Water	03/14/24 13:29	03/15/24 08:55
880-40887-14	Windmill	Water	03/14/24 09:30	03/15/24 08:55
880-40887-15	Dup-01	Water	03/14/24 00:00	03/15/24 08:55

887 No. 3070  
CHAIN-OF-CUSTODY

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-40887-1

SDG Number: 19-01112-49

Login Number: 40887

List Number: 1

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 3/27/2024 10:54:02 AM

## JOB DESCRIPTION

EDBU #37  
19-0112-49

## JOB NUMBER

880-40975-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

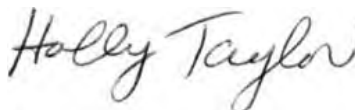
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



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Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Laboratory Job ID: 880-40975-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	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)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Larson & Associates, Inc.  
Project: EDBU #37

Job ID: 880-40975-1

**Job ID: 880-40975-1**

**Eurofins Midland**

### Job Narrative 880-40975-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 3/18/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C.

#### GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-76563/8). Evidence of matrix interferences is not obvious.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-76122 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

TMW-14 (880-40975-1), TMW-15 (880-40975-2), TMW-16 (880-40975-3), TMW-17 (880-40975-4), TMW-18 (880-40975-5), TMW-19 (880-40975-6), TMW-20 (880-40975-7), TMW-21 (880-40975-8), TMW-22 (880-40975-9), TMW-23 (880-40975-10), (880-40975-B-1 MS) and (880-40975-B-1 MSD)

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.

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-14

Lab Sample ID: 880-40975-1

Date Collected: 03/15/24 09:09

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 12:18	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 12:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 12:18	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 12:18	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 12:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130		03/26/24 12:18	1
1,4-Difluorobenzene (Surr)	81		70 - 130		03/26/24 12:18	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 12:18	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1810	F1	25.0	mg/L			03/20/24 17:19	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2820		200	mg/L			03/19/24 18:00	1

Client Sample ID: TMW-15

Lab Sample ID: 880-40975-2

Date Collected: 03/15/24 09:30

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 12:45	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 12:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 12:45	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 12:45	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 12:45	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 12:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130		03/26/24 12:45	1
1,4-Difluorobenzene (Surr)	79		70 - 130		03/26/24 12:45	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 12:45	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2160		25.0	mg/L			03/20/24 17:38	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3400		200	mg/L			03/19/24 18:00	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-16

Lab Sample ID: 880-40975-3

Date Collected: 03/15/24 10:15

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 13:12	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 13:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 13:12	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 13:12	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 13:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 13:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130		03/26/24 13:12	1
1,4-Difluorobenzene (Surr)	84		70 - 130		03/26/24 13:12	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 13:12	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.0		2.50	mg/L			03/20/24 17:44	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	380		50.0	mg/L			03/19/24 18:00	1

Client Sample ID: TMW-17

Lab Sample ID: 880-40975-4

Date Collected: 03/15/24 10:00

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 13:39	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 13:39	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 13:39	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 13:39	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 13:39	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130		03/26/24 13:39	1
1,4-Difluorobenzene (Surr)	85		70 - 130		03/26/24 13:39	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 13:39	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5680		25.0	mg/L			03/20/24 18:02	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	8930		500	mg/L			03/19/24 18:00	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-18

Lab Sample ID: 880-40975-5

Date Collected: 03/15/24 09:40

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 14:06	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 14:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 14:06	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 14:06	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 14:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130		03/26/24 14:06	1
1,4-Difluorobenzene (Surr)	94		70 - 130		03/26/24 14:06	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 14:06	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	908		10.0	mg/L			03/20/24 18:09	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1650		100	mg/L			03/19/24 18:00	1

Client Sample ID: TMW-19

Lab Sample ID: 880-40975-6

Date Collected: 03/15/24 10:35

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 14:32	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 14:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 14:32	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 14:32	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 14:32	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 14:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130		03/26/24 14:32	1
1,4-Difluorobenzene (Surr)	82		70 - 130		03/26/24 14:32	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 14:32	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	553		5.00	mg/L			03/20/24 18:15	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1070		50.0	mg/L			03/19/24 18:00	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-20

Lab Sample ID: 880-40975-7

Date Collected: 03/15/24 12:15

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 14:59	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 14:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 14:59	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 14:59	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 14:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 14:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130		03/26/24 14:59	1
1,4-Difluorobenzene (Surr)	82		70 - 130		03/26/24 14:59	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 14:59	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	385		5.00	mg/L			03/20/24 18:21	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	937		50.0	mg/L			03/19/24 18:00	1

Client Sample ID: TMW-21

Lab Sample ID: 880-40975-8

Date Collected: 03/15/24 12:29

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 15:26	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 15:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 15:26	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 15:26	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 15:26	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130		03/26/24 15:26	1
1,4-Difluorobenzene (Surr)	89		70 - 130		03/26/24 15:26	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 15:26	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	310		2.50	mg/L			03/20/24 18:27	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	902		50.0	mg/L			03/19/24 18:00	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-22

Lab Sample ID: 880-40975-9

Date Collected: 03/15/24 13:30

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 15:53	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 15:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 15:53	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 15:53	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 15:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130		03/26/24 15:53	1
1,4-Difluorobenzene (Surr)	94		70 - 130		03/26/24 15:53	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 15:53	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	342		5.00	mg/L			03/20/24 18:33	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	918		50.0	mg/L			03/19/24 18:00	1

Client Sample ID: TMW-23

Lab Sample ID: 880-40975-10

Date Collected: 03/15/24 12:00

Matrix: Water

Date Received: 03/18/24 09:00

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 16:20	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 16:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 16:20	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 16:20	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 16:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130		03/26/24 16:20	1
1,4-Difluorobenzene (Surr)	85		70 - 130		03/26/24 16:20	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 16:20	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1020		10.0	mg/L			03/20/24 18:39	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2020		100	mg/L			03/19/24 18:00	1

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-24  
Date Collected: 03/15/24 11:45  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-11  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 18:08	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 18:08	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 18:08	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 18:08	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 18:08	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 18:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130				03/26/24 18:08	1
1,4-Difluorobenzene (Surr)	89		70 - 130				03/26/24 18:08	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 18:08	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	330		5.00	mg/L			03/20/24 19:28	10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1060		50.0	mg/L			03/19/24 18:00	1

Client Sample ID: Dup-2  
Date Collected: 03/15/24 00:00  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-12  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 18:33	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 18:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 18:33	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 18:33	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 18:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 18:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130				03/26/24 18:33	1
1,4-Difluorobenzene (Surr)	85		70 - 130				03/26/24 18:33	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			03/26/24 18:33	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1330		10.0	mg/L			03/20/24 19:47	20

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2530		200	mg/L			03/19/24 18:00	1

Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-40975-1	TMW-14	82	81
880-40975-1 MS	TMW-14	85	94
880-40975-1 MSD	TMW-14	84	75
880-40975-2	TMW-15	86	79
880-40975-3	TMW-16	91	84
880-40975-4	TMW-17	89	85
880-40975-5	TMW-18	99	94
880-40975-6	TMW-19	87	82
880-40975-7	TMW-20	86	82
880-40975-8	TMW-21	92	89
880-40975-9	TMW-22	95	94
880-40975-10	TMW-23	93	85
880-40975-11	TMW-24	90	89
880-40975-12	Dup-2	87	85
LCS 880-76563/3	Lab Control Sample	80	93
LCSD 880-76563/4	Lab Control Sample Dup	83	92
MB 880-76563/8	Method Blank	54 S1-	85
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-76563/8				Client Sample ID: Method Blank				
Matrix: Water				Prep Type: Total/NA				
Analysis Batch: 76563								
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			03/26/24 11:52	1
Toluene	<0.00200	U	0.00200	mg/L			03/26/24 11:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			03/26/24 11:52	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			03/26/24 11:52	1
o-Xylene	<0.00200	U	0.00200	mg/L			03/26/24 11:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			03/26/24 11:52	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	54	S1-	70 - 130				03/26/24 11:52	1
1,4-Difluorobenzene (Surr)	85		70 - 130				03/26/24 11:52	1

Lab Sample ID: LCS 880-76563/3					Client Sample ID: Lab Control Sample					
Matrix: Water					Prep Type: Total/NA					
Analysis Batch: 76563										
Analyte	Spike		LCS	LCS	Unit	D	%Rec	%Rec		
	Added	Result	Qualifier	Limits						
Benzene	0.100	0.1017			mg/L		102	70 - 130		
Toluene	0.100	0.1065			mg/L		107	70 - 130		
Ethylbenzene	0.100	0.1016			mg/L		102	70 - 130		
m,p-Xylenes	0.200	0.2051			mg/L		103	70 - 130		
o-Xylene	0.100	0.1056			mg/L		106	70 - 130		
Surrogate	LCS		LCS	Limits						
	%Recovery	Qualifier								
4-Bromofluorobenzene (Surr)	80			70 - 130						
1,4-Difluorobenzene (Surr)	93			70 - 130						

Lab Sample ID: LCSD 880-76563/4					Client Sample ID: Lab Control Sample Dup							
Matrix: Water					Prep Type: Total/NA							
Analysis Batch: 76563												
Analyte				Spike	LCSD	LCSD	Unit	D	%Rec	RPD	Limit	
				Added	Result	Qualifier			%Rec			Limits
Benzene				0.100	0.08710		mg/L		87	70 - 130	15	20
Toluene				0.100	0.09196		mg/L		92	70 - 130	15	20
Ethylbenzene				0.100	0.08790		mg/L		88	70 - 130	14	20
m,p-Xylenes				0.200	0.1814		mg/L		91	70 - 130	12	20
o-Xylene				0.100	0.09050		mg/L		91	70 - 130	15	20
Surrogate	LCSD		LCSD	Limits								
	%Recovery	Qualifier										
4-Bromofluorobenzene (Surr)	83			70 - 130								
1,4-Difluorobenzene (Surr)	92			70 - 130								

Lab Sample ID: 880-40975-1 MS								Client Sample ID: TMW-14			
Matrix: Water								Prep Type: Total/NA			
Analysis Batch: 76563											
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	<0.00200	U	0.100	0.08796		mg/L		87	70 - 130		
Toluene	<0.00200	U	0.100	0.09427		mg/L		94	70 - 130		

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-40975-1 MS

Client Sample ID: TMW-14

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 76563

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.08690		mg/L		87	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1747		mg/L		87	70 - 130
o-Xylene	<0.00200	U	0.100	0.09102		mg/L		91	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	85		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 880-40975-1 MSD

Client Sample ID: TMW-14

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 76563

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.07976		mg/L		79	70 - 130	10	25
Toluene	<0.00200	U	0.100	0.08910		mg/L		88	70 - 130	6	25
Ethylbenzene	<0.00200	U	0.100	0.07970		mg/L		80	70 - 130	9	25
m,p-Xylenes	<0.00400	U	0.200	0.1630		mg/L		82	70 - 130	7	25
o-Xylene	<0.00200	U	0.100	0.08579		mg/L		86	70 - 130	6	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	75		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-76122/3

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 76122

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			03/20/24 15:35	1

Lab Sample ID: LCS 880-76122/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 76122

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	24.16		mg/L		97	90 - 110

Lab Sample ID: LCSD 880-76122/5

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 76122

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	24.18		mg/L		97	90 - 110	0	20

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-40975-1 MS

Matrix: Water

Analysis Batch: 76122

Client Sample ID: TMW-14

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1810	F1	1250	2879	F1	mg/L		85	90 - 110

Lab Sample ID: 880-40975-1 MSD

Matrix: Water

Analysis Batch: 76122

Client Sample ID: TMW-14

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1810	F1	1250	2821	F1	mg/L		81	90 - 110	2	20

Lab Sample ID: MB 880-76126/3

Matrix: Water

Analysis Batch: 76126

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			03/20/24 19:10	1

Lab Sample ID: LCS 880-76126/4

Matrix: Water

Analysis Batch: 76126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	24.61		mg/L		98	90 - 110

Lab Sample ID: LCSD 880-76126/5

Matrix: Water

Analysis Batch: 76126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	24.59		mg/L		98	90 - 110	0	20

Lab Sample ID: 880-40975-11 MS

Matrix: Water

Analysis Batch: 76126

Client Sample ID: TMW-24

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	330		250	578.5		mg/L		99	90 - 110

Lab Sample ID: 880-40975-11 MSD

Matrix: Water

Analysis Batch: 76126

Client Sample ID: TMW-24

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	330		250	578.0		mg/L		99	90 - 110	0	20

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-76041/1  
Matrix: Water  
Analysis Batch: 76041

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0	mg/L			03/19/24 18:00	1

Lab Sample ID: LCS 880-76041/2  
Matrix: Water  
Analysis Batch: 76041

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	983.0		mg/L		98	80 - 120

Lab Sample ID: LCSD 880-76041/3  
Matrix: Water  
Analysis Batch: 76041

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	80 - 120	4	10

Lab Sample ID: 880-40975-1 DU  
Matrix: Water  
Analysis Batch: 76041

Client Sample ID: TMW-14  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2820		2824		mg/L		0	10

Lab Sample ID: 880-40975-11 DU  
Matrix: Water  
Analysis Batch: 76041

Client Sample ID: TMW-24  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1060		1091		mg/L		3	10

## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

## GC VOA

## Analysis Batch: 76563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	8021B	
880-40975-2	TMW-15	Total/NA	Water	8021B	
880-40975-3	TMW-16	Total/NA	Water	8021B	
880-40975-4	TMW-17	Total/NA	Water	8021B	
880-40975-5	TMW-18	Total/NA	Water	8021B	
880-40975-6	TMW-19	Total/NA	Water	8021B	
880-40975-7	TMW-20	Total/NA	Water	8021B	
880-40975-8	TMW-21	Total/NA	Water	8021B	
880-40975-9	TMW-22	Total/NA	Water	8021B	
880-40975-10	TMW-23	Total/NA	Water	8021B	
880-40975-11	TMW-24	Total/NA	Water	8021B	
880-40975-12	Dup-2	Total/NA	Water	8021B	
MB 880-76563/8	Method Blank	Total/NA	Water	8021B	
LCS 880-76563/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-76563/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-40975-1 MS	TMW-14	Total/NA	Water	8021B	
880-40975-1 MSD	TMW-14	Total/NA	Water	8021B	

## Analysis Batch: 76704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	Total BTEX	
880-40975-2	TMW-15	Total/NA	Water	Total BTEX	
880-40975-3	TMW-16	Total/NA	Water	Total BTEX	
880-40975-4	TMW-17	Total/NA	Water	Total BTEX	
880-40975-5	TMW-18	Total/NA	Water	Total BTEX	
880-40975-6	TMW-19	Total/NA	Water	Total BTEX	
880-40975-7	TMW-20	Total/NA	Water	Total BTEX	
880-40975-8	TMW-21	Total/NA	Water	Total BTEX	
880-40975-9	TMW-22	Total/NA	Water	Total BTEX	
880-40975-10	TMW-23	Total/NA	Water	Total BTEX	
880-40975-11	TMW-24	Total/NA	Water	Total BTEX	
880-40975-12	Dup-2	Total/NA	Water	Total BTEX	

## HPLC/IC

## Analysis Batch: 76122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	300.0	
880-40975-2	TMW-15	Total/NA	Water	300.0	
880-40975-3	TMW-16	Total/NA	Water	300.0	
880-40975-4	TMW-17	Total/NA	Water	300.0	
880-40975-5	TMW-18	Total/NA	Water	300.0	
880-40975-6	TMW-19	Total/NA	Water	300.0	
880-40975-7	TMW-20	Total/NA	Water	300.0	
880-40975-8	TMW-21	Total/NA	Water	300.0	
880-40975-9	TMW-22	Total/NA	Water	300.0	
880-40975-10	TMW-23	Total/NA	Water	300.0	
MB 880-76122/3	Method Blank	Total/NA	Water	300.0	
LCS 880-76122/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-76122/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40975-1 MS	TMW-14	Total/NA	Water	300.0	

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## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

## HPLC/IC (Continued)

## Analysis Batch: 76122 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1 MSD	TMW-14	Total/NA	Water	300.0	

## Analysis Batch: 76126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-11	TMW-24	Total/NA	Water	300.0	
880-40975-12	Dup-2	Total/NA	Water	300.0	
MB 880-76126/3	Method Blank	Total/NA	Water	300.0	
LCS 880-76126/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-76126/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40975-11 MS	TMW-24	Total/NA	Water	300.0	
880-40975-11 MSD	TMW-24	Total/NA	Water	300.0	

## General Chemistry

## Analysis Batch: 76041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	SM 2540C	
880-40975-2	TMW-15	Total/NA	Water	SM 2540C	
880-40975-3	TMW-16	Total/NA	Water	SM 2540C	
880-40975-4	TMW-17	Total/NA	Water	SM 2540C	
880-40975-5	TMW-18	Total/NA	Water	SM 2540C	
880-40975-6	TMW-19	Total/NA	Water	SM 2540C	
880-40975-7	TMW-20	Total/NA	Water	SM 2540C	
880-40975-8	TMW-21	Total/NA	Water	SM 2540C	
880-40975-9	TMW-22	Total/NA	Water	SM 2540C	
880-40975-10	TMW-23	Total/NA	Water	SM 2540C	
880-40975-11	TMW-24	Total/NA	Water	SM 2540C	
880-40975-12	Dup-2	Total/NA	Water	SM 2540C	
MB 880-76041/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-76041/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-76041/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-40975-1 DU	TMW-14	Total/NA	Water	SM 2540C	
880-40975-11 DU	TMW-24	Total/NA	Water	SM 2540C	

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-14  
Date Collected: 03/15/24 09:09  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 12:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 12:18	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 17:19	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-15  
Date Collected: 03/15/24 09:30  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 12:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 12:45	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 17:38	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-16  
Date Collected: 03/15/24 10:15  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 13:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 13:12	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	76122	03/20/24 17:44	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-17  
Date Collected: 03/15/24 10:00  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 13:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 13:39	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 18:02	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-18  
Date Collected: 03/15/24 09:40  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-5  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:06	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76122	03/20/24 18:09	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

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Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-19  
Date Collected: 03/15/24 10:35  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-6  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:32	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:15	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-20  
Date Collected: 03/15/24 12:15  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-7  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:59	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:21	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-21  
Date Collected: 03/15/24 12:29  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-8  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 15:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 15:26	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	76122	03/20/24 18:27	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-22  
Date Collected: 03/15/24 13:30  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-9  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 15:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 15:53	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:33	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-23  
Date Collected: 03/15/24 12:00  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-10  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 16:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 16:20	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76122	03/20/24 18:39	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Client Sample ID: TMW-24  
Date Collected: 03/15/24 11:45  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-11  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 18:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 18:08	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76126	03/20/24 19:28	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: Dup-2  
Date Collected: 03/15/24 00:00  
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-12  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 18:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 18:33	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76126	03/20/24 19:47	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

**Protocol References:**

EPA = US Environmental Protection Agency

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.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EDBU #37

Job ID: 880-40975-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-40975-1	TMW-14	Water	03/15/24 09:09	03/18/24 09:00
880-40975-2	TMW-15	Water	03/15/24 09:30	03/18/24 09:00
880-40975-3	TMW-16	Water	03/15/24 10:15	03/18/24 09:00
880-40975-4	TMW-17	Water	03/15/24 10:00	03/18/24 09:00
880-40975-5	TMW-18	Water	03/15/24 09:40	03/18/24 09:00
880-40975-6	TMW-19	Water	03/15/24 10:35	03/18/24 09:00
880-40975-7	TMW-20	Water	03/15/24 12:15	03/18/24 09:00
880-40975-8	TMW-21	Water	03/15/24 12:29	03/18/24 09:00
880-40975-9	TMW-22	Water	03/15/24 13:30	03/18/24 09:00
880-40975-10	TMW-23	Water	03/15/24 12:00	03/18/24 09:00
880-40975-11	TMW-24	Water	03/15/24 11:45	03/18/24 09:00
880-40975-12	Dup-2	Water	03/15/24 00:00	03/18/24 09:00





Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-40975-1  
SDG Number: 19-0112-49

Login Number: 40975  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 1/2/2024 8:18:03 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-37226-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

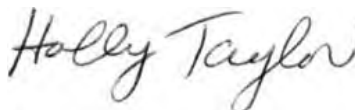
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



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1/2/2024 8:18:03 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-37226-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
U	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)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Larson & Associates, Inc.  
Project: EBDU #37

Job ID: 880-37226-1

**Job ID: 880-37226-1**

**Eurofins Midland**

### Job Narrative 880-37226-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 12/21/2023 9:42 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 8.5°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: TMW-17 (880-37226-1), TMW-16 (880-37226-2), TMW-19 (880-37226-3), TMW-24 (880-37226-4), TMW-23 (880-37226-5), Windmill (880-37226-6), TMW-20 (880-37226-7), TMW-21 (880-37226-8), TMW-22 (880-37226-9), TMW-18 (880-37226-10), TMW-15 (880-37226-11), TMW-13 (880-37226-12), TMW-14 (880-37226-13), TMW-6 (880-37226-14), TMW-5 (880-37226-15), TMW-4 (880-37226-16), TMW-7 (880-37226-17), TMW-8 (880-37226-18) and Dup-1 (880-37226-19).

#### GC VOA

Method 8021B: The surrogate recovery for the blank associated with analytical batch 880-69717 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-69667 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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.

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-17

Lab Sample ID: 880-37226-1

Date Collected: 12/20/23 08:45

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F2	0.00200	mg/L			12/23/23 21:06	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 21:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 21:06	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 21:06	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 21:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 21:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130		12/23/23 21:06	1
1,4-Difluorobenzene (Surr)	93		70 - 130		12/23/23 21:06	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 21:06	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5850		25.0	mg/L			12/23/23 00:07	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	10300		500	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-16

Lab Sample ID: 880-37226-2

Date Collected: 12/20/23 08:59

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 21:32	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 21:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 21:32	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 21:32	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 21:32	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 21:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130		12/23/23 21:32	1
1,4-Difluorobenzene (Surr)	111		70 - 130		12/23/23 21:32	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 21:32	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85.5		2.50	mg/L			12/23/23 00:31	5

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	495		50.0	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-19

Lab Sample ID: 880-37226-3

Date Collected: 12/20/23 09:20

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 21:58	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 21:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 21:58	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 21:58	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 21:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 21:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130		12/23/23 21:58	1
1,4-Difluorobenzene (Surr)	90		70 - 130		12/23/23 21:58	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 21:58	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	927		10.0	mg/L			12/23/23 00:38	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1860		100	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-24

Lab Sample ID: 880-37226-4

Date Collected: 12/20/23 09:35

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 22:24	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 22:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 22:24	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 22:24	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 22:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130		12/23/23 22:24	1
1,4-Difluorobenzene (Surr)	71		70 - 130		12/23/23 22:24	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 22:24	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	271		5.00	mg/L			12/23/23 00:46	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1050		50.0	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-23

Lab Sample ID: 880-37226-5

Date Collected: 12/20/23 09:45

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 22:51	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 22:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 22:51	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 22:51	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 22:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 22:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130		12/23/23 22:51	1
1,4-Difluorobenzene (Surr)	90		70 - 130		12/23/23 22:51	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 22:51	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	895		10.0	mg/L			12/23/23 00:54	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1980		100	mg/L			12/22/23 12:48	1

Client Sample ID: Windmill

Lab Sample ID: 880-37226-6

Date Collected: 12/20/23 09:15

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 23:17	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 23:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 23:17	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 23:17	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 23:17	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 23:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130		12/23/23 23:17	1
1,4-Difluorobenzene (Surr)	95		70 - 130		12/23/23 23:17	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 23:17	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	409		5.00	mg/L			12/23/23 01:18	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1010		50.0	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-20

Lab Sample ID: 880-37226-7

Date Collected: 12/20/23 10:14

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 23:44	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 23:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 23:44	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 23:44	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 23:44	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 23:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130		12/23/23 23:44	1
1,4-Difluorobenzene (Surr)	108		70 - 130		12/23/23 23:44	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/23/23 23:44	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	287		5.00	mg/L			12/23/23 01:26	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	927		50.0	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-21

Lab Sample ID: 880-37226-8

Date Collected: 12/20/23 10:30

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 00:10	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 00:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 00:10	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 00:10	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 00:10	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 00:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130		12/24/23 00:10	1
1,4-Difluorobenzene (Surr)	85		70 - 130		12/24/23 00:10	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 00:10	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	262		5.00	mg/L			12/23/23 01:33	10

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	885		50.0	mg/L			12/22/23 12:48	1

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-22  
Date Collected: 12/20/23 10:44  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 00:36	1	
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 00:36	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 00:36	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 00:36	1	
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 00:36	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 00:36	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
4-Bromofluorobenzene (Surr)	96		70 - 130				12/24/23 00:36	1	
1,4-Difluorobenzene (Surr)	74		70 - 130				12/24/23 00:36	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 00:36	1	

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	270		5.00	mg/L			12/23/23 01:41	10	

General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total Dissolved Solids (SM 2540C)	939		50.0	mg/L			12/22/23 12:48	1	

Client Sample ID: TMW-18  
Date Collected: 12/20/23 11:25  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 01:03	1	
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 01:03	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 01:03	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 01:03	1	
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 01:03	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 01:03	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
4-Bromofluorobenzene (Surr)	121		70 - 130				12/24/23 01:03	1	
1,4-Difluorobenzene (Surr)	103		70 - 130				12/24/23 01:03	1	

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 01:03	1	

Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	2050		25.0	mg/L			12/23/23 01:49	50	

General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Total Dissolved Solids (SM 2540C)	6430		200	mg/L			12/22/23 12:48	1	

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-15

Lab Sample ID: 880-37226-11

Date Collected: 12/20/23 11:42

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 02:48	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 02:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 02:48	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 02:48	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 02:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 02:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130		12/24/23 02:48	1
1,4-Difluorobenzene (Surr)	70		70 - 130		12/24/23 02:48	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 02:48	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2120	F1	25.0	mg/L			12/23/23 01:57	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3870		200	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-13

Lab Sample ID: 880-37226-12

Date Collected: 12/20/23 12:16

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 03:15	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 03:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 03:15	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 03:15	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 03:15	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 03:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130		12/24/23 03:15	1
1,4-Difluorobenzene (Surr)	68	S1-	70 - 130		12/24/23 03:15	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 03:15	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1730		25.0	mg/L			12/23/23 02:20	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3680		200	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-14

Lab Sample ID: 880-37226-13

Date Collected: 12/20/23 12:00

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 03:41	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 03:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 03:41	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 03:41	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 03:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 03:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130		12/24/23 03:41	1
1,4-Difluorobenzene (Surr)	118		70 - 130		12/24/23 03:41	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 03:41	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500		25.0	mg/L			12/23/23 02:28	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5140		200	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-6

Lab Sample ID: 880-37226-14

Date Collected: 12/20/23 12:30

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 04:08	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 04:08	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 04:08	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 04:08	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 04:08	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 04:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130		12/24/23 04:08	1
1,4-Difluorobenzene (Surr)	85		70 - 130		12/24/23 04:08	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 04:08	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1570		25.0	mg/L			12/23/23 02:52	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3070		200	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-5

Lab Sample ID: 880-37226-15

Date Collected: 12/20/23 12:43

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 04:34	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 04:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 04:34	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 04:34	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 04:34	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 04:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130		12/24/23 04:34	1
1,4-Difluorobenzene (Surr)	100		70 - 130		12/24/23 04:34	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 04:34	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2320		25.0	mg/L			12/23/23 03:00	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4250		200	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-4

Lab Sample ID: 880-37226-16

Date Collected: 12/20/23 13:00

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 05:01	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 05:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 05:01	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 05:01	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 05:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 05:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130		12/24/23 05:01	1
1,4-Difluorobenzene (Surr)	121		70 - 130		12/24/23 05:01	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 05:01	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	598		10.0	mg/L			12/23/23 03:08	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1750		100	mg/L			12/22/23 12:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-7

Lab Sample ID: 880-37226-17

Date Collected: 12/20/23 13:13

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 05:27	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 05:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 05:27	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 05:27	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 05:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 05:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130		12/24/23 05:27	1
1,4-Difluorobenzene (Surr)	94		70 - 130		12/24/23 05:27	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 05:27	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1770		25.0	mg/L			12/23/23 03:16	50

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3720		200	mg/L			12/22/23 12:48	1

Client Sample ID: TMW-8

Lab Sample ID: 880-37226-18

Date Collected: 12/20/23 13:32

Matrix: Water

Date Received: 12/21/23 09:42

## Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 05:54	1
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 05:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 05:54	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 05:54	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 05:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 05:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130		12/24/23 05:54	1
1,4-Difluorobenzene (Surr)	98		70 - 130		12/24/23 05:54	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 05:54	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	709		10.0	mg/L			12/23/23 03:23	20

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1840		100	mg/L			12/22/23 12:48	1

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Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: Dup-1  
Date Collected: 12/20/23 00:00  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19  
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/L			12/24/23 06:20	1	
Toluene	<0.00200	U	0.00200	mg/L			12/24/23 06:20	1	
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/24/23 06:20	1	
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/24/23 06:20	1	
o-Xylene	<0.00200	U	0.00200	mg/L			12/24/23 06:20	1	
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/24/23 06:20	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	116		70 - 130				12/24/23 06:20	1	
1,4-Difluorobenzene (Surr)	102		70 - 130				12/24/23 06:20	1	
Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00400	U	0.00400	mg/L			12/24/23 06:20	1	
Method: EPA 300.0 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	5830		25.0	mg/L			12/23/23 03:31	50	
General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total Dissolved Solids (SM 2540C)	10300		500	mg/L			12/22/23 12:48	1	

Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-37226-1	TMW-17	92	93
880-37226-1 MS	TMW-17	129	113
880-37226-1 MSD	TMW-17	108	111
880-37226-2	TMW-16	120	111
880-37226-3	TMW-19	95	90
880-37226-4	TMW-24	129	71
880-37226-5	TMW-23	108	90
880-37226-6	Windmill	114	95
880-37226-7	TMW-20	112	108
880-37226-8	TMW-21	107	85
880-37226-9	TMW-22	96	74
880-37226-10	TMW-18	121	103
880-37226-11	TMW-15	81	70
880-37226-12	TMW-13	123	68 S1-
880-37226-13	TMW-14	113	118
880-37226-14	TMW-6	103	85
880-37226-15	TMW-5	119	100
880-37226-16	TMW-4	114	121
880-37226-17	TMW-7	112	94
880-37226-18	TMW-8	101	98
880-37226-19	Dup-1	116	102
LCS 880-69717/3	Lab Control Sample	100	95
LCSD 880-69717/4	Lab Control Sample Dup	121	108
MB 880-69717/8	Method Blank	60 S1-	88

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69717/8

Matrix: Water

Analysis Batch: 69717

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/L			12/23/23 20:40	1
Toluene	<0.00200	U	0.00200	mg/L			12/23/23 20:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/L			12/23/23 20:40	1
m,p-Xylenes	<0.00400	U	0.00400	mg/L			12/23/23 20:40	1
o-Xylene	<0.00200	U	0.00200	mg/L			12/23/23 20:40	1
Xylenes, Total	<0.00400	U	0.00400	mg/L			12/23/23 20:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	60	S1-	70 - 130		12/23/23 20:40	1
1,4-Difluorobenzene (Surr)	88		70 - 130		12/23/23 20:40	1

Lab Sample ID: LCS 880-69717/3

Matrix: Water

Analysis Batch: 69717

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07869		mg/L		79	70 - 130
Toluene	0.100	0.07281		mg/L		73	70 - 130
Ethylbenzene	0.100	0.07420		mg/L		74	70 - 130
m,p-Xylenes	0.200	0.1528		mg/L		76	70 - 130
o-Xylene	0.100	0.07922		mg/L		79	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-69717/4

Matrix: Water

Analysis Batch: 69717

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08671		mg/L		87	70 - 130	10	20
Toluene	0.100	0.08545		mg/L		85	70 - 130	16	20
Ethylbenzene	0.100	0.09013		mg/L		90	70 - 130	19	20
m,p-Xylenes	0.200	0.1740		mg/L		87	70 - 130	13	20
o-Xylene	0.100	0.08666		mg/L		87	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 880-37226-1 MS

Matrix: Water

Analysis Batch: 69717

Client Sample ID: TMW-17

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F2	0.100	0.1037		mg/L		104	70 - 130
Toluene	<0.00200	U	0.100	0.08379		mg/L		84	70 - 130

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-37226-1 MS

Client Sample ID: TMW-17

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 69717

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.09322		mg/L		93	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1651		mg/L		83	70 - 130
o-Xylene	<0.00200	U	0.100	0.1004		mg/L		100	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-37226-1 MSD

Client Sample ID: TMW-17

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 69717

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F2	0.100	0.07590	F2	mg/L		76	70 - 130	31	25
Toluene	<0.00200	U	0.100	0.08334		mg/L		83	70 - 130	1	25
Ethylbenzene	<0.00200	U	0.100	0.08083		mg/L		81	70 - 130	14	25
m,p-Xylenes	<0.00400	U	0.200	0.1639		mg/L		82	70 - 130	1	25
o-Xylene	<0.00200	U	0.100	0.08708		mg/L		87	70 - 130	14	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69667/3

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 69667

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			12/22/23 23:43	1

Lab Sample ID: LCS 880-69667/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 69667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	23.63		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-69667/5

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 69667

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	23.60		mg/L		94	90 - 110	0	20

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-37226-1 MS  
Matrix: Water  
Analysis Batch: 69667

Client Sample ID: TMW-17  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	5850		1250	6811	4	mg/L		77	90 - 110		

Lab Sample ID: 880-37226-1 MSD  
Matrix: Water  
Analysis Batch: 69667

Client Sample ID: TMW-17  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5850		1250	6795	4	mg/L		76	90 - 110	0	20

Lab Sample ID: 880-37226-11 MS  
Matrix: Water  
Analysis Batch: 69667

Client Sample ID: TMW-15  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	2120	F1	1250	3322		mg/L		97	90 - 110		

Lab Sample ID: 880-37226-11 MSD  
Matrix: Water  
Analysis Batch: 69667

Client Sample ID: TMW-15  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2120	F1	1250	3195	F1	mg/L		86	90 - 110	4	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-69658/1  
Matrix: Water  
Analysis Batch: 69658

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0	mg/L			12/22/23 12:48	1

Lab Sample ID: LCS 880-69658/2  
Matrix: Water  
Analysis Batch: 69658

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids	1000	970.0		mg/L		97	80 - 120		

Lab Sample ID: LCSD 880-69658/3  
Matrix: Water  
Analysis Batch: 69658

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	985.0		mg/L		99	80 - 120	2	10

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 880-37226-1 DU				Client Sample ID: TMW-17			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 69658							
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD Limit
Total Dissolved Solids	10300		10340		mg/L		0.6 10

Lab Sample ID: 880-37226-11 DU				Client Sample ID: TMW-15			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 69658							
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD Limit
Total Dissolved Solids	3870		3948		mg/L		2 10

## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

## GC VOA

## Analysis Batch: 69717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	8021B	
880-37226-2	TMW-16	Total/NA	Water	8021B	
880-37226-3	TMW-19	Total/NA	Water	8021B	
880-37226-4	TMW-24	Total/NA	Water	8021B	
880-37226-5	TMW-23	Total/NA	Water	8021B	
880-37226-6	Windmill	Total/NA	Water	8021B	
880-37226-7	TMW-20	Total/NA	Water	8021B	
880-37226-8	TMW-21	Total/NA	Water	8021B	
880-37226-9	TMW-22	Total/NA	Water	8021B	
880-37226-10	TMW-18	Total/NA	Water	8021B	
880-37226-11	TMW-15	Total/NA	Water	8021B	
880-37226-12	TMW-13	Total/NA	Water	8021B	
880-37226-13	TMW-14	Total/NA	Water	8021B	
880-37226-14	TMW-6	Total/NA	Water	8021B	
880-37226-15	TMW-5	Total/NA	Water	8021B	
880-37226-16	TMW-4	Total/NA	Water	8021B	
880-37226-17	TMW-7	Total/NA	Water	8021B	
880-37226-18	TMW-8	Total/NA	Water	8021B	
880-37226-19	Dup-1	Total/NA	Water	8021B	
MB 880-69717/8	Method Blank	Total/NA	Water	8021B	
LCS 880-69717/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-69717/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-37226-1 MS	TMW-17	Total/NA	Water	8021B	
880-37226-1 MSD	TMW-17	Total/NA	Water	8021B	

## Analysis Batch: 69798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	Total BTEX	
880-37226-2	TMW-16	Total/NA	Water	Total BTEX	
880-37226-3	TMW-19	Total/NA	Water	Total BTEX	
880-37226-4	TMW-24	Total/NA	Water	Total BTEX	
880-37226-5	TMW-23	Total/NA	Water	Total BTEX	
880-37226-6	Windmill	Total/NA	Water	Total BTEX	
880-37226-7	TMW-20	Total/NA	Water	Total BTEX	
880-37226-8	TMW-21	Total/NA	Water	Total BTEX	
880-37226-9	TMW-22	Total/NA	Water	Total BTEX	
880-37226-10	TMW-18	Total/NA	Water	Total BTEX	
880-37226-11	TMW-15	Total/NA	Water	Total BTEX	
880-37226-12	TMW-13	Total/NA	Water	Total BTEX	
880-37226-13	TMW-14	Total/NA	Water	Total BTEX	
880-37226-14	TMW-6	Total/NA	Water	Total BTEX	
880-37226-15	TMW-5	Total/NA	Water	Total BTEX	
880-37226-16	TMW-4	Total/NA	Water	Total BTEX	
880-37226-17	TMW-7	Total/NA	Water	Total BTEX	
880-37226-18	TMW-8	Total/NA	Water	Total BTEX	
880-37226-19	Dup-1	Total/NA	Water	Total BTEX	

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QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

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Analysis Batch: 69667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	300.0	
880-37226-2	TMW-16	Total/NA	Water	300.0	
880-37226-3	TMW-19	Total/NA	Water	300.0	
880-37226-4	TMW-24	Total/NA	Water	300.0	
880-37226-5	TMW-23	Total/NA	Water	300.0	
880-37226-6	Windmill	Total/NA	Water	300.0	
880-37226-7	TMW-20	Total/NA	Water	300.0	
880-37226-8	TMW-21	Total/NA	Water	300.0	
880-37226-9	TMW-22	Total/NA	Water	300.0	
880-37226-10	TMW-18	Total/NA	Water	300.0	
880-37226-11	TMW-15	Total/NA	Water	300.0	
880-37226-12	TMW-13	Total/NA	Water	300.0	
880-37226-13	TMW-14	Total/NA	Water	300.0	
880-37226-14	TMW-6	Total/NA	Water	300.0	
880-37226-15	TMW-5	Total/NA	Water	300.0	
880-37226-16	TMW-4	Total/NA	Water	300.0	
880-37226-17	TMW-7	Total/NA	Water	300.0	
880-37226-18	TMW-8	Total/NA	Water	300.0	
880-37226-19	Dup-1	Total/NA	Water	300.0	
MB 880-69667/3	Method Blank	Total/NA	Water	300.0	
LCS 880-69667/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-69667/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-37226-1 MS	TMW-17	Total/NA	Water	300.0	
880-37226-1 MSD	TMW-17	Total/NA	Water	300.0	
880-37226-11 MS	TMW-15	Total/NA	Water	300.0	
880-37226-11 MSD	TMW-15	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 69658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	SM 2540C	
880-37226-2	TMW-16	Total/NA	Water	SM 2540C	
880-37226-3	TMW-19	Total/NA	Water	SM 2540C	
880-37226-4	TMW-24	Total/NA	Water	SM 2540C	
880-37226-5	TMW-23	Total/NA	Water	SM 2540C	
880-37226-6	Windmill	Total/NA	Water	SM 2540C	
880-37226-7	TMW-20	Total/NA	Water	SM 2540C	
880-37226-8	TMW-21	Total/NA	Water	SM 2540C	
880-37226-9	TMW-22	Total/NA	Water	SM 2540C	
880-37226-10	TMW-18	Total/NA	Water	SM 2540C	
880-37226-11	TMW-15	Total/NA	Water	SM 2540C	
880-37226-12	TMW-13	Total/NA	Water	SM 2540C	
880-37226-13	TMW-14	Total/NA	Water	SM 2540C	
880-37226-14	TMW-6	Total/NA	Water	SM 2540C	
880-37226-15	TMW-5	Total/NA	Water	SM 2540C	
880-37226-16	TMW-4	Total/NA	Water	SM 2540C	
880-37226-17	TMW-7	Total/NA	Water	SM 2540C	
880-37226-18	TMW-8	Total/NA	Water	SM 2540C	
880-37226-19	Dup-1	Total/NA	Water	SM 2540C	
MB 880-69658/1	Method Blank	Total/NA	Water	SM 2540C	

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QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

General Chemistry (Continued)

Analysis Batch: 69658 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-69658/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-69658/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-37226-1 DU	TMW-17	Total/NA	Water	SM 2540C	
880-37226-11 DU	TMW-15	Total/NA	Water	SM 2540C	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-17  
Date Collected: 12/20/23 08:45  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:06	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 00:07	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-16  
Date Collected: 12/20/23 08:59  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:32	AJ	EET MID
Total/NA	Analysis	300.0		5	50 mL	50 mL	69667	12/23/23 00:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-19  
Date Collected: 12/20/23 09:20  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:58	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-24  
Date Collected: 12/20/23 09:35  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:24	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 00:46	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-23  
Date Collected: 12/20/23 09:45  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-5  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:51	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:54	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

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Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: Windmill  
Date Collected: 12/20/23 09:15  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-6  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:17	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:18	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-20  
Date Collected: 12/20/23 10:14  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-7  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:44	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:26	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-21  
Date Collected: 12/20/23 10:30  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-8  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:10	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:33	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-22  
Date Collected: 12/20/23 10:44  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:36	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:41	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-18  
Date Collected: 12/20/23 11:25  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 01:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 01:03	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-15  
Date Collected: 12/20/23 11:42  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-11  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 02:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 02:48	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:57	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-13  
Date Collected: 12/20/23 12:16  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-12  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:15	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-14  
Date Collected: 12/20/23 12:00  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-13  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:41	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:28	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-6  
Date Collected: 12/20/23 12:30  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-14  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:08	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:52	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-5  
Date Collected: 12/20/23 12:43  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-15  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:34	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:00	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Client Sample ID: TMW-4  
Date Collected: 12/20/23 13:00  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-16  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:01	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:08	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-7  
Date Collected: 12/20/23 13:13  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-17  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:27	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:16	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-8  
Date Collected: 12/20/23 13:32  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-18  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:54	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:23	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: Dup-1  
Date Collected: 12/20/23 00:00  
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 06:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 06:20	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Laboratory References:  
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

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Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

**Protocol References:**

EPA = US Environmental Protection Agency

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.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37226-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37226-1	TMW-17	Water	12/20/23 08:45	12/21/23 09:42
880-37226-2	TMW-16	Water	12/20/23 08:59	12/21/23 09:42
880-37226-3	TMW-19	Water	12/20/23 09:20	12/21/23 09:42
880-37226-4	TMW-24	Water	12/20/23 09:35	12/21/23 09:42
880-37226-5	TMW-23	Water	12/20/23 09:45	12/21/23 09:42
880-37226-6	Windmill	Water	12/20/23 09:15	12/21/23 09:42
880-37226-7	TMW-20	Water	12/20/23 10:14	12/21/23 09:42
880-37226-8	TMW-21	Water	12/20/23 10:30	12/21/23 09:42
880-37226-9	TMW-22	Water	12/20/23 10:44	12/21/23 09:42
880-37226-10	TMW-18	Water	12/20/23 11:25	12/21/23 09:42
880-37226-11	TMW-15	Water	12/20/23 11:42	12/21/23 09:42
880-37226-12	TMW-13	Water	12/20/23 12:16	12/21/23 09:42
880-37226-13	TMW-14	Water	12/20/23 12:00	12/21/23 09:42
880-37226-14	TMW-6	Water	12/20/23 12:30	12/21/23 09:42
880-37226-15	TMW-5	Water	12/20/23 12:43	12/21/23 09:42
880-37226-16	TMW-4	Water	12/20/23 13:00	12/21/23 09:42
880-37226-17	TMW-7	Water	12/20/23 13:13	12/21/23 09:42
880-37226-18	TMW-8	Water	12/20/23 13:32	12/21/23 09:42
880-37226-19	Dup-1	Water	12/20/23 00:00	12/21/23 09:42

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**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Marlenfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to Mark Larson / Robert Nelson

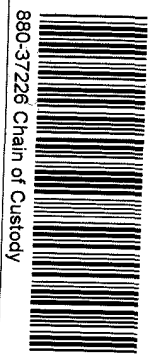
DATE 12/20/23 PAGE 1 OF 2  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME. EBAC #52  
LAI PROJECT # 19-0112-49 COLLECTOR RO/DS

37226 No. 2884  
CHAIN-OF-CUSTODY

TRRP report?  
☐ Yes ☒ No  
TIME ZONE  
Time zone/State

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE	UNPRESERVED	PRESERVATION		ANALYSES		FIELD NOTES	
TRMS-17		12/20/23	0845	W	5				X	X				BTEX/MTBE <input type="checkbox"/>		Direct Auto Apache
TRMS-16			0859											TRPH 418.1 <input type="checkbox"/> TPH 1005 <input type="checkbox"/> TPH 1006 <input type="checkbox"/>		
TRMS-19			0910											GASOLINE MOD 8015 <input type="checkbox"/>		
TRMS-24			0935											DIESEL - MOD 8015 <input type="checkbox"/>		
TRMS-23			0945											OIL - MOD 8015 <input type="checkbox"/>		
Core drill			0915											VOC 8260 <input type="checkbox"/>		
TRMS-20			1014											SVOC 8270 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/>		
TRMS-21			1036											8081 PESTICIDES <input type="checkbox"/> 8151 HERBICIDES <input type="checkbox"/>		
TRMS-22			1044											8082 PESTICIDES <input type="checkbox"/> TCCLP PCBs <input type="checkbox"/>		
TRMS-18			1125											TCCLP - METALS (RCRA) <input type="checkbox"/> TCCLP VOC <input type="checkbox"/>		
TRMS-15			1142											TOTAL METALS (RCRA) <input type="checkbox"/> HERB <input type="checkbox"/> Semi-VOC <input type="checkbox"/>		
TRMS-13			1216											LEAD - TOTAL <input type="checkbox"/> D W 2008 <input type="checkbox"/> TCCLP <input type="checkbox"/>		
TRMS-14			1200											TCCLP - PEST <input type="checkbox"/> TCCLP METALS (RCRA) <input type="checkbox"/> TCCLP VOC <input type="checkbox"/>		
TRMS-6			1230											TCCLP - METALS (RCRA) <input type="checkbox"/> TCCLP VOC <input type="checkbox"/>		
TRMS-5			1243											TCCLP - PEST <input type="checkbox"/> TCCLP METALS (RCRA) <input type="checkbox"/> TCCLP VOC <input type="checkbox"/>		
TOTAL														TCCLP - METALS (RCRA) <input type="checkbox"/> TCCLP VOC <input type="checkbox"/>		



RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	TURN AROUND TIME	LABORATORY USE ONLY:
<u>[Signature]</u>	<u>12/21/23 0942</u>	<u>[Signature]</u>	NORMAL <input checked="" type="checkbox"/> 1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/>	RECEIVING TEMP <u>83/85</u> CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)		
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)		
LABORATORY	<u>Xenex</u>			<input checked="" type="checkbox"/> HAND DELIVERED

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**Larson & Associates, Inc.**  
Environmental Consultants

507 N. Marientfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to Mark Larson / Robert Nelson

DATE 12/26/23 PAGE 2 OF 2  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME EADU #37  
LAI PROJECT # 19-6112-44 COLLECTOR 200 MS

37226 No. 2885  
CHAIN-OF-CUSTODY

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR

P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State

MST/NA

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

PRESERVATION

ANALYSES

BTEX ☐ MTBE ☐

TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200 8 ☐ TCLP ☐

RO ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHLOM ☐

CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

PRESERVATION

ANALYSES

BTEX ☐ MTBE ☐

TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200 8 ☐ TCLP ☐

RO ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHLOM ☐

CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

PRESERVATION

ANALYSES

BTEX ☐ MTBE ☐

TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200 8 ☐ TCLP ☐

RO ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHLOM ☐

CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

PRESERVATION

ANALYSES

BTEX ☐ MTBE ☐

TRPH 418 1 ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200 8 ☐ TCLP ☐

RO ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHLOM ☐

CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

Loc: 880  
37226

Direct Bill to  
Apache

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37226-1  
SDG Number: 19-0112-49

Login Number: 37226  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 1/2/2024 12:48:10 PM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-37238-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701



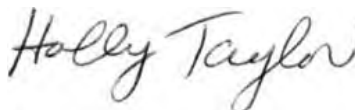
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
1/2/2024 12:48:10 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296



Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-37238-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

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)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: Larson & Associates, Inc.  
Project: EBDU #37

Job ID: 880-37238-1

**Job ID: 880-37238-1**

**Eurofins Midland**

### Job Narrative 880-37238-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 12/21/2023 1:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C

#### GC/MS VOA

Method 8260C: Internal standard (ISTD) response for 1,4-Dichlorobenzene-d4 for the following samples in analytical batch 860-136702 was outside acceptance criteria: TMW-10 (880-37238-1), TMW-1 (880-37238-2) and TMW-9 (880-37238-3). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

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.

Eurofins Midland

## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-10

Lab Sample ID: 880-37238-1

Date Collected: 12/21/23 08:35

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/27/23 12:32	1
Toluene	<0.00100	U	0.00100	mg/L			12/27/23 12:32	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/27/23 12:32	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/27/23 12:32	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/27/23 12:32	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/27/23 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		63 - 144		12/27/23 12:32	1
4-Bromofluorobenzene (Surr)	123	*3	74 - 124		12/27/23 12:32	1
Dibromofluoromethane (Surr)	102		75 - 131		12/27/23 12:32	1
Toluene-d8 (Surr)	120		80 - 120		12/27/23 12:32	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/27/23 12:32	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	114		0.500	mg/L			12/23/23 07:45	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	666		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-1

Lab Sample ID: 880-37238-2

Date Collected: 12/21/23 08:58

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/27/23 12:53	1
Toluene	<0.00100	U	0.00100	mg/L			12/27/23 12:53	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/27/23 12:53	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/27/23 12:53	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/27/23 12:53	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/27/23 12:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		63 - 144		12/27/23 12:53	1
4-Bromofluorobenzene (Surr)	121	*3	74 - 124		12/27/23 12:53	1
Dibromofluoromethane (Surr)	101		75 - 131		12/27/23 12:53	1
Toluene-d8 (Surr)	119		80 - 120		12/27/23 12:53	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/27/23 12:53	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	156		0.500	mg/L			12/23/23 07:58	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-1

Lab Sample ID: 880-37238-2

Date Collected: 12/21/23 08:58

Matrix: Water

Date Received: 12/21/23 13:49

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	662		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-9

Lab Sample ID: 880-37238-3

Date Collected: 12/21/23 09:26

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/27/23 13:13	1
Toluene	<0.00100	U	0.00100	mg/L			12/27/23 13:13	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/27/23 13:13	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/27/23 13:13	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/27/23 13:13	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/27/23 13:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 144		12/27/23 13:13	1
4-Bromofluorobenzene (Surr)	125	S1+ *3	74 - 124		12/27/23 13:13	1
Dibromofluoromethane (Surr)	101		75 - 131		12/27/23 13:13	1
Toluene-d8 (Surr)	117		80 - 120		12/27/23 13:13	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/27/23 13:13	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.3		0.500	mg/L			12/23/23 08:10	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	404		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-3

Lab Sample ID: 880-37238-4

Date Collected: 12/21/23 09:36

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 15:48	1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 15:48	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 15:48	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 15:48	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 15:48	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 15:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 144		12/28/23 15:48	1
4-Bromofluorobenzene (Surr)	89		74 - 124		12/28/23 15:48	1
Dibromofluoromethane (Surr)	105		75 - 131		12/28/23 15:48	1
Toluene-d8 (Surr)	99		80 - 120		12/28/23 15:48	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-3

Lab Sample ID: 880-37238-4

Date Collected: 12/21/23 09:36

Matrix: Water

Date Received: 12/21/23 13:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/28/23 15:48	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	242		0.500	mg/L			12/23/23 08:23	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1020		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-2

Lab Sample ID: 880-37238-5

Date Collected: 12/21/23 09:56

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 16:09	1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 16:09	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 16:09	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 16:09	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 16:09	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 144		12/28/23 16:09	1
4-Bromofluorobenzene (Surr)	88		74 - 124		12/28/23 16:09	1
Dibromofluoromethane (Surr)	100		75 - 131		12/28/23 16:09	1
Toluene-d8 (Surr)	100		80 - 120		12/28/23 16:09	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/28/23 16:09	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	264		0.500	mg/L			12/23/23 08:35	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-11

Lab Sample ID: 880-37238-6

Date Collected: 12/21/23 10:11

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 16:30	1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 16:30	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 16:30	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 16:30	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 16:30	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-11

Lab Sample ID: 880-37238-6

Date Collected: 12/21/23 10:11

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 16:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 144				12/28/23 16:30	1
4-Bromofluorobenzene (Surr)	89		74 - 124				12/28/23 16:30	1
Dibromofluoromethane (Surr)	99		75 - 131				12/28/23 16:30	1
Toluene-d8 (Surr)	100		80 - 120				12/28/23 16:30	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/28/23 16:30	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350		0.500	mg/L			12/23/23 08:48	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1190		10.0	mg/L			12/26/23 17:40	1

Client Sample ID: TMW-12

Lab Sample ID: 880-37238-7

Date Collected: 12/21/23 10:29

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 16:50	1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 16:50	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 16:50	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 16:50	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 16:50	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 16:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 144				12/28/23 16:50	1
4-Bromofluorobenzene (Surr)	87		74 - 124				12/28/23 16:50	1
Dibromofluoromethane (Surr)	98		75 - 131				12/28/23 16:50	1
Toluene-d8 (Surr)	100		80 - 120				12/28/23 16:50	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/28/23 16:50	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	463		0.500	mg/L			12/23/23 09:13	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1520		20.0	mg/L			12/26/23 17:40	1

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## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: Dup-2

Lab Sample ID: 880-37238-8

Date Collected: 12/21/23 00:00

Matrix: Water

Date Received: 12/21/23 13:49

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 17:11	1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 17:11	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 17:11	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 17:11	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 17:11	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 144		12/28/23 17:11	1
4-Bromofluorobenzene (Surr)	89		74 - 124		12/28/23 17:11	1
Dibromofluoromethane (Surr)	99		75 - 131		12/28/23 17:11	1
Toluene-d8 (Surr)	101		80 - 120		12/28/23 17:11	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100	mg/L			12/28/23 17:11	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	265		0.500	mg/L			12/23/23 09:01	1

## General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1010		10.0	mg/L			12/26/23 17:40	1



Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL
		(63-144)	(74-124)	(75-131)	(80-120)
880-37238-1	TMW-10	92	123 *3	102	120
880-37238-1 MS	TMW-10	114	90	99	99
880-37238-2	TMW-1	96	121 *3	101	119
880-37238-3	TMW-9	98	125 S1+ *3	101	117
880-37238-4	TMW-3	106	89	105	99
880-37238-5	TMW-2	103	88	100	100
880-37238-6	TMW-11	107	89	99	100
880-37238-7	TMW-12	98	87	98	100
880-37238-8	Dup-2	99	89	99	101
LCS 860-136702/3	Lab Control Sample	111	86	95	96
LCS 860-138343/3	Lab Control Sample	91	96	99	94
LCSD 860-136702/4	Lab Control Sample Dup	110	89	98	97
LCSD 860-138343/4	Lab Control Sample Dup	96	94	104	96
MB 860-136702/8	Method Blank	89	121 *3	98	117
MB 860-138343/8	Method Blank	95	88	96	100
Surrogate Legend					
DCA = 1,2-Dichloroethane-d4 (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DBFM = Dibromofluoromethane (Surr)					
TOL = Toluene-d8 (Surr)					

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

## Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-136702/8

Matrix: Water

Analysis Batch: 136702

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100	mg/L			12/27/23 12:12	1
Toluene	<0.00100	U	0.00100	mg/L			12/27/23 12:12	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/27/23 12:12	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/27/23 12:12	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/27/23 12:12	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/27/23 12:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		63 - 144		12/27/23 12:12	1
4-Bromofluorobenzene (Surr)	121	*3	74 - 124		12/27/23 12:12	1
Dibromofluoromethane (Surr)	98		75 - 131		12/27/23 12:12	1
Toluene-d8 (Surr)	117		80 - 120		12/27/23 12:12	1

Lab Sample ID: LCS 860-136702/3

Matrix: Water

Analysis Batch: 136702

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0500	0.04541		mg/L		91	75 - 125
Toluene	0.0500	0.04036		mg/L		81	70 - 130
Ethylbenzene	0.0500	0.04206		mg/L		84	75 - 125
m,p-Xylenes	0.0500	0.04026		mg/L		81	75 - 125
o-Xylene	0.0500	0.04314		mg/L		86	75 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		63 - 144
4-Bromofluorobenzene (Surr)	86		74 - 124
Dibromofluoromethane (Surr)	95		75 - 131
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: LCSD 860-136702/4

Matrix: Water

Analysis Batch: 136702

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0500	0.04397		mg/L		88	75 - 125	3	25
Toluene	0.0500	0.03959		mg/L		79	70 - 130	2	25
Ethylbenzene	0.0500	0.04133		mg/L		83	75 - 125	2	25
m,p-Xylenes	0.0500	0.03911		mg/L		78	75 - 125	3	25
o-Xylene	0.0500	0.04234		mg/L		85	75 - 125	2	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		63 - 144
4-Bromofluorobenzene (Surr)	89		74 - 124
Dibromofluoromethane (Surr)	98		75 - 131
Toluene-d8 (Surr)	97		80 - 120

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 880-37238-1 MS  
Matrix: Water  
Analysis Batch: 136702

Client Sample ID: TMW-10  
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Benzene	<0.00100	U	0.0500	0.05456		mg/L		109	66 - 142	
Toluene	<0.00100	U	0.0500	0.05081		mg/L		102	59 - 139	
Ethylbenzene	<0.00100	U	0.0500	0.05310		mg/L		106	75 - 125	
m,p-Xylenes	<0.0100	U	0.0500	0.05001		mg/L		100	75 - 125	
o-Xylene	<0.00100	U	0.0500	0.05414		mg/L		108	75 - 125	
Surrogate	MS	MS								
	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	114		63 - 144							
4-Bromofluorobenzene (Surr)	90		74 - 124							
Dibromofluoromethane (Surr)	99		75 - 131							
Toluene-d8 (Surr)	99		80 - 120							

Lab Sample ID: MB 860-138343/8  
Matrix: Water  
Analysis Batch: 138343

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed		Dil Fac
	Result	Qualifier							
Benzene	<0.00100	U	0.00100	mg/L			12/28/23 12:17		1
Toluene	<0.00100	U	0.00100	mg/L			12/28/23 12:17		1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/28/23 12:17		1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/28/23 12:17		1
o-Xylene	<0.00100	U	0.00100	mg/L			12/28/23 12:17		1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/28/23 12:17		1
Surrogate	MB	MB					Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	95		63 - 144					12/28/23 12:17	1
4-Bromofluorobenzene (Surr)	88		74 - 124					12/28/23 12:17	1
Dibromofluoromethane (Surr)	96		75 - 131					12/28/23 12:17	1
Toluene-d8 (Surr)	100		80 - 120					12/28/23 12:17	1

Lab Sample ID: LCS 860-138343/3  
Matrix: Water  
Analysis Batch: 138343

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	
							Limits	
Benzene	0.0500	0.06051		mg/L		121	75 - 125	
Toluene	0.0500	0.05702		mg/L		114	70 - 130	
Ethylbenzene	0.0500	0.05760		mg/L		115	75 - 125	
m,p-Xylenes	0.0500	0.05797		mg/L		116	75 - 125	
o-Xylene	0.0500	0.05664		mg/L		113	75 - 125	
Surrogate	LCS	LCS						
	%Recovery	Qualifier	Limits					
1,2-Dichloroethane-d4 (Surr)	91		63 - 144					
4-Bromofluorobenzene (Surr)	96		74 - 124					
Dibromofluoromethane (Surr)	99		75 - 131					
Toluene-d8 (Surr)	94		80 - 120					

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-138343/4

Matrix: Water

Analysis Batch: 138343

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Benzene	0.0500	0.04994		mg/L		100	75 - 125	19		25
Toluene	0.0500	0.04755		mg/L		95	70 - 130	18		25
Ethylbenzene	0.0500	0.04807		mg/L		96	75 - 125	18		25
m,p-Xylenes	0.0500	0.04812		mg/L		96	75 - 125	19		25
o-Xylene	0.0500	0.04772		mg/L		95	75 - 125	17		25

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		63 - 144
4-Bromofluorobenzene (Surr)	94		74 - 124
Dibromofluoromethane (Surr)	104		75 - 131
Toluene-d8 (Surr)	96		80 - 120

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 860-136466/3

Matrix: Water

Analysis Batch: 136466

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<0.500	U	0.500	mg/L			12/22/23 17:14	1

Lab Sample ID: MB 860-136466/47

Matrix: Water

Analysis Batch: 136466

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<0.500	U	0.500	mg/L			12/23/23 02:30	1

Lab Sample ID: LCS 860-136466/48

Matrix: Water

Analysis Batch: 136466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Chloride	5.00	4.826		mg/L		97	90 - 110	

Lab Sample ID: LCSD 860-136466/49

Matrix: Water

Analysis Batch: 136466

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Chloride	5.00	4.755		mg/L		95	90 - 110	1		20

Lab Sample ID: LLCS 860-136466/7

Matrix: Water

Analysis Batch: 136466

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Chloride	0.500	0.5214		mg/L		104	50 - 150	

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 860-136563/1					Client Sample ID: Method Blank				
Matrix: Water					Prep Type: Total/NA				
Analysis Batch: 136563									
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total Dissolved Solids	<5.00	U	5.00	mg/L			12/26/23 17:40	1	

Lab Sample ID: LCS 860-136563/2					Client Sample ID: Lab Control Sample				
Matrix: Water					Prep Type: Total/NA				
Analysis Batch: 136563									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids	1000	1107		mg/L		111	80 - 120		

Lab Sample ID: LCSD 860-136563/3					Client Sample ID: Lab Control Sample Dup				
Matrix: Water					Prep Type: Total/NA				
Analysis Batch: 136563									
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1108		mg/L		111	80 - 120	0	10

## QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

## GC/MS VOA

## Analysis Batch: 136702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	8260C	
880-37238-2	TMW-1	Total/NA	Water	8260C	
880-37238-3	TMW-9	Total/NA	Water	8260C	
MB 860-136702/8	Method Blank	Total/NA	Water	8260C	
LCS 860-136702/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-136702/4	Lab Control Sample Dup	Total/NA	Water	8260C	
880-37238-1 MS	TMW-10	Total/NA	Water	8260C	

## Analysis Batch: 138343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-4	TMW-3	Total/NA	Water	8260C	
880-37238-5	TMW-2	Total/NA	Water	8260C	
880-37238-6	TMW-11	Total/NA	Water	8260C	
880-37238-7	TMW-12	Total/NA	Water	8260C	
880-37238-8	Dup-2	Total/NA	Water	8260C	
MB 860-138343/8	Method Blank	Total/NA	Water	8260C	
LCS 860-138343/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-138343/4	Lab Control Sample Dup	Total/NA	Water	8260C	

## Analysis Batch: 138894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	Total BTEX	
880-37238-2	TMW-1	Total/NA	Water	Total BTEX	
880-37238-3	TMW-9	Total/NA	Water	Total BTEX	
880-37238-4	TMW-3	Total/NA	Water	Total BTEX	
880-37238-5	TMW-2	Total/NA	Water	Total BTEX	
880-37238-6	TMW-11	Total/NA	Water	Total BTEX	
880-37238-7	TMW-12	Total/NA	Water	Total BTEX	
880-37238-8	Dup-2	Total/NA	Water	Total BTEX	

## HPLC/IC

## Analysis Batch: 136466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	300.0	
880-37238-2	TMW-1	Total/NA	Water	300.0	
880-37238-3	TMW-9	Total/NA	Water	300.0	
880-37238-4	TMW-3	Total/NA	Water	300.0	
880-37238-5	TMW-2	Total/NA	Water	300.0	
880-37238-6	TMW-11	Total/NA	Water	300.0	
880-37238-7	TMW-12	Total/NA	Water	300.0	
880-37238-8	Dup-2	Total/NA	Water	300.0	
MB 860-136466/3	Method Blank	Total/NA	Water	300.0	
MB 860-136466/47	Method Blank	Total/NA	Water	300.0	
LCS 860-136466/48	Lab Control Sample	Total/NA	Water	300.0	
LCSD 860-136466/49	Lab Control Sample Dup	Total/NA	Water	300.0	
LLCS 860-136466/7	Lab Control Sample	Total/NA	Water	300.0	

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QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

General Chemistry

Analysis Batch: 136563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	SM 2540C	
880-37238-2	TMW-1	Total/NA	Water	SM 2540C	
880-37238-3	TMW-9	Total/NA	Water	SM 2540C	
880-37238-4	TMW-3	Total/NA	Water	SM 2540C	
880-37238-5	TMW-2	Total/NA	Water	SM 2540C	
880-37238-6	TMW-11	Total/NA	Water	SM 2540C	
880-37238-7	TMW-12	Total/NA	Water	SM 2540C	
880-37238-8	Dup-2	Total/NA	Water	SM 2540C	
MB 860-136563/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 860-136563/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 860-136563/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-10  
Date Collected: 12/21/23 08:35  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:32	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:32	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:45	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-1  
Date Collected: 12/21/23 08:58  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:53	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:53	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:58	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-9  
Date Collected: 12/21/23 09:26  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 13:13	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 13:13	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:10	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-3  
Date Collected: 12/21/23 09:36  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:23	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-2  
Date Collected: 12/21/23 09:56  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-5  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:35	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

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Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Client Sample ID: TMW-11  
Date Collected: 12/21/23 10:11  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:48	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-12  
Date Collected: 12/21/23 10:29  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-7  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:13	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: Dup-2  
Date Collected: 12/21/23 00:00  
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-8  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:01	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Laboratory References:  
EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-23-53	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET HOU
Total BTEX	Total BTEX Calculation	TAL SOP	EET HOU
300.0	Anions, Ion Chromatography	EPA	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET HOU
5030C	Purge and Trap	SW846	EET HOU

**Protocol References:**

EPA = US Environmental Protection Agency

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.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-37238-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37238-1	TMW-10	Water	12/21/23 08:35	12/21/23 13:49
880-37238-2	TMW-1	Water	12/21/23 08:58	12/21/23 13:49
880-37238-3	TMW-9	Water	12/21/23 09:26	12/21/23 13:49
880-37238-4	TMW-3	Water	12/21/23 09:36	12/21/23 13:49
880-37238-5	TMW-2	Water	12/21/23 09:56	12/21/23 13:49
880-37238-6	TMW-11	Water	12/21/23 10:11	12/21/23 13:49
880-37238-7	TMW-12	Water	12/21/23 10:29	12/21/23 13:49
880-37238-8	Dup-2	Water	12/21/23 00:00	12/21/23 13:49

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

**Larson & Associates, Inc.**  
Environmental Consultants

507 N. Marientfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to

DATE 12/21/2023 PAGE 1 OF 1  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME EAB-1 #37  
LAI PROJECT # 19-0112-49 COLLECTOR NV/ASG

TRRP report? ☐ Yes ☒ No  
TIME ZONE \_\_\_\_\_  
Time zone/State \_\_\_\_\_

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

Field Sample ID	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION				UNPRESERVED	ANALYSES	FIELD NOTES
						HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/>	ICE			
7MW-10		12/21/23	0835	W	5						X	Direct B.I.I. to Apache
7MW-1			0854	W	5					X		
7MW-9			0924	W	5					X		
7MW-3			0936	W	5					X		
7MW-2			0956	W	5					X		
7MW-11			1011	W	5					X		
7MW-12			1029	W	5					X		
DGP-2			-	W	5					X		



880-37238 Chain of Custody

RELINQUISHED BY (Signature) _____	DATE/TIME <u>12/21/23 1354</u>	RECEIVED BY (Signature) _____	TURN AROUND TIME NORMAL <input checked="" type="checkbox"/> 1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/>
RELINQUISHED BY (Signature) _____	DATE/TIME _____	RECEIVED BY (Signature) _____	LABORATORY USE ONLY: RECEIVING TEMP <u>5.3155</u> THERM# <u>5168</u> CUSTODY SEALS - <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____ <input checked="" type="checkbox"/> HAND DELIVERED
RELINQUISHED BY (Signature) _____	DATE/TIME _____	RECEIVED BY (Signature) _____	
LABORATORY <u>XENCO</u>			

CHAIN-OF-CUSTODY

37238 No. 2886

11211 W Florida Ave  
Midland, TX 79701  
Phone: 432-704-5440

## Chain of Custody Record



### Environment Testing

Client Information (Sub Contract Lab)		Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Taylor Holly		880-8753.1
Shipping/Receiving		E-Mail:	State of Origin:	Page:
Company:		Holly Taylor@et.eurofinsus.com	New Mexico	Page 1 of 1
Eurofins Environment Testing South Cent		Accreditations Required (See note):		Job #:
Address:		NELAP Texas		880-37238-1
City:				
State, Zip:				
Phone:				
Email:				
Project Name:				
EBDU #37				
Site:				
Due Date Requested:				
12/25/2023				
TAT Requested (days):				
PO #:				
WO #:				
Project #:				
88000515				
SSOW#:				
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)
Matrix (Water, Seawater, Soil, BT-Tissue, A=Air)				
TMW-10 (880-37238-1)		12/21/23	08:35 Mountain	Water
TMW-11 (880-37238-2)		12/21/23	08:58 Mountain	Water
TMW-9 (880-37238-3)		12/21/23	09:26 Mountain	Water
TMW-3 (880-37238-4)		12/21/23	09:36 Mountain	Water
TMW-2 (880-37238-5)		12/21/23	09:56 Mountain	Water
TMW-11 (880-37238-6)		12/21/23	10:11 Mountain	Water
TMW-12 (880-37238-7)		12/21/23	10:29 Mountain	Water
Dup-2 (880-37238-8)		12/21/23	Mountain	Water
Special Instructions/Note:				
Temp 3.0 IR ID HQU-369				
C/F -0.0				
Corrected Temp. 3.0				
Preservation Codes:				
A HCL				
B NaOH				
C Zn Acetate				
D Nitric Acid				
E NaHSO4				
F MeOH				
G Amchlor				
H Ascorbic Acid				
I Ice				
J DI Water				
K EDTA				
L EDTA				
M Hexane				
N None				
O AsNaO2				
P Na2O4S				
Q Na2SO3				
R Na2SO4				
S H2SO4				
T TSP Dodecylhydrate				
U Acetone				
V MCAA				
W pH 4-5				
Y Trizma				
Z other (specify)				
Other:				
Analysis Requested				
8260C/6030C BTEX				
2540C_Calcd				
300_ORGFM_28D/ Chloride				
Special Instructions/Note:				
Temp 3.0 IR ID HQU-369				
C/F -0.0				
Corrected Temp. 3.0				
Preservation Codes:				
A HCL				
B NaOH				
C Zn Acetate				
D Nitric Acid				
E NaHSO4				
F MeOH				
G Amchlor				
H Ascorbic Acid				
I Ice				
J DI Water				
K EDTA				
L EDTA				
M Hexane				
N None				
O AsNaO2				
P Na2O4S				
Q Na2SO3				
R Na2SO4				
S H2SO4				
T TSP Dodecylhydrate				
U Acetone				
V MCAA				
W pH 4-5				
Y Trizma				
Z other (specify)				
Other:				
Analysis Requested				
8260C/6030C BTEX				
2540C_Calcd				
300_ORGFM_28D/ Chloride				
Special Instructions/Note:				
Temp 3.0 IR ID HQU-369				
C/F -0.0				
Corrected Temp. 3.0				
Preservation Codes:				
A HCL				
B NaOH				
C Zn Acetate				
D Nitric Acid				
E NaHSO4				
F MeOH				
G Amchlor				
H Ascorbic Acid				
I Ice				
J DI Water				
K EDTA				
L EDTA				
M Hexane				
N None				
O AsNaO2				
P Na2O4S				
Q Na2SO3				
R Na2SO4				
S H2SO4				
T TSP Dodecylhydrate				
U Acetone				
V MCAA				
W pH 4-5				
Y Trizma				
Z other (specify)				
Other:				
Analysis Requested				
8260C/6030C BTEX				
2540C_Calcd				
300_ORGFM_28D/ Chloride				
Special Instructions/Note:				
Temp 3.0 IR ID HQU-369				
C/F -0.0				
Corrected Temp. 3.0				
Preservation Codes:				
A HCL				
B NaOH				
C Zn Acetate				
D Nitric Acid				
E NaHSO4				
F MeOH				
G Amchlor				
H Ascorbic Acid				
I Ice				
J DI Water				

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1  
SDG Number: 19-0112-49

Login Number: 37238  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1  
SDG Number: 19-0112-49

Login Number: 37238  
List Number: 2  
Creator: Garcia, Yaillet

List Source: Eurofins Houston  
List Creation: 12/22/23 03:42 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



**Appendix F**  
**Windmill Laboratory Report**



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 4/30/2024 4:30:51 PM

## JOB DESCRIPTION

Apache/EBDU 37  
19-0112-49

## JOB NUMBER

880-41793-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
4/30/2024 4:30:51 PM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Laboratory Job ID: 880-41793-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

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## Case Narrative

Client: Larson & Associates, Inc.  
Project: Apache/EBDU 37

Job ID: 880-41793-1

**Job ID: 880-41793-1**

**Eurofins Midland**

### Job Narrative 880-41793-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The sample was received on 4/3/2024 2:48 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C.

#### GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC/MS Semi VOA

Method 8270E\_QQQ: Three surrogates are used for this analysis. The laboratory's SOP allows one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: Windwill (880-41793-1). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### PCBs

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

Method 300\_ORGFM\_28D: The followings samples were analyzed at a dilution for Chloride due to the Matrix Conductivity Threshold (MCT) of the instrument: Windwill (880-41793-1), (860-71138-B-1), (860-71138-B-1 MS) and (860-71138-B-1 MSD). The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### General Chemistry

Method 420.4\_NP: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 860-154711 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method SM4500\_H+: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following sample has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: Windwill (880-41793-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Client Sample ID: Windwill  
Date Collected: 04/03/24 10:15  
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1  
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
1,1,1,2,2-Tetrachloroethane	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,1,2-Trichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,1-Dichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,1-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,2,4-Trichlorobenzene	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
1,2-Dichlorobenzene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,2-Dichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
1,2-Dichloropropane	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
1,4-Dichlorobenzene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Benzene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Carbon tetrachloride	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
Chloroform	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
cis-1,2-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			04/08/24 12:45	1
Methylene Chloride	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
o-Xylene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Styrene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Tetrachloroethene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Toluene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
trans-1,2-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 12:45	1
Trichloroethene	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
Vinyl chloride	<0.00200	U	0.00200	mg/L			04/08/24 12:45	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			04/08/24 12:45	1
1,2-Dibromoethane	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
MTBE	<0.00500	U	0.00500	mg/L			04/08/24 12:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 144				04/08/24 12:45	1
4-Bromofluorobenzene (Surr)	103		74 - 124				04/08/24 12:45	1
Dibromofluoromethane (Surr)	98		75 - 131				04/08/24 12:45	1
Toluene-d8 (Surr)	99		80 - 120				04/08/24 12:45	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
2-Methylnaphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Acenaphthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Acenaphthylene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Anthracene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Benzo[a]anthracene	<0.0286	U	0.0286	ug/L		04/04/24 16:00	04/12/24 16:15	1
Benzo[a]pyrene	<0.0571	U	0.0571	ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[b]fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[g,h,i]perylene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[k]fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/16/24 00:21	1
Chrysene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Dibenz(a,h)anthracene	<0.114	U	0.114	ug/L		04/04/24 16:00	04/16/24 00:21	1
Fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Fluorene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1

Eurofins Midland



## Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Client Sample ID: Windwill

Lab Sample ID: 880-41793-1

Date Collected: 04/03/24 10:15

Matrix: Water

Date Received: 04/03/24 14:48

## Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/16/24 00:21	1
Naphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Phenanthrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Pyrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/12/24 16:15	1
Atrazine	<0.500	U	0.500	ug/L		04/04/24 16:00	04/12/24 16:15	1
Pentachlorophenol	<1.14	U	1.14	ug/L		04/04/24 16:00	04/12/24 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	88		43 - 130	04/04/24 16:00	04/12/24 16:15	1
2-Fluorobiphenyl (Surr)	86		43 - 130	04/04/24 16:00	04/16/24 00:21	1
Nitrobenzene-d5 (Surr)	83		37 - 133	04/04/24 16:00	04/12/24 16:15	1
Nitrobenzene-d5 (Surr)	142	S1+	37 - 133	04/04/24 16:00	04/16/24 00:21	1
p-Terphenyl-d14 (Surr)	78		47 - 130	04/04/24 16:00	04/12/24 16:15	1
p-Terphenyl-d14 (Surr)	96		47 - 130	04/04/24 16:00	04/16/24 00:21	1

## Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.000260	U	0.000260	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1221	<0.000520	U	0.000520	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1232	<0.000520	U	0.000520	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1242	<0.000260	U	0.000260	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1248	<0.000520	U	0.000520	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1254	<0.000520	U	0.000520	mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1260	<0.000260	U	0.000260	mg/L		04/04/24 21:01	04/05/24 16:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		52 - 134	04/04/24 21:01	04/05/24 16:32	1
DCB Decachlorobiphenyl (Surr)	41		28 - 94	04/04/24 21:01	04/05/24 16:32	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<1.00	U	1.00	mg/L			04/25/24 16:53	1
Nitrate as N	2.78		0.100	mg/L			04/04/24 19:41	1
Nitrite as N	<0.100	U	0.100	mg/L			04/04/24 19:41	1
Sulfate	56.5		0.500	mg/L			04/04/24 19:41	1
Chloride	440		2.50	mg/L			04/04/24 19:24	5

## Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0200	U	0.0200	mg/L		04/08/24 10:30	04/08/24 17:36	1
Antimony	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1
Arsenic	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1
Barium	0.218		0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1
Beryllium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1
Boron	0.154		0.0100	mg/L		04/08/24 10:30	04/08/24 17:36	1
Cadmium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1
Chromium	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1
Cobalt	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1
Copper	0.00509		0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1
Iron	<0.100	U	0.100	mg/L		04/08/24 10:30	04/08/24 17:36	1
Lead	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Client Sample ID: Windwill  
Date Collected: 04/03/24 10:15  
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1  
Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) (Continued)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Manganese	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Molybdenum	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Nickel	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Selenium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Silver	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Thallium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Uranium	0.00315		0.00100	mg/L		04/08/24 10:30	04/08/24 17:36	1	
Zinc	0.00465		0.00400	mg/L		04/08/24 10:30	04/08/24 17:36	1	

Method: SW846 7470A - Mercury (CVAA)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Mercury	<0.000200	U	0.000200	mg/L		04/08/24 23:16	04/09/24 17:16	1	

General Chemistry									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Phenols, Total (EPA 420.4)	<0.0100	U F1	0.0100	mg/L			04/12/24 11:33	1	
Cyanide, Total (EPA Kelada 01)	<0.00500	U	0.00500	mg/L			04/11/24 11:25	1	
Total Dissolved Solids (SM 2540C)	1000		50.0	mg/L			04/04/24 20:44	1	
pH (SM 4500 H+ B)	7.3	HF	0.01	S.U.			04/04/24 20:18	1	
Temperature (SM 4500 H+ B)	22.0	HF	0.01	Deg. C			04/04/24 20:18	1	

Surrogate Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (63-144)	BFB (74-124)	DBFM (75-131)	TOL (80-120)
880-41793-1	Windwill	105	103	98	99
LCS 860-153663/3	Lab Control Sample	100	105	99	100
LCSD 860-153663/4	Lab Control Sample Dup	100	102	99	98
MB 860-153663/10	Method Blank	106	102	99	102
Surrogate Legend					
DCA = 1,2-Dichloroethane-d4 (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DBFM = Dibromofluoromethane (Surr)					
TOL = Toluene-d8 (Surr)					

Method: 8270E - Semivolatile Organic Compounds (GC/MS)  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (43-130)	NBZ (37-133)	TPHd14 (47-130)
880-41793-1	Windwill	88	83	78
880-41793-1	Windwill	86	142 S1+	96
LCS 860-153448/2-A	Lab Control Sample	86	95	90
LCSD 860-153448/3-A	Lab Control Sample Dup	92	101	104
MB 860-153448/1-A	Method Blank	92	94	96
Surrogate Legend				
FBP = 2-Fluorobiphenyl (Surr)				
NBZ = Nitrobenzene-d5 (Surr)				
TPHd14 = p-Terphenyl-d14 (Surr)				

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography  
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX1 (52-134)	DCB1 (28-94)
880-41793-1	Windwill	70	41
LCS 860-153141/4-A	Lab Control Sample	72	40
LCSD 860-153141/5-A	Lab Control Sample Dup	77	43
MB 860-153141/1-A	Method Blank	71	42
Surrogate Legend			
TCX = Tetrachloro-m-xylene			
DCB = DCB Decachlorobiphenyl (Surr)			

QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-153663/10  
Matrix: Water  
Analysis Batch: 153663

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
1,1,2,2-Tetrachloroethane	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,1,2-Trichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,1-Dichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,1-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,2,4-Trichlorobenzene	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
1,2-Dichlorobenzene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,2-Dichloroethane	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
1,2-Dichloropropane	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
1,4-Dichlorobenzene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Benzene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Carbon tetrachloride	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
Chloroform	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
cis-1,2-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			04/08/24 10:41	1
Methylene Chloride	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
o-Xylene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Styrene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Tetrachloroethene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Toluene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
trans-1,2-Dichloroethene	<0.00100	U	0.00100	mg/L			04/08/24 10:41	1
Trichloroethene	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
Vinyl chloride	<0.00200	U	0.00200	mg/L			04/08/24 10:41	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			04/08/24 10:41	1
1,2-Dibromoethane	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
MTBE	<0.00500	U	0.00500	mg/L			04/08/24 10:41	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 144				04/08/24 10:41	1
4-Bromofluorobenzene (Surr)	102		74 - 124				04/08/24 10:41	1
Dibromofluoromethane (Surr)	99		75 - 131				04/08/24 10:41	1
Toluene-d8 (Surr)	102		80 - 120				04/08/24 10:41	1

Lab Sample ID: LCS 860-153663/3  
Matrix: Water  
Analysis Batch: 153663

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05193		mg/L		104	70 - 130
1,1,2,2-Tetrachloroethane	0.0500	0.05345		mg/L		107	74 - 125
1,1,2-Trichloroethane	0.0500	0.05090		mg/L		102	75 - 130
1,1-Dichloroethane	0.0500	0.05092		mg/L		102	71 - 130
1,1-Dichloroethene	0.0500	0.05549		mg/L		111	50 - 150
1,2,4-Trichlorobenzene	0.0500	0.05211		mg/L		104	75 - 135
1,2-Dichlorobenzene	0.0500	0.05026		mg/L		101	75 - 125
1,2-Dichloroethane	0.0500	0.04960		mg/L		99	72 - 130
1,2-Dichloropropane	0.0500	0.04806		mg/L		96	74 - 125

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-153663/3  
Matrix: Water  
Analysis Batch: 153663

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.0500	0.04974		mg/L		99	75 - 125
Benzene	0.0500	0.04930		mg/L		99	75 - 125
Carbon tetrachloride	0.0500	0.04790		mg/L		96	70 - 125
Chloroform	0.0500	0.04981		mg/L		100	70 - 121
cis-1,2-Dichloroethene	0.0500	0.05158		mg/L		103	75 - 125
Ethylbenzene	0.0500	0.05097		mg/L		102	75 - 125
m,p-Xylenes	0.0500	0.05079		mg/L		102	75 - 125
Methylene Chloride	0.0500	0.04779		mg/L		96	71 - 125
o-Xylene	0.0500	0.05061		mg/L		101	75 - 125
Styrene	0.0500	0.04926		mg/L		99	75 - 125
Tetrachloroethene	0.0500	0.05132		mg/L		103	71 - 125
Toluene	0.0500	0.04963		mg/L		99	75 - 130
trans-1,2-Dichloroethene	0.0500	0.05266		mg/L		105	75 - 125
Trichloroethene	0.0500	0.05056		mg/L		101	75 - 135
Vinyl chloride	0.0500	0.05348		mg/L		107	60 - 140
1,2-Dibromoethane	0.0500	0.04969		mg/L		99	73 - 125
MTBE	0.0500	0.05189		mg/L		104	65 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		63 - 144
4-Bromofluorobenzene (Surr)	105		74 - 124
Dibromofluoromethane (Surr)	99		75 - 131
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCSD 860-153663/4  
Matrix: Water  
Analysis Batch: 153663

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.04893		mg/L		98	70 - 130	6	25
1,1,1,2-Tetrachloroethane	0.0500	0.04965		mg/L		99	74 - 125	7	25
1,1,2-Trichloroethane	0.0500	0.04916		mg/L		98	75 - 130	3	25
1,1-Dichloroethane	0.0500	0.04906		mg/L		98	71 - 130	4	25
1,1-Dichloroethene	0.0500	0.05105		mg/L		102	50 - 150	8	25
1,2,4-Trichlorobenzene	0.0500	0.04764		mg/L		95	75 - 135	9	25
1,2-Dichlorobenzene	0.0500	0.04581		mg/L		92	75 - 125	9	25
1,2-Dichloroethane	0.0500	0.04886		mg/L		98	72 - 130	2	25
1,2-Dichloropropane	0.0500	0.04683		mg/L		94	74 - 125	3	25
1,4-Dichlorobenzene	0.0500	0.04502		mg/L		90	75 - 125	10	25
Benzene	0.0500	0.04757		mg/L		95	75 - 125	4	25
Carbon tetrachloride	0.0500	0.04459		mg/L		89	70 - 125	7	25
Chloroform	0.0500	0.04804		mg/L		96	70 - 121	4	25
cis-1,2-Dichloroethene	0.0500	0.04959		mg/L		99	75 - 125	4	25
Ethylbenzene	0.0500	0.04784		mg/L		96	75 - 125	6	25
m,p-Xylenes	0.0500	0.04759		mg/L		95	75 - 125	6	25
Methylene Chloride	0.0500	0.04531		mg/L		91	71 - 125	5	25
o-Xylene	0.0500	0.04767		mg/L		95	75 - 125	6	25
Styrene	0.0500	0.04700		mg/L		94	75 - 125	5	25

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-153663/4

Matrix: Water

Analysis Batch: 153663

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
Tetrachloroethene	0.0500	0.04748		mg/L		95	71 - 125	8	25
Toluene	0.0500	0.04702		mg/L		94	75 - 130	5	25
trans-1,2-Dichloroethene	0.0500	0.05018		mg/L		100	75 - 125	5	25
Trichloroethene	0.0500	0.04854		mg/L		97	75 - 135	4	25
Vinyl chloride	0.0500	0.05079		mg/L		102	60 - 140	5	25
1,2-Dibromoethane	0.0500	0.04810		mg/L		96	73 - 125	3	25
MTBE	0.0500	0.05101		mg/L		102	65 - 135	2	25
	LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	100		63 - 144						
4-Bromofluorobenzene (Surr)	102		74 - 124						
Dibromofluoromethane (Surr)	99		75 - 131						
Toluene-d8 (Surr)	98		80 - 120						

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 860-153448/1-A					Client Sample ID: Method Blank				
Matrix: Water					Prep Type: Total/NA				
Analysis Batch: 154192					Prep Batch: 153448				
Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier							
1-Methylnaphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
2-Methylnaphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Acenaphthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Acenaphthylene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Anthracene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Benzo[a]anthracene	<0.0286	U	0.0286	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Benzo[a]pyrene	<0.0571	U	0.0571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Benzo[b]fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Benzo[g,h,i]perylene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Benzo[k]fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Chrysene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Dibenz(a,h)anthracene	<0.114	U	0.114	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Fluoranthene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Fluorene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Indeno[1,2,3-cd]pyrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Naphthalene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Phenanthrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Pyrene	<0.571	U	0.571	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Atrazine	<0.500	U	0.500	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Pentachlorophenol	<1.14	U	1.14	ug/L		04/04/24 16:00	04/10/24 20:26	1	
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac	
	%Recovery	Qualifier							
2-Fluorobiphenyl (Surr)	92		43 - 130			04/04/24 16:00	04/10/24 20:26	1	
Nitrobenzene-d5 (Surr)	94		37 - 133			04/04/24 16:00	04/10/24 20:26	1	
p-Terphenyl-d14 (Surr)	96		47 - 130			04/04/24 16:00	04/10/24 20:26	1	

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

**Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)**

**Lab Sample ID: LCS 860-153448/2-A**

**Matrix: Water**

**Analysis Batch: 154192**

**Client Sample ID: Lab Control Sample**

Prep Type: Total/NA

Prep Batch: 153448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	%Rec	%Rec	%Rec
						Limits	Limits	Limits	Limits	Limits
1-Methylnaphthalene	2.86	2.454		ug/L		86	52 - 130			
2-Methylnaphthalene	2.86	2.398		ug/L		84	25 - 175			
Acenaphthene	2.86	2.352		ug/L		82	60 - 132			
Acenaphthylene	2.86	2.722		ug/L		95	54 - 126			
Anthracene	2.86	2.146		ug/L		75	43 - 135			
Benzo[a]anthracene	2.86	3.391		ug/L		119	42 - 133			
Benzo[a]pyrene	2.86	2.685		ug/L		94	32 - 148			
Benzo[b]fluoranthene	2.86	3.247		ug/L		114	42 - 140			
Benzo[g,h,i]perylene	2.86	1.891		ug/L		66	25 - 195			
Benzo[k]fluoranthene	2.86	2.950		ug/L		103	25 - 146			
Chrysene	2.86	2.529		ug/L		89	47 - 130			
Dibenz(a,h)anthracene	2.86	2.082		ug/L		73	32 - 200			
Fluoranthene	2.86	2.646		ug/L		93	43 - 130			
Fluorene	2.86	2.424		ug/L		85	70 - 120			
Indeno[1,2,3-cd]pyrene	2.86	1.961		ug/L		69	29 - 151			
Naphthalene	2.86	2.612		ug/L		91	36 - 120			
Phenanthrene	2.86	2.415		ug/L		85	65 - 120			
Pyrene	2.86	2.594		ug/L		91	70 - 130			
Atrazine	2.86	2.577		ug/L		90	70 - 130			
Pentachlorophenol	2.86	1.929		ug/L		68	38 - 152			

	LCS	LCS	
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>
2-Fluorobiphenyl (Surr)	86		43 - 130
Nitrobenzene-d5 (Surr)	95		37 - 133
p-Terphenyl-d14 (Surr)	90		47 - 130

**Lab Sample ID: LCSD 860-153448/3-A**

**Matrix: Water**

**Analysis Batch: 154192**

**Client Sample ID: Lab Control Sample Dup**

Prep Type: Total/NA

Prep Batch: 153448

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec	RPD	RPD
						Limits	Limits		
1-Methylnaphthalene	2.86	2.561		ug/L		90	52 - 130	4	30
2-Methylnaphthalene	2.86	2.402		ug/L		84	25 - 175	0	30
Acenaphthene	2.86	2.394		ug/L		84	60 - 132	2	30
Acenaphthylene	2.86	3.010		ug/L		105	54 - 126	10	30
Anthracene	2.86	2.547		ug/L		89	43 - 135	17	30
Benzo[a]anthracene	2.86	3.582		ug/L		125	42 - 133	5	30
Benzo[a]pyrene	2.86	2.928		ug/L		102	32 - 148	9	30
Benzo[b]fluoranthene	2.86	3.222		ug/L		113	42 - 140	1	30
Benzo[g,h,i]perylene	2.86	2.300		ug/L		81	25 - 195	20	30
Benzo[k]fluoranthene	2.86	3.282		ug/L		115	25 - 146	11	30
Chrysene	2.86	2.660		ug/L		93	47 - 130	5	30
Dibenz(a,h)anthracene	2.86	2.367		ug/L		83	32 - 200	13	30
Fluoranthene	2.86	2.982		ug/L		104	43 - 130	12	30
Fluorene	2.86	2.609		ug/L		91	70 - 120	7	30
Indeno[1,2,3-cd]pyrene	2.86	2.301		ug/L		81	29 - 151	16	30
Naphthalene	2.86	2.565		ug/L		90	36 - 120	2	30
Phenanthrene	2.86	2.636		ug/L		92	65 - 120	9	30

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** LCSD 860-153448/3-A  
**Matrix:** Water  
**Analysis Batch:** 154192

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 153448

Analyte	Spike		LCSD		Unit	D	%Rec	%Rec		RPD	
	Added		Result	Qualifier				Limits		RPD	Limit
Pyrene	2.86		2.821		ug/L		99	70 - 130		8	30
Atrazine	2.86		2.784		ug/L		97	70 - 130		8	30
Pentachlorophenol	2.86		2.160		ug/L		76	38 - 152		11	30

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	92		43 - 130
Nitrobenzene-d5 (Surr)	101		37 - 133
p-Terphenyl-d14 (Surr)	104		47 - 130

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID:** MB 860-153141/1-A  
**Matrix:** Water  
**Analysis Batch:** 153438

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 153141

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
PCB-1016	<0.000262	U	0.000262	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1221	<0.000524	U	0.000524	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1232	<0.000524	U	0.000524	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1242	<0.000262	U	0.000262	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1248	<0.000524	U	0.000524	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1254	<0.000524	U	0.000524	mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1260	<0.000262	U	0.000262	mg/L		04/03/24 18:17	04/05/24 11:06	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	71		52 - 134	04/03/24 18:17	04/05/24 11:06	1
DCB Decachlorobiphenyl (Surr)	42		28 - 94	04/03/24 18:17	04/05/24 11:06	1

**Lab Sample ID:** LCS 860-153141/4-A  
**Matrix:** Water  
**Analysis Batch:** 153438

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 153141

Analyte	Spike		LCS		Unit	D	%Rec	%Rec	
	Added		Result	Qualifier				Limits	
PCB-1016	0.00520		0.005895		mg/L		113	43 - 130	
PCB-1260	0.00520		0.004034		mg/L		78	50 - 95	

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	72		52 - 134
DCB Decachlorobiphenyl (Surr)	40		28 - 94

**Lab Sample ID:** LCSD 860-153141/5-A  
**Matrix:** Water  
**Analysis Batch:** 153438

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 153141

Analyte	Spike		LCSD		Unit	D	%Rec	%Rec		RPD	
	Added		Result	Qualifier				Limits		RPD	Limit
PCB-1016	0.00525		0.005950		mg/L		113	43 - 130		1	20
PCB-1260	0.00525		0.004268		mg/L		81	50 - 95		6	20



QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 860-153141/5-A				Client Sample ID: Lab Control Sample Dup			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 153438				Prep Batch: 153141			
	LCSD	LCSD					
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene	77		52 - 134				
DCB Decachlorobiphenyl (Surr)	43		28 - 94				

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-669273/53						Client Sample ID: Method Blank		
Matrix: Water						Prep Type: Total/NA		
Analysis Batch: 669273								
	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<1.00	U	1.00	mg/L			04/25/24 12:13	1

Lab Sample ID: LCS 400-669273/54					Client Sample ID: Lab Control Sample					
Matrix: Water					Prep Type: Total/NA					
Analysis Batch: 669273										
			Spike	LCS	LCS				%Rec	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride			10.0	9.997		mg/L		100	90 - 110	

Lab Sample ID: LCSD 400-669273/55					Client Sample ID: Lab Control Sample Dup					
Matrix: Water					Prep Type: Total/NA					
Analysis Batch: 669273										
			Spike	LCSD	LCSD			%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD
Fluoride			10.0	9.940		mg/L		99	90 - 110	1
										15

Lab Sample ID: MB 880-77357/3						Client Sample ID: Method Blank		
Matrix: Water						Prep Type: Total/NA		
Analysis Batch: 77357								
	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.500	U	0.500	mg/L			04/04/24 12:19	1
Chloride	<0.500	U	0.500	mg/L			04/04/24 12:19	1

Lab Sample ID: LCS 880-77357/4						Client Sample ID: Lab Control Sample			
Matrix: Water						Prep Type: Total/NA			
Analysis Batch: 77357									
		Spike	LCS	LCS				%Rec	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate		25.0	24.28		mg/L		97	90 - 110	
Chloride		25.0	25.03		mg/L		100	90 - 110	

Lab Sample ID: LCSD 880-77357/5							Client Sample ID: Lab Control Sample Dup				
Matrix: Water							Prep Type: Total/NA				
Analysis Batch: 77357											
			Spike	LCSD	LCSD			%Rec		RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate			25.0	24.46		mg/L		98	90 - 110	1	20
Chloride			25.0	24.95		mg/L		100	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-77358/3  
Matrix: Water  
Analysis Batch: 77358

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.100	U	0.100	mg/L			04/04/24 12:19	1
Nitrite as N	<0.100	U	0.100	mg/L			04/04/24 12:19	1

Lab Sample ID: LCS 880-77358/4  
Matrix: Water  
Analysis Batch: 77358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	5.00	4.974		mg/L		99	90 - 110
Nitrite as N	5.00	5.063		mg/L		101	90 - 110

Lab Sample ID: LCSD 880-77358/5  
Matrix: Water  
Analysis Batch: 77358

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	5.00	4.967		mg/L		99	90 - 110	0	20
Nitrite as N	5.00	5.049		mg/L		101	90 - 110	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 860-153717/1-A  
Matrix: Water  
Analysis Batch: 153799

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 153717

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0200	U	0.0200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Antimony	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1
Arsenic	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1
Barium	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1
Beryllium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Boron	<0.0100	U	0.0100	mg/L		04/08/24 10:30	04/08/24 16:42	1
Cadmium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Chromium	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1
Cobalt	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Copper	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1
Iron	<0.100	U	0.100	mg/L		04/08/24 10:30	04/08/24 16:42	1
Lead	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Manganese	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Molybdenum	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Nickel	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Selenium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Silver	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Thallium	<0.00200	U	0.00200	mg/L		04/08/24 10:30	04/08/24 16:42	1
Uranium	<0.00100	U	0.00100	mg/L		04/08/24 10:30	04/08/24 16:42	1
Zinc	<0.00400	U	0.00400	mg/L		04/08/24 10:30	04/08/24 16:42	1

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

## Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 860-153717/2-A

Matrix: Water

Analysis Batch: 153799

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153717

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Aluminum	0.500	0.4977		mg/L		100	80 - 120	
Antimony	0.100	0.09738		mg/L		97	80 - 120	
Arsenic	0.100	0.09919		mg/L		99	80 - 120	
Barium	0.100	0.09745		mg/L		97	80 - 120	
Beryllium	0.100	0.09822		mg/L		98	80 - 120	
Boron	0.100	0.09577		mg/L		96	80 - 120	
Cadmium	0.100	0.09956		mg/L		100	80 - 120	
Chromium	0.100	0.1005		mg/L		101	80 - 120	
Cobalt	0.100	0.09972		mg/L		100	80 - 120	
Copper	0.100	0.09952		mg/L		100	80 - 120	
Iron	0.500	0.5145		mg/L		103	80 - 120	
Lead	0.100	0.09749		mg/L		97	80 - 120	
Manganese	0.100	0.09918		mg/L		99	80 - 120	
Molybdenum	0.100	0.09914		mg/L		99	80 - 120	
Nickel	0.100	0.09964		mg/L		100	80 - 120	
Selenium	0.100	0.09675		mg/L		97	80 - 120	
Silver	0.0500	0.04944		mg/L		99	80 - 120	
Thallium	0.100	0.09858		mg/L		99	80 - 120	
Uranium	0.0249	0.02495		mg/L		100	80 - 120	
Zinc	0.100	0.09938		mg/L		99	80 - 120	

Lab Sample ID: LCSD 860-153717/3-A

Matrix: Water

Analysis Batch: 153799

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 153717

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits		RPD	Limit
Aluminum	0.500	0.4962		mg/L		99	80 - 120		0	20
Antimony	0.100	0.09982		mg/L		100	80 - 120		2	20
Arsenic	0.100	0.09960		mg/L		100	80 - 120		0	20
Barium	0.100	0.09735		mg/L		97	80 - 120		0	20
Beryllium	0.100	0.09948		mg/L		99	80 - 120		1	20
Boron	0.100	0.09964		mg/L		100	80 - 120		4	20
Cadmium	0.100	0.1002		mg/L		100	80 - 120		1	20
Chromium	0.100	0.1006		mg/L		101	80 - 120		0	20
Cobalt	0.100	0.09981		mg/L		100	80 - 120		0	20
Copper	0.100	0.09957		mg/L		100	80 - 120		0	20
Iron	0.500	0.5113		mg/L		102	80 - 120		1	20
Lead	0.100	0.09835		mg/L		98	80 - 120		1	20
Manganese	0.100	0.09927		mg/L		99	80 - 120		0	20
Molybdenum	0.100	0.09951		mg/L		100	80 - 120		0	20
Nickel	0.100	0.09984		mg/L		100	80 - 120		0	20
Selenium	0.100	0.09643		mg/L		96	80 - 120		0	20
Silver	0.0500	0.04992		mg/L		100	80 - 120		1	20
Thallium	0.100	0.09997		mg/L		100	80 - 120		1	20
Uranium	0.0249	0.02525		mg/L		102	80 - 120		1	20
Zinc	0.100	0.09918		mg/L		99	80 - 120		0	20

Eurofins Midland

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 860-153844/1-A  
Matrix: Water  
Analysis Batch: 154012

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 153844

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	U	0.000200	mg/L		04/08/24 23:16	04/09/24 16:50	1

Lab Sample ID: LCS 860-153844/2-A  
Matrix: Water  
Analysis Batch: 154012

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 153844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00200	0.002040		mg/L		102	80 - 120

Lab Sample ID: LCSD 860-153844/3-A  
Matrix: Water  
Analysis Batch: 154012

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 153844

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00200	0.002039		mg/L		102	80 - 120	0	20

## Method: 420.4 - Phenolics, Total Recoverable

Lab Sample ID: MB 860-154711/16  
Matrix: Water  
Analysis Batch: 154711

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0100	U	0.0100	mg/L			04/12/24 10:55	1

Lab Sample ID: LCS 860-154711/17  
Matrix: Water  
Analysis Batch: 154711

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	0.100	0.09790		mg/L		98	90 - 110

Lab Sample ID: LCSD 860-154711/18  
Matrix: Water  
Analysis Batch: 154711

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenols, Total	0.100	0.1020		mg/L		102	90 - 110	4	20

Lab Sample ID: 880-41793-1 MS  
Matrix: Water  
Analysis Batch: 154711

Client Sample ID: Windwill  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	<0.0100	U F1	0.100	<0.0100	U F1	mg/L		0	90 - 110

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## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

## Method: 420.4 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: 880-41793-1 MSD  
Matrix: Water  
Analysis Batch: 154711

Client Sample ID: Windwill  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenols, Total	<0.0100	U F1	0.100	<0.0100	U F1	mg/L		0	90 - 110	NC	20

## Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 860-154355/24  
Matrix: Water  
Analysis Batch: 154355

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00500	U	0.00500	mg/L			04/11/24 10:30	1

Lab Sample ID: MB 860-154355/65  
Matrix: Water  
Analysis Batch: 154355

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00500	U	0.00500	mg/L			04/11/24 12:26	1

Lab Sample ID: LCS 860-154355/26  
Matrix: Water  
Analysis Batch: 154355

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.100	0.09006		mg/L		90	90 - 110

Lab Sample ID: LCSD 860-154355/67  
Matrix: Water  
Analysis Batch: 154355

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	0.100	0.1073		mg/L		107	90 - 110	2	20

Lab Sample ID: LLCS 860-154355/25  
Matrix: Water  
Analysis Batch: 154355

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.0100	0.01167		mg/L		117	50 - 150

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-77416/1  
Matrix: Water  
Analysis Batch: 77416

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0	mg/L			04/04/24 20:44	1

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QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 880-77416/2

Matrix: Water

Analysis Batch: 77416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	998.0		mg/L		100	80 - 120

Lab Sample ID: LCSD 880-77416/3

Matrix: Water

Analysis Batch: 77416

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1000		mg/L		100	80 - 120	0	10

Lab Sample ID: 880-41793-1 DU

Matrix: Water

Analysis Batch: 77416

Client Sample ID: Windwill

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1000		1003		mg/L		0	10

Method: SM 4500 H+ B - pH

Lab Sample ID: 880-41793-1 DU							Client Sample ID: Windwill			
Matrix: Water							Prep Type: Total/NA			
Analysis Batch: 77415										
	Sample	Sample		DU	DU					RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			Limit
pH	7.3	HF		7.3		S.U.			0.1	10
Temperature	22.0	HF		22.1		Deg. C			0.5	10

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

GC/MS VOA

Analysis Batch: 153663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8260D	
MB 860-153663/10	Method Blank	Total/NA	Water	8260D	
LCS 860-153663/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 860-153663/4	Lab Control Sample Dup	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 153448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3511	
MB 860-153448/1-A	Method Blank	Total/NA	Water	3511	
LCS 860-153448/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 860-153448/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 154192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 860-153448/1-A	Method Blank	Total/NA	Water	8270E	153448
LCS 860-153448/2-A	Lab Control Sample	Total/NA	Water	8270E	153448
LCSD 860-153448/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	153448

Analysis Batch: 154487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8270E	153448

Analysis Batch: 154867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8270E	153448

GC Semi VOA

Prep Batch: 153141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3511	
MB 860-153141/1-A	Method Blank	Total/NA	Water	3511	
LCS 860-153141/4-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 860-153141/5-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 153438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8082A	153141
MB 860-153141/1-A	Method Blank	Total/NA	Water	8082A	153141
LCS 860-153141/4-A	Lab Control Sample	Total/NA	Water	8082A	153141
LCSD 860-153141/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	153141

HPLC/IC

Analysis Batch: 77357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 880-77357/3	Method Blank	Total/NA	Water	300.0	
LCS 880-77357/4	Lab Control Sample	Total/NA	Water	300.0	

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QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

HPLC/IC (Continued)

Analysis Batch: 77357 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-77357/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 77358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 880-77358/3	Method Blank	Total/NA	Water	300.0	
LCS 880-77358/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-77358/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 669273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 400-669273/53	Method Blank	Total/NA	Water	300.0	
LCS 400-669273/54	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-669273/55	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Prep Batch: 153717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3010A	
MB 860-153717/1-A	Method Blank	Total/NA	Water	3010A	
LCS 860-153717/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 860-153717/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 153799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	6020B	153717
MB 860-153717/1-A	Method Blank	Total/NA	Water	6020B	153717
LCS 860-153717/2-A	Lab Control Sample	Total/NA	Water	6020B	153717
LCSD 860-153717/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	153717

Prep Batch: 153844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	7470A	
MB 860-153844/1-A	Method Blank	Total/NA	Water	7470A	
LCS 860-153844/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 860-153844/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 154012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	7470A	153844
MB 860-153844/1-A	Method Blank	Total/NA	Water	7470A	153844
LCS 860-153844/2-A	Lab Control Sample	Total/NA	Water	7470A	153844
LCSD 860-153844/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	153844

General Chemistry

Analysis Batch: 77415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	SM 4500 H+ B	
880-41793-1 DU	Windwill	Total/NA	Water	SM 4500 H+ B	

Eurofins Midland



QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

General Chemistry

Analysis Batch: 77416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	SM 2540C	
MB 880-77416/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-77416/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-77416/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-41793-1 DU	Windwill	Total/NA	Water	SM 2540C	

Analysis Batch: 154355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	Kelada 01	
MB 860-154355/24	Method Blank	Total/NA	Water	Kelada 01	
MB 860-154355/65	Method Blank	Total/NA	Water	Kelada 01	
LCS 860-154355/26	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 860-154355/67	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
LLCS 860-154355/25	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 154711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	420.4	
MB 860-154711/16	Method Blank	Total/NA	Water	420.4	
LCS 860-154711/17	Lab Control Sample	Total/NA	Water	420.4	
LCSD 860-154711/18	Lab Control Sample Dup	Total/NA	Water	420.4	
880-41793-1 MS	Windwill	Total/NA	Water	420.4	
880-41793-1 MSD	Windwill	Total/NA	Water	420.4	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Client Sample ID: Windwill  
Date Collected: 04/03/24 10:15  
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	153663	04/08/24 12:45	NA	EET HOU
Total/NA	Prep	3511			35.00 mL	2.00 mL	153448	04/04/24 16:00	DR	EET HOU
Total/NA	Analysis	8270E		1	1 mL	1 mL	154487	04/12/24 16:15	EM	EET HOU
Total/NA	Prep	3511			35.00 mL	2.00 mL	153448	04/04/24 16:00	DR	EET HOU
Total/NA	Analysis	8270E		1	1 mL	1 mL	154867	04/16/24 00:21	EM	EET HOU
Total/NA	Prep	3511			48.1 mL	5 mL	153141	04/04/24 21:01	DS	EET HOU
Total/NA	Analysis	8082A		1			153438	04/05/24 16:32	WP	EET HOU
Total/NA	Analysis	300.0		5	10 mL	10 mL	77357	04/04/24 19:24	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	77357	04/04/24 19:41	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	77358	04/04/24 19:41	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	669273	04/25/24 16:53	LHB	EET PEN
Total/NA	Prep	3010A			50 mL	50 mL	153717	04/08/24 10:30	MD	EET HOU
Total/NA	Analysis	6020B		1			153799	04/08/24 17:36	SHZ	EET HOU
Total/NA	Prep	7470A			50 mL	50 mL	153844	04/08/24 23:16	AGR	EET HOU
Total/NA	Analysis	7470A		1			154012	04/09/24 17:16	SHZ	EET HOU
Total/NA	Analysis	420.4		1	10 mL	10 mL	154711	04/12/24 11:33	ADL	EET HOU
Total/NA	Analysis	Kelada 01		1	50 mL	50 mL	154355	04/11/24 11:25	ADL	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	77416	04/04/24 20:44	SMC	EET MID
Total/NA	Analysis	SM 4500 H+ B		1			77415	04/04/24 20:18	SMC	EET MID

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
420.4		Water	Phenols, Total
6020B	3010A	Water	Uranium
8270E	3511	Water	1-Methylnaphthalene

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-24
ANAB	ISO/IEC 17025	L2471	02-22-26
Arkansas DEQ	State	88-00689	08-01-24
California	State	2510	06-30-24
Florida	NELAP	E81010	06-30-24
Georgia	State	E81010(FL)	06-30-24
Illinois	NELAP	200041	10-09-24
Kansas	NELAP	E-10253	10-31-24
Kentucky (UST)	State	53	06-30-24
Louisiana (All)	NELAP	30976	06-30-24
Louisiana (DW)	State	LA017	12-31-24
North Carolina (WW/SW)	State	314	12-31-24
Oklahoma	NELAP	9810	08-31-24
Pennsylvania	NELAP	68-00467	01-31-25
South Carolina	State	96026	06-30-24
Tennessee	State	TN02907	06-30-24
Texas	NELAP	T104704286	09-30-24
US Fish & Wildlife	US Federal Programs	A22340	06-30-24
USDA	US Federal Programs	FLGNV23001	01-08-26
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-24
West Virginia DEP	State	136	03-31-25

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET HOU
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET HOU
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET HOU
300.0	Anions, Ion Chromatography	EPA	EET MID
300.0	Anions, Ion Chromatography	EPA	EET PEN
6020B	Metals (ICP/MS)	SW846	EET HOU
7470A	Mercury (CVAA)	SW846	EET HOU
420.4	Phenolics, Total Recoverable	EPA	EET HOU
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
SM 4500 H+ B	pH	SM	EET MID
3010A	Preparation, Total Metals	SW846	EET HOU
3511	Microextraction of Organic Compounds	SW846	EET HOU
5030C	Purge and Trap	SW846	EET HOU
7470A	Preparation, Mercury	SW846	EET HOU

**Protocol References:**

EPA = US Environmental Protection Agency

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:**

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-41793-1	Windwill	Water	04/03/24 10:15	04/03/24 14:48

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Morienfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

DATE: 4/3/2024  
PO# \_\_\_\_\_  
PROJECT LOCATION OR NAME Drache/EGD U37  
LAI PROJECT # 19-0112-49 COLLECTOR ML



No. 3238  
1STODY

Data Reported to

Mark Varson/Robert Nelson

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State  
Mtn/MN

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

**ANALYSES**  
BTEX ☐ MTBE ☐

TRPH 418 T ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200.8 ☐ TCLP ☐

RQI ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECHLORATE ☐

CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

See attached  
3103 Parameter  
Bill Appleby  
(Bruce Bahm)

TOTAL

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

LABORATORY X CHCO

TURN AROUND TIME  
NORMAL ☒  
1 DAY ☐  
2 DAY ☐  
OTHER ☐

LABORATORY USE ONLY:  
RECEIVING TEMP 30/35 THERM# 108-10

CUSTODY SEALS - ☐ BROKEN ☒ CONTACT ☐ NOT USED

CARRIER BILL # \_\_\_\_\_

☒ HAND DELIVERED

(a)	Antimony (Sb) (CAS 7440-36-0)	0.006 mg/l
(b)	Arsenic (As) (CAS 7440-38-2)	0.01 mg/l
(c)	Barium (Ba) (CAS 7440-39-3)	2 mg/l
(d)	Beryllium (Be) (CAS 7440-41-7)	0.004 mg/l
(e)	Cadmium (Cd) (CAS 7440-43-9)	0.005 mg/l
(f)	Chromium (Cr) (CAS 7440-47-3)	0.05 mg/l

(1) Numerical Standards  
A. Human Health Standards

LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection E of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "methods for chemical analysis of water and waste of the U.S. environmental protection agency," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total nonfiltered concentrations of the contaminants. If the secretary determines that there is a reasonable probability of facilitated contaminant transport by colloids or organic macromolecules, or that proper filtration procedures are not being followed, the discharger may be required to test for both filtered and nonfiltered portions of inorganic contaminants to develop appropriate protocol for monitoring contaminants that have the potential to migrate through the aquifer.

**20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR**

[12-1-95, 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2 III 3102, 1-15-01]  
**20.6.2.3102: [RESERVED]**

[2-18-77; 20.6.2.3101 NMAC - Rn, 20 NMAC 6.2 III 3101, 1-15-01]  
The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations

**C.** Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources

**B.** If the existing concentration of any water contaminant in ground water exceeds the standard of Section 20.6.2.3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

**(2)** If the existing concentration of any water contaminant in ground water exceeds the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

**(1)** If the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be written so that in general.

**A.** The purpose of Sections 20.6.2.3000 through 20.6.2.3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.3000 through 20.6.2.3114 NMAC are

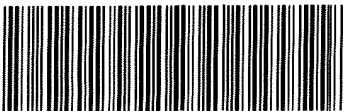
**PURPOSE:**

[12-1-95, 20.6.2.3001 - 20.6.2.3100 NMAC - Rn, 20 NMAC 6.2 II 2202-3100, 1-15-01]  
**20.6.2.3001 - 20.6.2.3100: [RESERVED]**

[12-1-95, 20.6.2.3000 NMAC - Rn, 20 NMAC 6.2 III, 1-15-01]  
**20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:**

[12-1-95, 20.6.2.2202 - 20.6.2.2999 NMAC - Rn, 20 NMAC 6.2 II 2202-3100, 1-15-01]  
**20.6.2.2202 - 20.6.2.2999: [RESERVED]**

880-41793 Chain of Custody





20

20.6.2 NMAC

(g)	Cyanide (CN) (CAS 57-12-5)	0.2 mg/l
(h)	Fluoride (F) (CAS 16984-48-8)	1.6 mg/l
(i)	Lead (Pb) (CAS 7439-92-1)	0.015 mg/l
(j)	Total Mercury (Hg) (CAS 7439-97-6)	0.002 mg/l
(k)	Nitrate (NO <sub>3</sub> as N) (CAS 14797-55-8)	10.0 mg/l
(l)	Nitrite (NO <sub>2</sub> as N) (CAS 10102-44-0)	1.0 mg/l
(m)	Selenium (Se) (CAS 7782-49-2)	0.05 mg/l
(n)	Silver (Ag) (CAS 7440-224)	0.05 mg/l
(o)	Thallium (Tl) (CAS 7440-28-0)	0.002 mg/l
(p)	Uranium (U) (CAS 7440-61-1)	0.03 mg/l
(q)	Radioactivity Combined Radium-226 (CAS 13982-63-3) and Radium-228 (CAS 15262-20-1)	5 pCi/l
(r)	Benzene (CAS 71-43-2)	0.005 mg/l
(s)	Polychlorinated biphenyls (PCBs) (CAS 1336-36-3)	0.0005 mg/l
(t)	Toluene (CAS 108-88-3)	1 mg/l
(u)	Carbon Tetrachloride (CAS 56-23-5)	0.005 mg/l
(v)	1,2-dichloroethane (EDC) (CAS 107-06-2)	0.005 mg/l
(w)	1,1-dichloroethylene (1,1-DCE) (CAS 75-35-4)	0.007 mg/l
(x)	tetrachloroethylene (PCE) (CAS 127-18-4)	0.005 mg/l
(y)	trichloroethylene (TCE) (CAS 79-01-6)	0.005 mg/l
(z)	ethylbenzene (CAS 100-41-4)	0.7 mg/l
(aa)	total xylenes (CAS 1330-20-7)	0.62 mg/l
(bb)	methylene chloride (CAS 75-09-2)	0.005 mg/l
(cc)	chloroform (CAS 67-66-3)	0.1 mg/l
(dd)	1,1-dichloroethane (CAS 75-34-3)	0.025 mg/l
(ee)	ethylene dibromide (EDB) (CAS 106-93-4)	0.00005 mg/l
(ff)	1,1,1-trichloroethane (CAS 71-55-6)	0.2 mg/l
(gg)	1,1,2-trichloroethane (CAS 79-00-5)	0.005 mg/l
(hh)	1,1,2,2-tetrachloroethane (CAS 79-34-5)	0.01 mg/l
(ii)	vinyl chloride (CAS 75-01-4)	0.002 mg/l
(jj)	PAHs total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes	0.03 mg/l
(kk)	benzo-a-pyrene (CAS 50-32-8)	0.0002 mg/l
(ll)	cis-1,2-dichloroethene (CAS 156-59-2)	0.07 mg/l
(mm)	trans-1,2-dichloroethene (CAS 156-60-5)	0.1 mg/l
(nn)	1,2-dichloropropane (PDC) (CAS 78-87-5)	0.005 mg/l
(oo)	styrene (CAS 100-42-5)	0.1 mg/l
(pp)	1,2-dichlorobenzene (CAS 95-50-1)	0.6 mg/l
(qq)	1,4-dichlorobenzene (CAS 106-46-7)	0.075 mg/l
(rr)	1,2,4-trichlorobenzene (CAS 120-82-1)	0.07 mg/l
(ss)	pentachlorophenol (CAS 87-86-5)	0.001 mg/l
(tt)	atrazine (CAS 1912-24-9)	0.003 mg/l
(2)	<b>Standards for Toxic Pollutants.</b> A toxic pollutant shall not be present at a concentration shown by credible scientific data and other evidence appropriate under the Water Quality Act, currently available to the public, to have potential for causing one or more of the following effects upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains. (1) unreasonably threatens to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring, or (2) creates a lifetime risk of more than one cancer per 100,000 exposed persons	
(3)	<b>Standards for Non-Aqueous Phase Liquids.</b> Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.	
<b>B. Other Standards for Domestic Water Supply</b>		
(1)	Chloride (Cl) (CAS 16887-00-6)	250.0 mg/l
(2)	Copper (Cu) (CAS 7440-50-8)	1.0 mg/l
(3)	Iron (Fe) (CAS 7439-89-6)	1.0 mg/l

41793



20 6 2 NMAC

in this section, arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the received directly from any sewerage system,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is regulations,

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" to obtain the appropriate samples, this exemption shall not apply;

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access

20 6 2 3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

20 6 2 3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20 6 2 3111 NMAC, regarding transfers [2-18-77, 12-24-87, 12-1-95, Rn & A, 20 6 2 3104 NMAC - 20 NMAC 6.2.III 3104, 1-15-01, A, 12-1-01]

20 6 2 3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al) (CAS 7429-90-5) 5 0 mg/l

(2) Boron (B) (CAS 7440-42-8) 0 75 mg/l

(3) Cobalt (Co) (CAS 7440-48-4) 0 05 mg/l

(4) Molybdenum (Mo) (CAS 7439-98-7) 1 0 mg/l

(5) Nickel (Ni) (CAS 7440-02-0) 0 2 mg/l

For purposes of application of the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylchloroethane and benzo-a-pyrene, 1,1,2-trichloroethane and benzo-a-pyrene shall not apply unless the secretary notifies the responsible person that the site is a source of these contaminants in ground water that pose a hazard to public health

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95, 20 6 2 3103 NMAC - Rn, 20 NMAC 6.2.III 3103, 1-15-01, A, 9-26-04, A, 12-21-18]

[Note. For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007.]

41793

Loc: 880

Released to Imaging: 7/24/2024 4:45:59 PM


OCD Ex. 6-0746

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4/30/2024

**Eurofins Midland**  
1211 W. Florida Ave  
Midland, TX 79701  
Phone: 432-704-5440

## Chain of Custody Record



## Environment Testing

[illegible]

## Chain of Custody Record

**Phone: 432-704-5440**



## Environment Testing

OCD Ex. 6-0748  
Page 34 of 37

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-1  
SDG Number: 19-0112-49

Login Number: 41793  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-41793-1

SDG Number: 19-0112-49

Login Number: 41793

List Number: 2

Creator: Baker, Jeremiah

List Source: Eurofins Houston

List Creation: 04/04/24 12:52 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-41793-1

SDG Number: 19-0112-49

Login Number: 41793

List Number: 4

Creator: Earnest, Tamantha

List Source: Eurofins Pensacola

List Creation: 04/22/24 03:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
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	2.0°C IR8
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 5/3/2024 10:38:04 AM

## JOB DESCRIPTION

Apache/EBDU 37  
19-0112-49

## JOB NUMBER

880-41793-2

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701



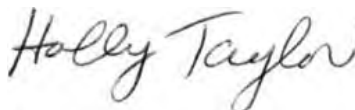
# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
5/3/2024 10:38:04 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296



Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Laboratory Job ID: 880-41793-2  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Qualifiers

Rad	
Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project: Apache/EBDU 37

Job ID: 880-41793-2

Job ID: 880-41793-2

Eurofins Midland

Job Narrative  
880-41793-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/3/2024 2:48 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C.

Gas Flow Proportional Counter

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Client Sample ID: Windwill  
Date Collected: 04/03/24 10:15  
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1  
Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.344		0.154	0.157	1.00	0.159	pCi/L	04/08/24 10:35	04/30/24 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					04/08/24 10:35	04/30/24 09:42	1

Method: EPA 904.0 - Radium-228 (GFPC)										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.601		0.402	0.406	1.00	0.596	pCi/L	04/08/24 10:40	04/28/24 11:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					04/08/24 10:40	04/28/24 11:39	1
Y Carrier	70.3		30 - 110					04/08/24 10:40	04/28/24 11:39	1

Tracer/Carrier Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
880-41793-1	Windwill	90.5							
LCS 160-655852/2-A	Lab Control Sample	94.0							
MB 160-655852/1-A	Method Blank	102							
Tracer/Carrier Legend									
Ba = Ba Carrier									

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
880-41793-1	Windwill	90.5	70.3						
LCS 160-655853/2-A	Lab Control Sample	94.0	86.0						
MB 160-655853/1-A	Method Blank	102	89.3						
Tracer/Carrier Legend									
Ba = Ba Carrier									
Y = Y Carrier									

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

## Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-655852/1-A  
Matrix: Water  
Analysis Batch: 659273

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 655852

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07913	U	0.0935	0.0938	1.00	0.152	pCi/L	04/08/24 10:35	04/30/24 09:41	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					04/08/24 10:35	04/30/24 09:41	1

Lab Sample ID: LCS 160-655852/2-A  
Matrix: Water  
Analysis Batch: 659273

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 655852

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	9.865		1.14	1.00	0.146	pCi/L	87	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	94.0		30 - 110							

## Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-655853/1-A  
Matrix: Water  
Analysis Batch: 659062

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 655853

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08801	U	0.276	0.276	1.00	0.490	pCi/L	04/08/24 10:40	04/28/24 11:39	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					04/08/24 10:40	04/28/24 11:39	1
Y Carrier	89.3		30 - 110					04/08/24 10:40	04/28/24 11:39	1

Lab Sample ID: LCS 160-655853/2-A  
Matrix: Water  
Analysis Batch: 659062

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 655853

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.99	9.634		1.28	1.00	0.435	pCi/L	107	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	94.0		30 - 110							
Y Carrier	86.0		30 - 110							

Eurofins Midland

QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Rad

Prep Batch: 655852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	PrecSep-21	
MB 160-655852/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-655852/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 655853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	PrecSep_0	
MB 160-655853/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-655853/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Client Sample ID: Windwill  
Date Collected: 04/03/24 10:15  
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	655852	04/08/24 10:35	KAK	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	659273	04/30/24 09:42	SCB	EET SL
Total/NA	Prep	PrecSep_0			999.46 mL	1.0 g	655853	04/08/24 10:40	KAK	EET SL
Total/NA	Analysis	904.0		1			659062	04/28/24 11:39	SCB	EET SL

Laboratory References:  
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	10-31-24

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-41793-1	Windwill	Water	04/03/24 10:15	04/03/24 14:48

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**Varson & Associates, Inc.**  
Environmental Consultants

507 N. Morienfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

DATE: 4/3/2024  
PO# \_\_\_\_\_  
PROJECT LOCATION OR NAME Drache/EGD U37  
LAI PROJECT # 19-0112-49 COLLECTOR ML



880-41793 Chain of Custody

No. 3238  
ISTODY

Data Reported to

Mark Varson/Robert Nelson

TRRP report?  
☐ Yes ☒ No

S=SOIL  
W=WATER  
A=AIR  
P=PAINT  
SL=SLUDGE  
OT=OTHER

TIME ZONE  
Time zone/State  
Mtn/MN

Field  
Sample ID

Lab #

Date

Time

Matrix

# of Containers

HCl

HNO<sub>3</sub>

H<sub>2</sub>SO<sub>4</sub> ☐ NaOH ☐

ICE

UNPRESERVED

**ANALYSES**  
BTEX ☐ MTBE ☐

TRPH 418 T ☐ TPH 1005 ☐ TPH 1006 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

8082 PCBs ☐

TCLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ DW 200.8 ☐ TCLP ☐

RQ ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

PH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECTHLORATE ☐

CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

See attached  
3103 Parameter  
Bill Appleby  
(Bruce Bahm)

TOTAL

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

RELINQUISHED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

LABORATORY X CHCO

TURN AROUND TIME

NORMAL ☒

1 DAY ☐

2 DAY ☐

OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP 30/35 THERM# 108-10

CUSTODY SEALS - ☐ BROKEN ☒ CONTACT ☐ NOT USED

CARRIER BILL # \_\_\_\_\_

HAND DELIVERED ☒

(a)	Antimony (Sb) (CAS 7440-36-0)	0.006 mg/l
(b)	Arsenic (As) (CAS 7440-38-2)	0.01 mg/l
(c)	Barium (Ba) (CAS 7440-39-3)	2 mg/l
(d)	Beryllium (Be) (CAS 7440-41-7)	0.004 mg/l
(e)	Cadmium (Cd) (CAS 7440-43-9)	0.005 mg/l
(f)	Chromium (Cr) (CAS 7440-47-3)	0.05 mg/l

(1) Numerical Standards  
A. Human Health Standards

LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection E of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "methods for chemical analysis of water and waste of the U.S. environmental protection agency," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total nonfiltered concentrations of the contaminants. If the secretary determines that there is a reasonable probability of facilitated contaminant transport by colloids or organic macromolecules, or that proper filtration procedures are not being followed, the discharger may be required to test for both filtered and nonfiltered portions of inorganic contaminants to develop appropriate protocol for monitoring contaminants that have the potential to migrate through the aquifer.

**20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR**

[12-1-95, 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2 III 3102, 1-15-01]  
**20.6.2.3102: [RESERVED]**

[2-18-77; 20.6.2.3101 NMAC - Rn, 20 NMAC 6.2 III 3101, 1-15-01]  
The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations

**C.** Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources

**B.** If the existing concentration of any water contaminant in ground water exceeds the standard of Section 20.6.2.3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

**(2)** If the existing concentration of any water contaminant in ground water exceeds the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

**(1)** If the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be written so that in general.

**A.** The purpose of Sections 20.6.2.3000 through 20.6.2.3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.3000 through 20.6.2.3114 NMAC are

**PURPOSE:**

[12-1-95, 20.6.2.3001 - 20.6.2.3100 NMAC - Rn, 20 NMAC 6.2 II 2202-3100, 1-15-01]  
**20.6.2.3001 - 20.6.2.3100: [RESERVED]**

[12-1-95, 20.6.2.3000 NMAC - Rn, 20 NMAC 6.2 III, 1-15-01]  
**20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:**

[12-1-95, 20.6.2.2202 - 20.6.2.2999 NMAC - Rn, 20 NMAC 6.2 II 2202-3100, 1-15-01]  
**20.6.2.2202 - 20.6.2.2999: [RESERVED]**

880-41793 Chain of Custody



20

20.6.2 NMAC

(g)	Cyanide (CN) (CAS 57-12-5)	0.2 mg/l
(h)	Fluoride (F) (CAS 16984-48-8)	1.6 mg/l
(i)	Lead (Pb) (CAS 7439-92-1)	0.015 mg/l
(j)	Total Mercury (Hg) (CAS 7439-97-6)	0.002 mg/l
(k)	Nitrate (NO <sub>3</sub> as N) (CAS 14797-55-8)	10.0 mg/l
(l)	Nitrite (NO <sub>2</sub> as N) (CAS 10102-44-0)	1.0 mg/l
(m)	Selenium (Se) (CAS 7782-49-2)	0.05 mg/l
(n)	Silver (Ag) (CAS 7440-224)	0.05 mg/l
(o)	Thallium (Tl) (CAS 7440-28-0)	0.002 mg/l
(p)	Uranium (U) (CAS 7440-61-1)	0.03 mg/l
(q)	Radioactivity Combined Radium-226 (CAS 13982-63-3) and Radium-228 (CAS 15262-20-1)	5 pCi/l
(r)	Benzene (CAS 71-43-2)	0.005 mg/l
(s)	Polychlorinated biphenyls (PCBs) (CAS 1336-36-3)	0.0005 mg/l
(t)	Toluene (CAS 108-88-3)	1 mg/l
(u)	Carbon Tetrachloride (CAS 56-23-5)	0.005 mg/l
(v)	1,2-dichloroethane (EDC) (CAS 107-06-2)	0.005 mg/l
(w)	1,1-dichloroethylene (1,1-DCE) (CAS 75-35-4)	0.007 mg/l
(x)	tetrachloroethylene (PCE) (CAS 127-18-4)	0.005 mg/l
(y)	trichloroethylene (TCE) (CAS 79-01-6)	0.005 mg/l
(z)	ethylbenzene (CAS 100-41-4)	0.7 mg/l
(aa)	total xylenes (CAS 1330-20-7)	0.62 mg/l
(bb)	methylene chloride (CAS 75-09-2)	0.005 mg/l
(cc)	chloroform (CAS 67-66-3)	0.1 mg/l
(dd)	1,1-dichloroethane (CAS 75-34-3)	0.025 mg/l
(ee)	ethylene dibromide (EDB) (CAS 106-93-4)	0.00005 mg/l
(ff)	1,1,1-trichloroethane (CAS 71-55-6)	0.2 mg/l
(gg)	1,1,2-trichloroethane (CAS 79-00-5)	0.005 mg/l
(hh)	1,1,2,2-tetrachloroethane (CAS 79-34-5)	0.01 mg/l
(ii)	vinyl chloride (CAS 75-01-4)	0.002 mg/l
(jj)	PAHs total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes	0.03 mg/l
(kk)	benzo-a-pyrene (CAS 50-32-8)	0.0002 mg/l
(ll)	cis-1,2-dichloroethene (CAS 156-59-2)	0.07 mg/l
(mm)	trans-1,2-dichloroethene (CAS 156-60-5)	0.1 mg/l
(nn)	1,2-dichloropropane (PDC) (CAS 78-87-5)	0.005 mg/l
(oo)	styrene (CAS 100-42-5)	0.1 mg/l
(pp)	1,2-dichlorobenzene (CAS 95-50-1)	0.6 mg/l
(qq)	1,4-dichlorobenzene (CAS 106-46-7)	0.075 mg/l
(rr)	1,2,4-trichlorobenzene (CAS 120-82-1)	0.07 mg/l
(ss)	pentachlorophenol (CAS 87-86-5)	0.001 mg/l
(tt)	atrazine (CAS 1912-24-9)	0.003 mg/l
(2)	<b>Standards for Toxic Pollutants.</b> A toxic pollutant shall not be present at a concentration shown by credible scientific data and other evidence appropriate under the Water Quality Act, currently available to the public, to have potential for causing one or more of the following effects upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains. (1) unreasonably threatens to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring, or (2) creates a lifetime risk of more than one cancer per 100,000 exposed persons	
(3)	<b>Standards for Non-Aqueous Phase Liquids.</b> Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.	
(1)	Chloride (Cl) (CAS 16887-00-6)	250.0 mg/l
(2)	Copper (Cu) (CAS 7440-50-8)	1.0 mg/l
(3)	Iron (Fe) (CAS 7439-89-6)	1.0 mg/l

**B. Other Standards for Domestic Water Supply**

41793



20 6 2 NMAC

in this section, arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the received directly from any sewerage system,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is regulations,

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" to obtain the appropriate samples, this exemption shall not apply;

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access

20 6 2 3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

20 6 2 3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20 6 2 3111 NMAC, regarding transfers [2-18-77, 12-24-87, 12-1-95, Rn & A, 20 6 2 3104 NMAC - 20 NMAC 6.2.III 3104, 1-15-01, A, 12-1-01]

20 6 2 3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided

Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al) (CAS 7429-90-5) 5 0 mg/l

(2) Boron (B) (CAS 7440-42-8) 0 75 mg/l

(3) Cobalt (Co) (CAS 7440-48-4) 0 05 mg/l

(4) Molybdenum (Mo) (CAS 7439-98-7) 1 0 mg/l

(5) Nickel (Ni) (CAS 7440-02-0) 0 2 mg/l

For purposes of application of the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylchloroethane and benzo-a-pyrene, 1,1,2-trichloroethane and benzo-a-pyrene shall not apply unless the secretary notifies the responsible person that the site is a source of these contaminants in ground water that pose a hazard to public health

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95, 20 6 2 3103 NMAC - Rn, 20 NMAC 6.2.III 3103, 1-15-01, A, 9-26-04, A, 12-21-18]

[Note. For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007.]

41793

Loc: 880

Released to Imaging: 7/24/2024 4:45:59 PM

OCD Ex. 6-0768

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5/3/2024

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-2  
SDG Number: 19-0112-49

Login Number: 41793  
List Number: 1  
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-41793-2

SDG Number: 19-0112-49

Login Number: 41793

List Number: 3

Creator: Thornley, Richard W

List Source: Eurofins St. Louis

List Creation: 04/04/24 03:25 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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?	N/A	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Mark J Larson  
Larson & Associates, Inc.  
507 N Marienfeld  
Suite 202  
Midland, Texas 79701

Generated 5/8/2024 10:26:17 AM

## JOB DESCRIPTION

EBDU #37  
19-0112-49

## JOB NUMBER

880-43023-1

Eurofins Midland  
1211 W. Florida Ave  
Midland TX 79701

# Eurofins Midland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
5/8/2024 10:26:17 AM

Authorized for release by  
Holly Taylor, Project Manager  
[Holly.Taylor@et.eurofinsus.com](mailto:Holly.Taylor@et.eurofinsus.com)  
(806)794-1296

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Laboratory Job ID: 880-43023-1  
SDG: 19-0112-49

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Definitions/Glossary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Qualifiers

Metals	
Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.  
Project: EBDU #37

Job ID: 880-43023-1

Job ID: 880-43023-1

Eurofins Midland

Job Narrative  
880-43023-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 5/3/2024 8:24 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 5.4°C.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Client Sample ID: Windmill  
Date Collected: 05/02/24 13:09  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-1  
Matrix: Water

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Barium	0.220		0.00400	mg/L		05/07/24 12:00	05/07/24 18:39	1	

Client Sample ID: TMW -1  
Date Collected: 05/02/24 13:18  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-2  
Matrix: Water

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Barium	0.445		0.00400	mg/L		05/07/24 12:00	05/07/24 18:54	1	

Client Sample ID: TMW -3  
Date Collected: 05/02/24 13:28  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-3  
Matrix: Water

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Barium	0.0299		0.00400	mg/L		05/07/24 12:00	05/07/24 18:56	1	

Client Sample ID: TMW -21  
Date Collected: 05/02/24 13:45  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-4  
Matrix: Water

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Barium	0.0470		0.00400	mg/L		05/07/24 12:00	05/07/24 18:58	1	

## QC Sample Results

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

## Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: LLCS 860-158872/4-A  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 158872

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.00400	0.003274	J	mg/L		82	50 - 150

Lab Sample ID: MB 860-158841/1-B  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Method Blank  
Prep Type: Dissolved  
Prep Batch: 158872

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00400	U	0.00400	mg/L		05/07/24 12:00	05/07/24 18:33	1

Lab Sample ID: LCS 860-158841/2-B  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Lab Control Sample  
Prep Type: Dissolved  
Prep Batch: 158872

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.09549		mg/L		95	85 - 115

Lab Sample ID: LCSD 860-158841/3-B  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Lab Control Sample Dup  
Prep Type: Dissolved  
Prep Batch: 158872

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.100	0.09538		mg/L		95	85 - 115	0	20

Lab Sample ID: 880-43023-1 MS  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Windmill  
Prep Type: Dissolved  
Prep Batch: 158872

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.220		0.100	0.3177		mg/L		98	70 - 130

Lab Sample ID: 880-43023-1 MSD  
Matrix: Water  
Analysis Batch: 158963

Client Sample ID: Windmill  
Prep Type: Dissolved  
Prep Batch: 158872

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.220		0.100	0.3228		mg/L		103	70 - 130	2	20

Eurofins Midland



QC Association Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Metals

Filtration Batch: 158841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	Filtration	
880-43023-2	TMW -1	Dissolved	Water	Filtration	
880-43023-3	TMW -3	Dissolved	Water	Filtration	
880-43023-4	TMW -21	Dissolved	Water	Filtration	
MB 860-158841/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
880-43023-1 MS	Windmill	Dissolved	Water	Filtration	
880-43023-1 MSD	Windmill	Dissolved	Water	Filtration	

Prep Batch: 158872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	200.8	158841
880-43023-2	TMW -1	Dissolved	Water	200.8	158841
880-43023-3	TMW -3	Dissolved	Water	200.8	158841
880-43023-4	TMW -21	Dissolved	Water	200.8	158841
MB 860-158841/1-B	Method Blank	Dissolved	Water	200.8	158841
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	200.8	158841
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	158841
LLCS 860-158872/4-A	Lab Control Sample	Total Recoverable	Water	200.8	
880-43023-1 MS	Windmill	Dissolved	Water	200.8	158841
880-43023-1 MSD	Windmill	Dissolved	Water	200.8	158841

Analysis Batch: 158963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	200.8	158872
880-43023-2	TMW -1	Dissolved	Water	200.8	158872
880-43023-3	TMW -3	Dissolved	Water	200.8	158872
880-43023-4	TMW -21	Dissolved	Water	200.8	158872
MB 860-158841/1-B	Method Blank	Dissolved	Water	200.8	158872
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	200.8	158872
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	158872
LLCS 860-158872/4-A	Lab Control Sample	Total Recoverable	Water	200.8	158872
880-43023-1 MS	Windmill	Dissolved	Water	200.8	158872
880-43023-1 MSD	Windmill	Dissolved	Water	200.8	158872

Lab Chronicle

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Client Sample ID: Windmill  
Date Collected: 05/02/24 13:09  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-1  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:39	DP	EET HOU

Client Sample ID: TMW -1  
Date Collected: 05/02/24 13:18  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-2  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:54	DP	EET HOU

Client Sample ID: TMW -3  
Date Collected: 05/02/24 13:28  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-3  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:56	DP	EET HOU

Client Sample ID: TMW -21  
Date Collected: 05/02/24 13:45  
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-4  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:58	DP	EET HOU

Laboratory References:  
EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Laboratory: Eurofins Houston

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215	06-30-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET HOU
200.8	Preparation, Total Recoverable Metals	EPA	EET HOU
Filtration	Sample Filtration	None	EET HOU

- Protocol References:**
- EPA = US Environmental Protection Agency
  - None = None
- Laboratory References:**
- EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.  
Project/Site: EBDU #37

Job ID: 880-43023-1  
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-43023-1	Windmill	Water	05/02/24 13:09	05/03/24 08:24
880-43023-2	TMW -1	Water	05/02/24 13:18	05/03/24 08:24
880-43023-3	TMW -3	Water	05/02/24 13:28	05/03/24 08:24
880-43023-4	TMW -21	Water	05/02/24 13:45	05/03/24 08:24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

**Varson & Associates, Inc.**  
Environmental Consultants

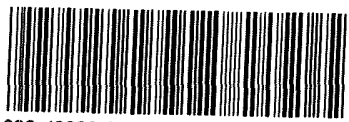
507 N. Maientenfeld, Ste. 202  
Midland, TX 79701  
432-687-0901

Data Reported to

DATE: 5/13/2024 PAGE 1 OF 1  
PO# \_\_\_\_\_ LAB WORK ORDER# \_\_\_\_\_  
PROJECT LOCATION OR NAME EBD #37  
LAI PROJECT # 17-0112-49 COLLECTOR 201026

43023 No. 3311  
CHAIN-OF-CUSTODY

TRRP report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	S=SOIL W=WATER A=AIR	P=PAINT SL=SLUDGE OT=OTHER	RECEIVED BY (Signature) <u>[Signature]</u>		TURN AROUND TIME NORMAL <input type="checkbox"/> 1 DAY <input checked="" type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER <input type="checkbox"/>	LABORATORY USE ONLY: RECEIVING TEMP <u>55.5</u> THERM# <u>TR8</u> CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____ <input type="checkbox"/> HAND DELIVERED	
TIME ZONE Time zone/State <u>AST/NA</u>	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION HCl HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> ICE UNPRESERVED	ANALYSES BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> TPH 418.1 <input type="checkbox"/> TPH 1005 <input type="checkbox"/> TPH 1006 <input type="checkbox"/> GASOLINE MOD 8015 <input type="checkbox"/> DIESEL - MOD 8015 <input type="checkbox"/> OIL - MOD 8015 <input type="checkbox"/> VOC 8280 <input type="checkbox"/> SVOC 8270 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLDPAH <input type="checkbox"/> 8081 PESTICIDES <input type="checkbox"/> 8151 HERBICIDES <input type="checkbox"/> 8082 PCBs <input type="checkbox"/> TCLP - METALS (RCRA) <input type="checkbox"/> TCLP VOC <input type="checkbox"/> TCLP - PEST <input type="checkbox"/> HERB <input type="checkbox"/> Semi-VOC <input type="checkbox"/> TOTAL METALS (RCRA) <input type="checkbox"/> OTHER LIST <input type="checkbox"/> LEAD - TOTAL <input type="checkbox"/> DW 200.8 <input type="checkbox"/> TCLP <input type="checkbox"/> RCI <input type="checkbox"/> TOX <input type="checkbox"/> FLASHPOINT <input type="checkbox"/> TDS <input type="checkbox"/> TSS <input type="checkbox"/> % MOISTURE <input type="checkbox"/> PH <input type="checkbox"/> HEXAVALENT CHROMIUM <input type="checkbox"/> EXPLOSIVES <input type="checkbox"/> PECTHOLATE <input type="checkbox"/> CHLORIDE ANIONS <input type="checkbox"/> ALKALINITY <input type="checkbox"/>
Field Sample ID							FIELD NOTES <u>Lab Filter</u> <u>Direct Bill to Apache</u>
60indm11		5/12/24	1309		1	X	
TRW-1			1315				
TRW-3			1328				
TRW-21			1345				
TOTAL							
RELINQUISHED BY (Signature)	DATE/TIME		RECEIVED BY (Signature)		LABORATORY USE ONLY:		
RELINQUISHED BY (Signature)	DATE/TIME		RECEIVED BY (Signature)		RECEIVING TEMP <u>55.5</u> THERM# <u>TR8</u>		
RELINQUISHED BY (Signature)	DATE/TIME		RECEIVED BY (Signature)		CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input type="checkbox"/> NOT USED		
LABORATORY <u>Xenco</u>	DATE/TIME		RECEIVED BY (Signature)		<input type="checkbox"/> CARRIER BILL # _____ <input type="checkbox"/> HAND DELIVERED		



880-43023 Chain of Custody

## Login Sample Receipt Checklist

Client: Larson &amp; Associates, Inc.

Job Number: 880-43023-1

SDG Number: 19-0112-49

Login Number: 43023

List Number: 1

Creator: Vasquez, Julisa

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
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").	N/A	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-43023-1  
SDG Number: 19-0112-49

Login Number: 43023  
List Number: 2  
Creator: Baker, Jeremiah

List Source: Eurofins Houston  
List Creation: 05/04/24 11:25 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	



Table 2  
Groundwater Sample Analytical Data Summary  
Apache Corporation, EBDU #37  
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
Windmill	<sup>1</sup> 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	<sup>2</sup> 09/23/2019	--	--	--	--	--	--	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	259	688	--
	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	274	730	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	287	930	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	252	745	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	255	781	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	251	800	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	246	751	--
	<sup>4</sup> 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	256	828	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	222	738	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	256	1,190	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	198	508	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	401	1,130	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	276	852	--
	<sup>4</sup> 09/07/2023	<0.00200	<0.00200	<0.00400	<0.00400	350	981	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	409	1,010	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	471	1,080	--
	04/03/2024	--	--	--	--	--	--	2.18
	05/02/2024	--	--	--	--	--	--	0.220
TMW-1	<sup>2</sup> 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	--
	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	--
	<sup>3</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	17.5	358	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.3	391	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	13.2	343	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	26.0	369	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	50.3	404	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	21.4	216	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	41.9	358	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	275	845	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	277	830	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	156	662	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00404	136	551	--
	05/02/2024	--	--	--	--	--	--	0.445
TMW-2	<sup>2</sup> 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	338	1,220	--
	<sup>2</sup> 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	307	1,170	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	314	1,040	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	298	1,050	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	293	1,000	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	267	1,050	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	263	1,030	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	284	1,270	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	282	1,030	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00400	<0.00400	256	1,070	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00400	<0.00400	239	940	--

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	195	985	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	211	1,060	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	248	1,120	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	270	1,050	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	264	1,100	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	249	992	--
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	--
	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	192	967	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	211	949	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	233	944	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	202	955	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	245	1,100	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	175	808	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	233	940	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	229	1,020	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	240	1,010	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	242	1,020	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	234	959	--
	05/02/2024	--	--	--	--	--	--	0.0299
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	<sup>3</sup> 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	1,020	2,040	--
	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	987	2,300	--
	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	834	1,960	--
	<sup>3</sup> 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	745	1,990	--
	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	689	1,990	--
	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	735	2,180	--
	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	1,610	2,080	--
	<sup>4</sup> 03/29/2022	<0.00200	<0.00200	<0.00200	0.00700	547	1,930	--
	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	522	1,930	--
	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	684	2,000	--
	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	486	1,940	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	703	1,850	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	673	1,900	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	625	1,810	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	598	1,750	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	580	1,750	--
TMW-5	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	1,170	4,950	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	2,890	5,200	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	2,790	5,380	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,700	4,590	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,320	4,250	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	2,980	5,360	--

Table 2  
Groundwater Sample Analytical Data Summary  
Apache Corporation, EBDU #37  
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
TMW-6	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	941	3,160	--
	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	2,270	3,200	--
	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	1,550	3,260	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,630	2,820	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,570	3,070	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,500	3,280	--
TMW-7	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	1,770	3,980	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,870	3,880	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,770	3,720	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,740	3,690	--
TMW-8	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	974	2,410	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,130	2,470	--
	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00200	709	1,840	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	655	1,830	--
TMW-9	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	18.0	373	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	41.8	390	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	37.3	404	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	29.3	373	--
TMW-10	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	9.89	525	--
	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	67.0	514	--
	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	114.0	666	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	17.0	405	--
TMW-11	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	350	1,190	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	318	1,090	--
TMW-12	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	463	1,520	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	448	1,390	--
TMW-13	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,730	3,680	--
	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,690	3,480	--
TMW-14	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,500	5,140	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	1,810	2,820	--
TMW-15	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,120	3,870	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	2,160	3,400	--
TMW-16	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	85.5	495	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	43.0	380	--
TMW-17	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	5,850	10,300	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	5,680	8,930	--
TMW-18	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	2,050	6,430	--

**Table 2**  
**Groundwater Sample Analytical Data Summary**  
**Apache Corporation, EBDU #37**  
**Lea County, New Mexico**

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>908</b>	<b>1,650</b>	--
TMW-19	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>927</b>	<b>1,860</b>	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>553</b>	<b>1,070</b>	--
TMW-20	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>287</b>	927	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>385</b>	937	--
TMW-21	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>262</b>	885	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>310</b>	902	0.0471
	05/02/2024	--	--	--	--	--	--	
TMW-22	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>270</b>	939	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>342</b>	918	--
TMW-23	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>895</b>	<b>1,980</b>	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>1,020</b>	<b>2,020</b>	--
TMW-24	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>271</b>	<b>1,050</b>	--
	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>330</b>	<b>1,060</b>	--
DUP-1 (Windmill)	<sup>3</sup> 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<b>276</b>	794	--
DUP-1 (Windmill)	<sup>3</sup> 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	<b>278</b>	908	--
DUP-1 (Windmill)	<sup>3</sup> 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	<b>259</b>	798	--
DUP-1 (Windmill)	<sup>3</sup> 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	<b>256</b>	781	--
DUP-1 (Windmill)	<sup>4</sup> 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	<b>250</b>	830	--
DUP-1 (Windmill)	<sup>4</sup> 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	243	796	--
Dup-1 (TMW-2)	<sup>4</sup> 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	<b>297</b>	<b>1,010</b>	--
Dup-2 (Windmill)	<sup>4</sup> 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	<b>491</b>	787	--
Dup-1 (Windmill)	<sup>4</sup> 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	215	729	--
Dup-1 (Windmill)	<sup>4</sup> 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	<b>283</b>	<b>1,120</b>	--
Dup-1 (TMW-5)	<sup>4</sup> 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	<b>1,410</b>	<b>4,520</b>	--
Dup-1 (Windmill)	<sup>4</sup> 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	<b>413</b>	<b>1,130</b>	--
Dup-1 (Windmill)	<sup>4</sup> 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	<b>273</b>	855	--
Dup-1 (TMW-5)	<sup>4</sup> 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>3,030</b>	<b>5,850</b>	--
Dup-1 (TMW-17)	<sup>4</sup> 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	<b>5,830</b>	<b>10,300</b>	--
Dup-2 (TMW-2)	<sup>4</sup> 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	<b>265</b>	<b>1,010</b>	--
Dup-1 (TMW-3)	<sup>4</sup> 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>328</b>	986	--
Dup-2 (TMW-14)	<sup>4</sup> 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	<b>1,330</b>	<b>2,530</b>	--

**Notes:**

(<sup>1</sup>): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).

(<sup>2</sup>): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>3</sup>): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

(<sup>4</sup>): analysis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).

<: concentration is less than analytical method reporting limit (RL).

\*: NMWQCC Human Health Standard

\*\*: NMWQCC Domestic Water Quality Standard

--: no data available

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

**Bold and highlighted denotes analyte concentration exceeds WQCC domestic water quality standard**

Table 2  
Groundwater Sample Analytical Data Summary  
Apache Corporation, EBDU #37  
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0

Table 2  
Groundwater Sample Analytical Data Summary  
Apache Corporation, EBDU #37  
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	2.0

## 20.6.2.3101 NMAC

Laboratory Analytical Data Summary  
Windmill, EBDU 37, Lea County, New Mexico

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20.6.2.3103 NMAC - Human Health Standards							
A.	Parameter	mg/L	4/3/2024	5/2/2024			
(a)	Antimony	0.006	<0.00400	--			
(b)	Arsenic	0.01	<0.00400	--			
(c)	Barium	2.0	<b>2.18</b>	*0.220			
(d)	Beryllium	0.004	<0.00200	--			
(e)	Cadmium	0.005	<0.00200	--			
(f)	Chromium	0.05	<0.00400	--			
(g)	Cyanide	0.2	<0.00500	--			
(h)	Fluoride	1.6	<1.00	--			
(i)	Lead	0.015	<0.00200	--			
(j)	Mercury (Total)	0.002	<0.000200	--			
(k)	Nitrate	10.0	<b>2.78</b>	--			
(l)	Nitrite	1.0	<0.100	--			
(m)	Selenium	0.05	<0.00200	--			
(n)	Silver	0.05	<0.00200	--			
(o)	Thallium	0.002	<0.00200	--			
(p)	Uranium	0.03	<b>0.00315</b>	--			
(q)	Radioactivity (combined R226 and R228)	5.0	<b>0.945</b>	--			
(r)	Benzene	0.005	<0.00100	--			
(s)	Polychlorinated biphenyls (PCB)	0.0005	<0.000262	--			
(t)	Toluene	1.0	<0.00100	--			
(u)	Carbon Tetrachloride	0.005	<0.00500	--			
(v)	1,2-dichloroethane (EDC)	0.005	<0.00100	--			
(w)	1,1-dichloroethylene	0.007	<0.00100	--			
(x)	Tetrachloroethylene (PCE)	0.005	<0.00100	--			
(y)	Trichloroethylene (TCE)	0.005	<0.00500	--			
(z)	Ethylbenzene	0.70	<0.00100	--			
(aa)	Xylenes (Total)	0.62	<0.0100	--			
(bb)	Methylene Chloride	0.005	<0.00500	--			
(cc)	Chloroform	0.1	<0.00100	--			
(dd)	1,1-Dichloroethane	0.025	<0.00100	--			
(ee)	Ethylene Dibromide (EDB)	0.00005	<0.00500	--			
(ff)	1,1,1-trichloroethane	0.20	<0.00100	--			
(gg)	1,1,2-trichloroethane	0.005	<0.00100	--			
(hh)	1,1,2,2-tetrachloroethane	0.01	<0.00100	--			
(ii)	vinyl chloride	0.002	<0.002	--			
(jj)	PAHs: total naphthalene plus monomethylnaphthalenes	0.03	<0.571	--			
(kk)	benzo-a-pyrene	0.0002	<0.571	--			
(ll)	cis-1,2-dichloroethene	0.07	<0.00100	--			
(mm)	trans-1,2-dichloroethene	0.1	<0.00100	--			
(nn)	1,2-dichloropropane (PDC)	0.005	<0.00500	--			
(oo)	Styrene	0.1	<0.00100	--			
(pp)	1,2-dichlorobenzene	0.60	<0.00100	--			
(qq)	1,4-dichlorobenzene	0.075	<0.00100	--			
(rr)	1,2,4-trichlorobenzene	0.07	<0.00500	--			
(ss)	pentachlorophenol	0.001	<1.14	--			
(tt)	atrazine	0.003	<0.500	--			

## 20.6.2.3101 NMAC

## Laboratory Analytical Data Summary

Windmill, EBDU 37, Lea County, New Mexico

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## 20.6.2.3103 NMAC - Standards for Domestic Water Supply

B.	Parameter	mg/L	4/3/2024				
(1)	Chloride	250.0	<b>440</b>	--			
(2)	Copper	1.0	<b>0.00509</b>	--			
(3)	Iron	1.0	<0.100	--			
(4)	Manganese	0.2	<0.00200	--			
(5)	Phenols	0.005	<0.0100	--			
(6)	Sulfate	600.0	<b>56.5</b>	--			
(7)	Total Dissolved Solids (TDS)	1,000.0	<b>1,000</b>	--			
(8)	Zinc	10.0	<b>0.00465</b>	--			
(9)	pH	6 - 9	7.3	--			
(10)	Methy tertiary-butyl ether (MTBE)	0.1	<0.00500	--			

## 20.6.2.3103 NMAC - Standards for Irrigation Use

B.	Parameter	mg/L	4/3/2024	5/2/2024			
(1)	Aluminum	5.0	<0.0200	--			
(2)	Boron	0.75	<b>0.154</b>	--			
(3)	Cobalt	0.05	<0.00200	--			
(4)	Molybdenum	1.0	<0.00200	--			
(5)	Nickel	0.2	<0.00200	--			

Notes: Analysis performed by Eurofins Xenco Laboratories, Midland, Texas, by EPA SW-846 Methods.

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

&lt; Indicates analyte concentration is less than reporting limit (RL)

**Bold indicates analyte concentration exceeds the reporting limit (RL) but below the regulatory limit****Bold and highlighted indicates analyte concentration exceeds RL and regulatory limit**



**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 342416

**CONDITIONS**

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID:
	873
	Action Number: 342416
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
michael.buchanan	As a result of significant differences in groundwater flow direction at the source area shown between Figure 5a and Figure 5b from December 2023 to March 2024 in the SOW, a denser network of monitoring wells is necessary to better characterize the mass source in the area. Apache Corporation must develop the following within ninety (90) days of this approval date for additional well borings and the subsequent conditions of approval below. The coordinates for each additional monitoring well required for installation by OCD are included in conditions 1. (a through n). 1a. TMW-30 shall be installed approximately 430 feet east of the TMW-28 well proposal, and 50 feet south. Better defining background concentrations. (32.482591, -103.120003)	7/24/2024
michael.buchanan	1b. TMW-31 shall be installed approximately 350 feet northwest of TMW-22. Reduces the distance between TMW-12 and TMW-22 for more precise characterization. (32.481806, -103.119008) 1c. TMW-32 shall be installed approximately 275 feet east of TMW-12. Reduces distance between adjacent wells for more precise characterization. (32.481354, -103.119876) 1d. TMW-33 shall be installed approximately 415 feet southwest of TMW-22. Reduces the distance between TMW-21 and TMW-13 for more precise characterization. (32.480643, -103.118728) 1e. TMW-34 shall be installed approximately 350 feet west of TMW-14. Achieves more characterization near TMW-17 which conveys a high chloride level. (32.479492, -103.120080) 1f. TMW-35 shall be installed approximately 190 feet northeast of TMW-15 Addresses more necessary characterization near TMW-17 (32.479341, -103.119302)	7/24/2024
michael.buchanan	1g. TMW-36 shall be installed approximately 175 feet southwest of TMW-17. Addresses need for more characterization near TMW-17 (32.478749, -103.120871) 1h. TMW-37 shall be installed approximately 275 feet southeast of TMW-17. Addresses need for more characterization near TMW-17. (32.478577, -103.119850) 1i. TMW-38 shall be installed approximately 300 feet northwest of proposed TMW-26. More characterization and assessment needed in the southeast region of the release area. (32.477683, -103.119429) 1j. TMW-39 shall be installed approximately 200 feet southeast of TMW-18. The release area in southeast area needs tighter monitoring network of characterization and assessment for chloride. (32.477447, -103.120144) 1k. TMW-40 shall be installed approximately 200 feet southeast of TMW-16. Addresses lack of characterization and assessment between MW-19 and MW-18 (32.477640, -103.121407)	7/24/2024
michael.buchanan	1l. TMW-41 shall be installed approximately 275 feet east of TMW-24. Addresses lack of characterization and assessment between TMW-24 and TMW-23 (32.476499, -103.121560) 1m. TMW-42 shall be installed approximately 220 feet east of TMW-23. Addresses lack of characterization and assessment between TMW-25 and TMW-26 (32.476456, -103.119774) 1n. TMW-42 shall be installed approximately 75 feet NE of TMW-13. Addresses lack of characterization between TMW-13 and TMW-22. (32.481185, -103.1189847) 2. A current and up-to-date site map showing proposed monitoring wells in the SOW, and the additional thirteen (14) monitoring wells prescribed by OCD for further characterization and assessment of chlorides and BTEX. 3. Any quarterly monitoring collected to the present (summary table and lab analyses are sufficient).	7/24/2024
michael.buchanan	4. The windmill well must be sampled and analyzed for barium in the next round of groundwater monitoring. 5. Both TMW #5 and TMW #17 must be sampled for all human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC as these two wells had the highest concentrations of contamination. 6. All proposed monitoring wells in the Scope of Work for Additional Investigation and the additional required monitoring wells by OCD must have soil sample analyses for TPH, chloride, and BTEX by EPA Methods 8260, EPA Method 300 and EPA Method 8015. Five (5) foot interval composite samples are acceptable. 7. Drilling for all wells is required to commence within ninety (90) days from this date of approval.	7/24/2024
michael.buchanan	8. 19.15.5.11 ENFORCEABILITY OF PERMITS AND ADMINISTRATIVE ORDERS: A person who conducts an activity pursuant to a permit, administrative order or other written authorization or approval from the division shall comply with every term, condition and provision of the permit, administrative order, authorization or approval. [19.15.5.11 NMAC - Rp, 19.15.1.41 NMAC, 12/1/2008]	7/24/2024

OCD Ex. 6-0794



5847 50<sup>th</sup> Street  
Lubbock, TX 79424  
P (806) 300-0140  
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[Terracon.com](http://Terracon.com)

September 23, 2024

New Mexico Oil Conservation Division (NMOCD)  
EMNRD/OCD  
8801 Horizon Blvd NE, Suite 260  
Albuquerque, NM 87113

Attn: Mr. Michael Buchanan  
P 505-490-0798  
E [Michael.buchanan@emnrd.nm.gov](mailto:Michael.buchanan@emnrd.nm.gov)

RE: Additional Groundwater Delineation Work Plan  
Apache Corporation  
EBDU #37  
Case No. (1R-5636), Incident ID NDHR192214227  
Lea County, New Mexico  
Terracon Project No. KH247030

Dear Mr. Buchanan:

Terracon Consultants, Inc. (Terracon) and Apache Corporation (Apache) have prepared this work plan describing additional site investigation activities planned for the above-reference site. The scope of work is intended to provide additional information to delineate the extent of groundwater impacts and provide additional information on the hydraulic properties of the groundwater system.

#### Additional Monitoring Wells

Seven additional monitoring wells will be installed as described below:

- TMW-25 (32.475248°, -103.121412°) will provide downgradient delineation
- TMW-26 (32.477315°, -103.119178°) will provide downgradient and lateral delineation on the southeast edge of the plume
- TMW-27 (32.479989°, -103.120675°) will serve to confirm the chloride plume is continuous between the source (near TTMW-7) and TTMW-17, which has shown elevated chlorides in recent sampling. TMW-27 will be completed as a six-inch diameter well suitable for use as a recovery well if needed.
- TMW-28 (32.482492°, -103.121341°) and TMW-29 (32.481836°, -103.119511°) will provide upgradient delineation. These wells will be located approximately 750 feet (TMW-28) and 550 feet (TMW-29) upgradient of the source. The average of these two wells is intended to serve as representative background conditions.
- TMW-30 (32.477428°, -103.120114°) will be located approximately 200 feet southeast of TMW-18 to provide information on stratigraphy and groundwater chemistry in the space between current TMW-18, TMW-23, and proposed TMW-26. This is the location identified as TMW-39 from the OCD approval letter.
- TMW-31 (32.476425°, -103.119734°) will provide downgradient and lateral (southeast) delineation of the plume. This is the location identified as TMW-42 from the OCD approval letter.
- At each of the monitoring well locations soil samples will be collected at five-foot intervals and will be submitted to a laboratory for analyses for TPH, chloride, and BTEX by EPA Methods 8260, EPA Method 300 and EPA Method 8015.

### Soil Borings

Four soil borings will be advanced to evaluate potential source areas for chlorides. Precise locations will be determined in consultation and agreement with NMOCD. Soil samples from the borings will be analyzed in the field using titration methods to aid in directing the field work. Borings will be advanced to a depth of 30' and sampling will cease if no samples are found above RALs.

### Groundwater Sampling

- Two groundwater sampling events for all wells and the windmill will be done in September and December. The September event will sample the existing monitoring wells and the windmill well. The December sampling event will include the newly installed seven wells as well as the existing monitoring wells and the windmill well.
- Samples from all wells will be analyzed for Chlorides and TDS
- Samples from the newly installed seven wells will also be analyzed for BTEX/TPH. If these parameters are below sample detection limits as they have been in all wells sampled to date, then future sampling events at these locations will be for chloride and TDS.
- Samples from the Windmill Well, TMW-5 and TMW-17 will be sampled for the human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC.
- Samples from the Windmill Well, TMW-1, TMW-3, and TMW-21 will also be sampled for Barium
- Prior to the first sampling event, TMW-17 will be purged dry, to the maximum extent possible, to ensure water being sampled is formation water and not related to water introduced when the well was installed.

### Aquifer Characterization

A pump test will be performed at TMW-27 to gauge the characteristics of the aquifer. The well will be pumped for 24-48 hours. Drawdown will be measured in the pumping well and select monitoring wells using pressure transducers. Evaluation of the data will provide information needed to evaluate the effectiveness and requirements for future remedial activities.

### Field Methods

The monitoring wells will be installed using air rotary drilling techniques. Precise location, depth and screened intervals may be adjusted in the field based on site conditions and observed groundwater levels while drilling.

Monitoring Well	Anticipated Depth to Groundwater (feet bgs)	Approximate well Depth* (feet bgs)	Approximate Screened Interval (feet bgs)
TMW-25	60	80	60 - 80
TMW-26	60	80	60 – 80
TMW-27 (6" – Well)	55	95	75 – 95
TMW-28	55	75	55 – 75
TMW-29	60	80	60 – 80
TMW-30	60	80	60 – 80
TMW-31	60	80	60 – 80

All monitoring wells with the exception of TMW-27 (RW-1) will be constructed with 20 feet of 2-inch diameter, 0.010-inch machine-slotted polyvinyl chloride (PVC) well screen with a threaded bottom cap and 2-inch diameter, threaded, flush-joint PVC riser pipe to the surface. The annular space will be backfilled with pre-sieved 20/40-grade silica sand around the well screen from the bottom of the boring to approximately 2 feet above the top of the well screen. A minimum of 2 feet of hydrated bentonite pellets will be placed above the sand pack and cement/bentonite slurry to the surface. The wells will be completed with a 4-inch diameter above grade protective casing set in a concrete pad. The locations of the proposed monitoring wells are presented in the attached Exhibit 1. The new monitoring wells will be developed by surging and removing groundwater until fluids appear relatively free of fine-grained sediment.

TMW-27 will be completed using 6" diameter 0.035 continuous slot screen with 8/16 Brady Sand filter pack. We anticipate installing a 20' length screen as shown in the table above but will evaluate more carefully as we design the aquifer test.

Groundwater samples will be collected using HydraSleeve passive samplers. The samplers will be introduced one day, then samples will be retrieved the following day. The HydraSleeve will be set up to sample the lower 10 feet of each well.

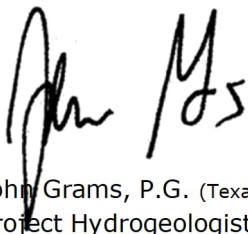
#### Investigation-Derived Waste (IDW)

The proposed monitoring wells will be located in areas of the site removed from the spill; therefore, soils are not anticipated to be impacted. The soil cuttings generated during installation will be dispersed at the location of each respective proposed monitoring well. Groundwater collected during well development and from the purging and sampling process will be collected in a poly tank and left on-site until lab results are analyzed to determine a suitable alternative for disposition.

#### Schedule

The well installation and sampling event is scheduled to begin on the week of October 15, 2024 and anticipated to be completed October 25, 2024. However, initiation of the work is contingent on obtaining a drilling permit from the New Mexico Office of State Engineer. Should you have any questions regarding this work plan, please contact me at (612) 865-4899 or John.Grams@terracon.com.

Sincerely,  
Terracon



John Grams, P.G. (Texas)  
Project Hydrogeologist



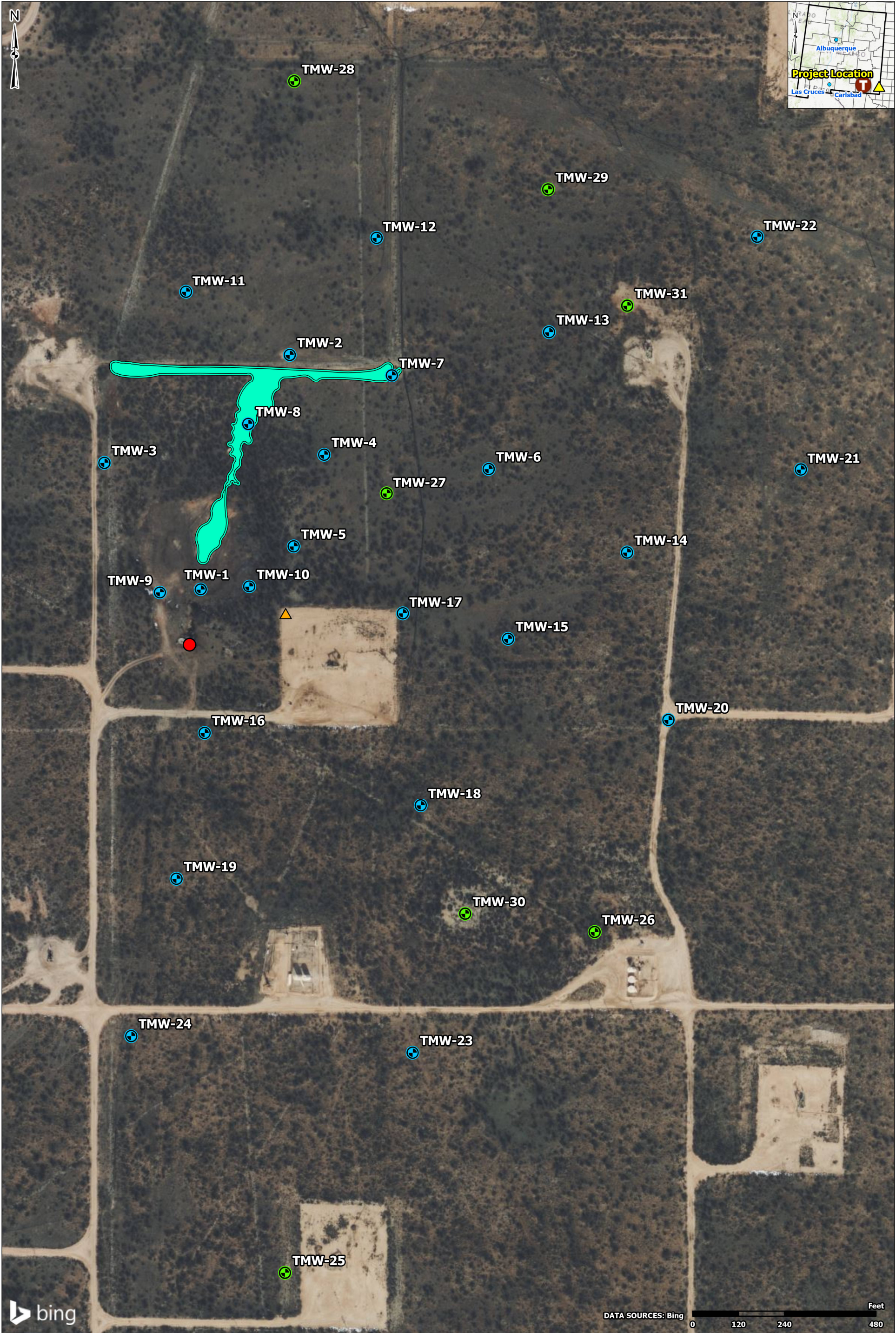
Joseph Guesnier  
Office Manager, Carlsbad, NM

cc: Barrett Bole, Apache Corp.

Attachment – Exhibit 1, Site Map


**EXHIBIT 1**  
**SITE MAP**





- Inferred Release
- Existing Monitoring Well
- Proposed Monitoring Well
- Static Control GPS
- Windmill

Project No.:	KH247030
Date:	Sep 09 2024
Drawn By:	JWL
Reviewed By:	JRG



4526 W Pierce St  
Carlsbad, NM

PH. 806-300-0140    [terracon.com](http://terracon.com)  
OCD Ex. 7-0799

Well Location Map
EBDU 37 32.4807053, -103.123085 Apache Corporation Eunice, Lea County, New Mexico

Exhibit
1

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