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2024

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2023 Fourth (4th) Quarter Groundwater Monitoring Report
Northeast Drinkard Unit (NEDU) #829, #830, #922, #928, and #929
Lea County, New Mexico

Prepared for:

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1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this report on behalf of the Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (NMOCD) District I in Hobbs and Santa Fe, New Mexico. This report presents 2023 fourth (4th) quarter (October – December) groundwater monitoring results for the Northeast Drinkard Unit (NEDU) #829, 830, 922, 928, and 929 (Sites). The Sites are located in Section 22, Township 21 South, Range 37 East, in Lea County, New Mexico. The approximate geodetic position is North 32.46294° and West -103.15153°.

The following activities occurred on December 28, 2023:

- Gauged depth to groundwater and collected groundwater samples from monitoring wells MW-1 through MW-4.
- Analyzed groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), chloride, and total dissolved solids (TDS).

The following observations are documented in this report for September 8, 2023:

- Depth to groundwater was 54.41 feet below ground surface (bgs) in MW-1, 52.31 feet bgs (MW-2), 51.86 feet bgs (MW-3) and 40.50 feet bgs (MW-4).
- Groundwater elevation ranged between 3,371.44 feet above mean sea level (MSL) at MW-4 (upgradient) and 3,354.86 feet above MSL at MW-3 (downgradient).
- The groundwater flow was from northwest to southeast at a gradient of about 0.013 feet per foot (ft/ft).
- BTEX compounds were below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (NMWQCC) human health standards in groundwater samples from monitoring wells MW-1 through MW-4.
- Chloride was 1,040 milligrams per liter (mg/L) in the groundwater sample collected from MW-1 and was above the NMWQCC domestic water quality standard of 250 mg/L.
- Chloride concentrations in samples from MW-2 (248 mg/L), MW-3 (124 mg/L) and MW-4 (160 mg/L) were below the NMWQCC standard.
- TDS concentrations in groundwater samples from MW-1 (3,210 mg/L) and MW-2 (1,130 mg/L) were above the NMWQCC domestic water quality standard of 1,000 mg/L.
- TDS concentrations in groundwater samples from MW-3 (700 mg/L) and MW-4 (810 mg/L) were below the NMWQCC standard.

Apache proposes the following:

- Apache will continue groundwater monitoring on a quarterly (4 times per year) schedule.
- Gauge all monitoring wells for depth to groundwater and collect groundwater samples from monitoring wells with sufficient groundwater during each quarterly event.
- Analyze samples for BTEX, chloride and TDS.
- Report the laboratory results to NMOCD in quarterly reports, unless significant changes in analyte concentrations are detected, at which time Apache will immediately report the results to NMOCD.

- Apache will provide notice to the NMOCD in Hobbs and Santa Fe, New Mexico, at least 7 working days prior to each monitoring event.

2.0 INTRODUCTON

Larson & Associates, Inc. (LAI) has prepared this report on behalf of Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (NMOCD) District I in Hobbs and Santa Fe, New Mexico. This report presents 2023 quarterly groundwater monitoring results for the fourth (4th) quarter on December 28, 2023. During the quarterly event, groundwater samples were collected from four (4) monitor wells (MW-1 through MW-4) at the Northeast Drinkard Unit (NEDU) #829, 830, 922, 928, and 929 (Sites) located in Lea County, New Mexico. The legal description is Section 22, Township 21 South, Range 37 East. The geodetic coordinates are as follows:

Site	North (°)	West (°)
NEDU #829	32.462947	-103.151539
NEDU #830	32.463967	-103.155761
NEDU #922	32.457803	-103.151181
NEDU #928	32.458019	-103.155831
NEDU #929	32.458022	-103.151450

The NMOCD was notified via web portal on December 13, 2023, prior to the groundwater monitoring event. Figure 1 presents a topographic map. Figure 2 presents an aerial map. Figure 3 presents a site map.

2.1 Background

On April 6, 2001, the landowner reported to the NMOCD that an Apache contractor was closing drilling pits at the Sites by disposing pit fluid in open trenches adjacent to the drilling pits. Apache was notified and submitted the initial C-141 on April 23, 2001. NMOCD assigned the trenches remediation permit 1RP-313.

On April 23, 2001, Apache submitted a work plan for remediating the trenches. NMOCD approved the work plan on May 8, 2001. The work plan stated that the trenches at wells #829, #830 and #929 would be excavated to approximately 19 feet bgs and to approximately 13 feet bgs at #928. There is no evidence that the trench was excavated at #922. An Apache contractor collected bottom and composite samples from the excavations and found chloride above the remediation closure limits in all excavations. Total petroleum hydrocarbons (TPH) were reported above the NMOCD closure limits in the excavation at #928. No documentation is available in NMOCD files to confirm the remediation.

On October 31, 2019, Apache submitted an administrative summary and path forward for remediating and closing the trenches. The plan requested approval from the NMOCD for a variance to excavate soil to a depth of approximately four (4) feet bgs at each trench and install a 20-mil polyethylene liner in the bottom of the excavations. Additionally, Apache committed to installing monitoring wells hydraulically down gradient (east - southeast) approximately 50 feet from the trench. On May 19, 2021, the NMOCD

approved the administrative summary and path forward for remediation but stated that "preapproval for monitoring well locations on map before installation" was required. On July 14, 2021, NMOCD approved the monitor well locations.

3.0 GROUNDWATER INVESTIGATION

3.1 Monitoring Well Installations

On July 19 and 20, 2021, Scarborough Drilling, Inc. (SDI), under the supervision of LAI, installed monitoring wells MW-1, MW-2, MW-3, and MW-4 utilizing an air rotary drilling rig at locations specified in the New Mexico Office of the State Engineer (OSE) permits. The wells were completed in 5-inch diameter borings advanced between about 65 and 76 feet below ground surface (bgs). Monitoring wells MW-1, MW-2, MW-3, and MW-4 were completed at depths of 74.08, 74.86, 65.35 and 76.01 feet bgs, respectively. The monitoring wells are completed with a 2-inch schedule 40 threaded PVC casing and 20 feet of 0.010-inch factory slotted screen installed above and below the groundwater level observed during drilling. Graded silica sand is positioned around the well screens to a depth about 2 feet above the screen. Sodium bentonite chips extend around the PVC riser and above the sand to about 1-foot bgs. The wells are secured with locking steel sleeves anchored in concrete.

On July 27 through 30, 2021, the wells were developed by pumping with an electric submersible pump to remove sediment disturbed drilling and well installation. Approximately 40 gallons of water were removed from each well and disposed in 55-gallon drums.

West Company, a State of New Mexico licensed Professional Land Surveyor (PLS Number 23263) surveyed the monitoring wells for location and elevation including top of casing and natural ground surface. Figure 3 presents Site drawing showing the monitoring well locations. Table 1 presents the monitoring well completion and gauging summary. Appendix A presents the boring logs and well completion records.

4.0 GROUNDWATER MONITORING

4.1 Depth to Groundwater and Groundwater Potentiometric Surface Elevation

On December 28, 2023, LAI personnel gauged monitoring wells MW-1 through MW-4 for depth to groundwater. Groundwater was gauged in monitoring well MW-1 (54.51 feet bgs), MW-2 (52.31 feet bgs), MW-3 (51.86 feet bgs), and MW-4 (40.50 feet bgs). The groundwater potentiometric surface elevation was recorded 3,371.44 feet above mean sea level (MSL) in well MW-4 (upgradient) and at 3,354.86 feet above MSL at well MW-3 (downgradient). The groundwater flow direction was from northwest to southeast at a gradient of about 0.013 ft/ft. Figure 4 presents the groundwater potentiometric surface map for December 28, 2023.

4.2 Groundwater Samples and Analysis

On December 28, 2023, LAI personnel collected groundwater samples from monitoring wells MW-1 through MW-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.

Samples were collected from the discharge of 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 and delivered under chain of custody control and preservation to Euro-Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, in Midland, Texas. A duplicate sample was collected from MW-2 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.

4.2.1 Organic Analysis

BTEX concentrations were below the laboratory analytical reporting limit (RL) and NMWQCC human health standards in all groundwater samples. The results are consistent with previous groundwater monitoring events.

4.2.2 Inorganic Analysis

Chloride concentrations were reported below the NMWQCC domestic water quality standard of 250 mg/L in monitoring wells MW-2 (248 mg/L), MW-3 (124 mg/L), and MW-4 (160 mg/L). The chloride concentrations in the groundwater sample collected from monitoring well MW-1 (1,040 mg/L) was above the NMWQCC domestic water quality standard. The chloride concentration in the QA/QC sample (Dup-1) collected from monitoring well MW-2 was 248 mg/L and within 1.2 percent of the original chloride value for MW-2 (251 mg/L). No data exceptions were noted in the laboratory report case narratives. Figure 5 presents the chloride concentration map for December 28, 2023.

TDS concentrations were reported above the NMWQCC domestic water quality standard of 1,000 mg/L in groundwater samples collected from monitoring wells MW-1 (3,210 mg/L) and MW-2 (1,130 mg/L). TDS concentrations were below the NMWQCC domestic water quality standard in groundwater samples from MW-3 (700 mg/L) and MW-4 (792 mg/L). The TDS concentration in the QA/QC sample (Dup-1) collected from monitoring well MW-2 was reported 1,100 mg/L and within 2.7 percent of the original chloride value for MW-2 (1,130 mg/L). No data exceptions were noted in the laboratory case narratives. Figure 6 presents the TDS concentration map for December 28, 2023.

5.0 CONCLUSIONS

The following observations are documented in this report:

- Groundwater elevation ranged between 3,371.44 feet above MSL at well MW-4 (upgradient) and 3,354.86 (MSL) at well MW-3 (downgradient).
- The groundwater flow direction was from northwest to southeast at a gradient of about 0.013 feet per foot (ft/ft).
- BTEX concentrations were below the analytical method RL and NMWQCC human health standards in all groundwater samples collected from monitoring wells MW-1 through MW-4.
- Chloride concentrations were above the NMWQCC domestic water quality standard (250 mg/L) in samples from MW-1 (1,040 mg/L).
- Chloride concentrations were below the MNWQCC standard in samples from MW-2 (248 mg/L), MW-3 (124 mg/L) and MW-4 (160 mg/L).
- TDS concentrations were above the NMWQCC domestic water quality standard (1,000 mg/L) in the groundwater samples MW-1 (3,210 mg/L) and MW-2 (1,130 mg/L) and below the MNWQCC standard in samples from MW-3 (700 mg/L) and MW-4 (792 mg/L).

6.0 RECOMMENDATIONS

Apache proposes the following:

- Continue groundwater monitoring on a quarterly (4 times per year).
- Gauge each well (MW-1 through MW-4) for depth to groundwater and collect groundwater samples from monitoring wells with sufficient groundwater during each quarterly event.
- Report the laboratory results to NMOCD in quarterly reports, unless significant changes in analyte concentrations are detected, at which time Apache will immediately report the results to NMOCD.
- Apache will provide notice to the NMOCD in Hobbs and Santa Fe, New Mexico, at least 4 working days prior to each monitoring event.

Tables

Table 1
1RP-313
Monitoring Well Completion and Gauging Summary
Apache Corportaion, NEDU Drill Pits
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Water Column Height (Feet)	Groundwater Elevation (Feet AMSL)
MW-1	07/19/2021	74.08	71.08	2	3417.34	70.85-50.85	3.00	3,417.34	07/29/2021	57.40	54.40	16.68	3,359.94
									11/08/2021	57.40	54.40	16.68	3,359.94
									03/02/2022	57.36	54.36	16.72	3,359.98
									05/24/2022	57.32	54.32	16.76	3,360.02
									08/17/2022	57.40	54.40	16.68	3,359.94
									12/14/2022	57.39	54.39	16.69	3,359.95
									03/10/2023	57.41	54.41	16.67	3,359.93
									06/05/2023	57.41	54.41	16.67	3,359.93
									09/08/2023	57.48	54.48	16.60	3,359.86
									12/28/2023	57.51	54.51	16.57	3,359.83
MW-2	07/19/2021	74.86	71.86	2	3408.43	71.68-51.68	3.00	3,411.66	07/29/2021	54.81	51.81	20.05	3,356.85
									11/08/2021	54.85	51.85	20.01	3,356.81
									03/02/2022	54.91	51.91	19.95	3,356.75
									05/24/2022	54.91	51.91	19.95	3,356.75
									08/17/2022	55.04	52.04	19.82	3,356.62
									12/14/2022	55.08	52.08	19.78	3,356.58
									03/10/2023	55.18	52.18	19.68	3,356.48
									06/05/2023	55.25	52.18	19.61	3,356.41
									09/08/2023	55.27	52.27	19.59	3,356.39
									12/28/2023	55.31	52.31	19.55	3,356.35

Table 1
1RP-313
Monitoring Well Completion and Gauging Summary
Apache Corportaion, NEDU Drill Pits
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Water Column Height (Feet)	Groundwater Elevation (Feet AMSL)
MW-3	07/20/2021	65.35	62.75	2	3406.01	65.15-45.15	2.60	3,409.32	07/29/2021	53.55	50.95	11.80	3,355.77
									11/08/2021	53.67	51.07	9.68	3,355.65
									03/02/2022	53.83	51.23	11.52	3,355.49
									05/24/2022	53.88	51.28	11.47	3,355.44
									08/17/2022	54.08	51.48	11.27	3,355.24
									12/14/2022	54.21	51.61	11.14	3,355.11
									03/10/2023	54.30	51.70	11.05	3,355.02
									06/05/2023	54.37	51.77	10.98	3,354.95
									09/08/2023	54.39	51.79	10.96	3,354.93
									12/28/2023	54.46	51.86	10.89	3,354.86
MW-4	07/20/2021	76.01	72.93	2	3412.51	75.81-55.81	3.08	3,415.02	07/30/2021	44.38	41.30	31.63	3,370.64
									11/08/2021	43.44	40.36	32.57	3,371.58
									03/02/2022	43.44	40.36	32.57	3,371.58
									05/24/2022	43.50	40.42	32.51	3,371.52
									08/17/2022	42.63	39.55	33.38	3,372.39
									12/14/2022	43.64	40.56	32.37	3,371.38
									03/10/2023	43.62	40.54	32.39	3,371.40
									06/05/2023	43.71	40.63	32.30	3,371.31
									09/08/2023	43.76	40.68	32.25	3,371.26
									12/28/2023	43.58	40.50	32.43	3,371.44

Table 1
1RP-313
Monitoring Well Completion and Gauging Summary
Apache Corportaion, NEDU Drill Pits
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)

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: denotes elevation in feet above mean sea level

Table 2

Groundwater Sample Analytical Data Summary

Apache Corporation, NEDU #830, 922, 928, and 929

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)
NMWQCC Standard:		**0.005*	** 1*	**0.7*	**0.62*	***250*	***1,000*
MW-1 (NEDU #830)	07/29/2021	<0.00200	<0.00200	<0.00200	<0.00400	446	2,510
	11/08/2021	<0.00200	<0.00200	<0.00200	<0.00400	1,270	2,490
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	1,250	2,500
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	912	2,500
	08/17/2022	<0.00200	<0.00200	<0.00200	<0.00400	1,070	2,670
	12/14/2022	<0.00200	<0.00200	<0.00200	<0.00400	893	2,520
	03/10/2023	<0.00100	<0.00100	<0.00100	<0.00100	1,210	2,600
	06/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,140	2,950
	09/08/2023	<0.00200	<0.00200	<0.00200	<0.00400	1,010	3,000
	12/28/2023	<0.00100	<0.00100	<0.00100	<0.0100	1,040	3,210
MW-2 (NEDU #922)	07/29/2021	0.0391	<0.00200	<0.00219	<0.00400	268	1,170
	11/08/2021	<0.00200	<0.00200	<0.00200	<0.00400	279	1,100
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	253	1,110
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	200	1,100
	08/17/2022	<0.00200	<0.00200	<0.00200	<0.00400	239	1,080
	12/14/2022	<0.00200	<0.00200	<0.00200	<0.00400	167	983
	03/10/2023	<0.00100	<0.00100	<0.00100	<0.00100	282	1,030
	06/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	303	1,160
	09/08/2023	<0.00200	<0.00200	<0.00200	<0.00400	232	1,110
	12/28/2023	<0.00100	<0.00100	<0.00100	<0.0100	248	1,130
MW-3 (NEDU #929)	07/29/2021	0.00407	<0.00200	<0.00200	<0.00400	128	663
	11/08/2021	<0.00200	<0.00200	<0.00200	<0.00400	122	644
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	114	664
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	114	647
	08/17/2022	<0.00200	<0.00200	<0.00200	<0.00400	111	645
	12/14/2022	<0.00200	<0.00200	<0.00200	<0.00400	97.9	381
	03/10/2023	<0.00100	<0.00100	<0.00100	<0.00100	121	635
	06/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	151	778
	09/08/2023	<0.00200	<0.00200	<0.00200	<0.00400	117	708
	12/28/2023	<0.00100	<0.00100	<0.00100	<0.0100	124	700
MW-4 (NEDU #928)	07/30/2021	<0.00200	<0.00200	<0.00200	<0.00400	559	1,030
	11/08/2021	<0.00200	<0.00200	<0.00200	<0.00400	203	832
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	182	836
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	171	827
	08/17/2022	<0.00200	<0.00200	<0.00200	<0.00400	165	797
	12/14/2022	<0.00200	<0.00200	<0.00200	<0.00400	134	327
	03/10/2023	<0.00100	<0.00100	<0.00100	<0.00100	176	810

Table 2

Groundwater Sample Analytical Data Summary

Apache Corporation, NEDU #830, 922, 928, and 929

Lea County, New Mexico

	06/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	194	864
	09/08/2023	<0.00200	<0.00200	<0.00200	<0.00400	160	825
	12/28/2023	<0.00100	<0.00100	<0.00100	<0.0100	160	792
Dup-1 (MW-2)	07/29/2021	<0.00200	<0.00200	<0.00200	<0.00400	244	1,160
Dup-2 (MW-4)	07/30/2021	<0.00200	<0.00200	<0.00200	<0.00400	235	1,030
Dup-1 (MW-2)	11/08/2021	<0.00200	<0.00200	<0.00200	<0.00400	270	1,100
Dup-1 (MW-2)	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	268	1,090
Dup-1 (MW-2)	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	189	1,100
Dup-1 (MW-2)	08/17/2022	<0.00200	<0.00200	<0.00200	<0.00400	246	1,090
Dup-1 (MW-2)	12/14/2022	<0.00200	<0.00200	<0.00200	<0.00400	171	1,100
Dup-1 (MW-2)	03/10/2023	<0.00100	<0.00100	<0.00100	<0.00100	217	1,000
Dup-1 (MW-2)	06/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	242	1,270
Dup-1 (MW-2)	09/08/2023	<0.00200	<0.00200	<0.00200	<0.00400	229	1,180
Dup-1 (MW-2)	12/28/2023	<0.00100	<0.00100	<0.00100	<0.0100	251	1,100

Notes:

analysis performed by Xenco-Eurofins Laboratories, Midland, Texas by EPA SW-846 Method 8021B (BTEX), Method 300 (chloride), Method 2540C

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

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

* - NMWQCC human health standard

** - NMWQCC domestic water quality standard

bgs - below ground surface

Figures

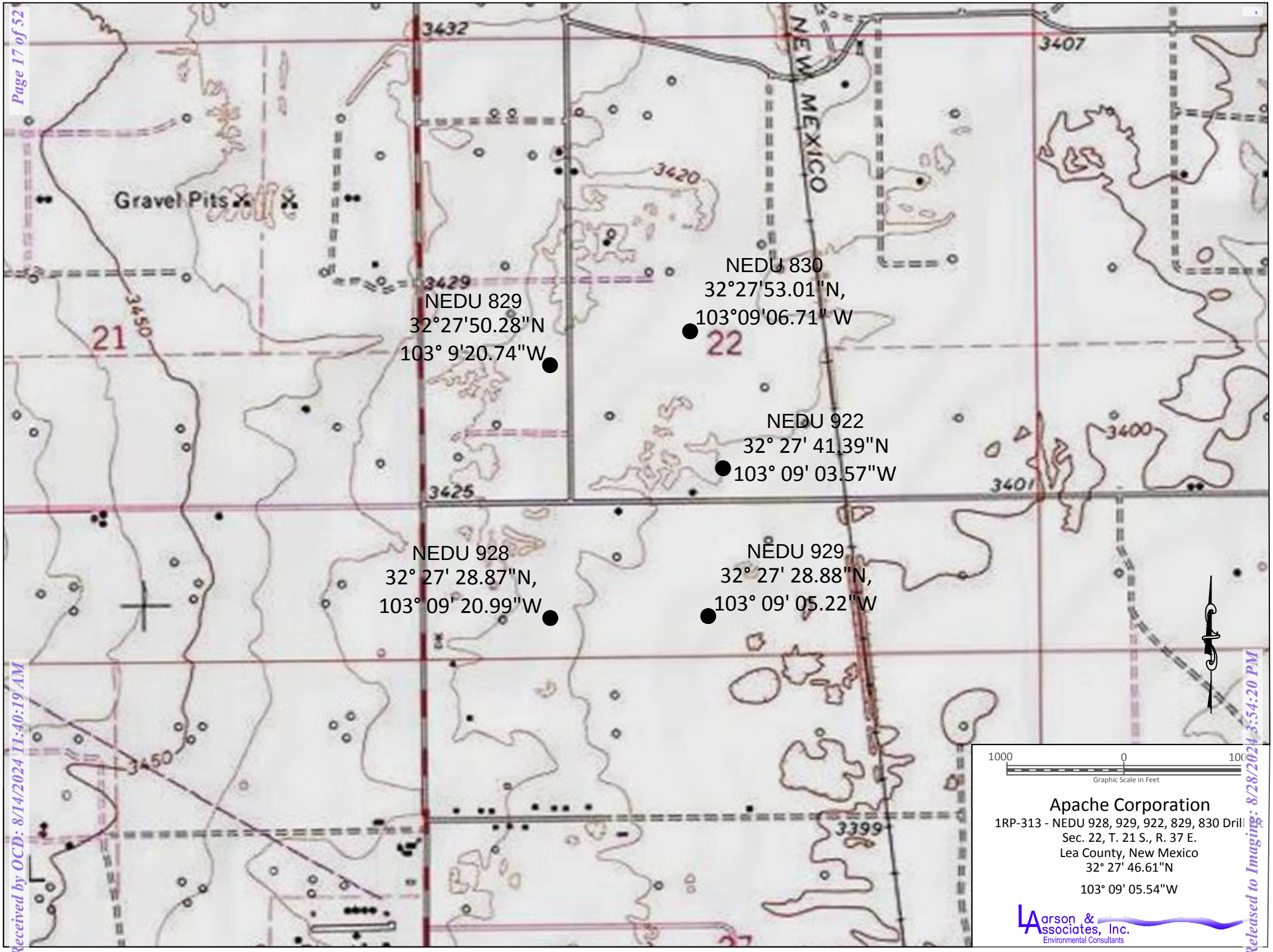


Figure 1 - Topographic Map

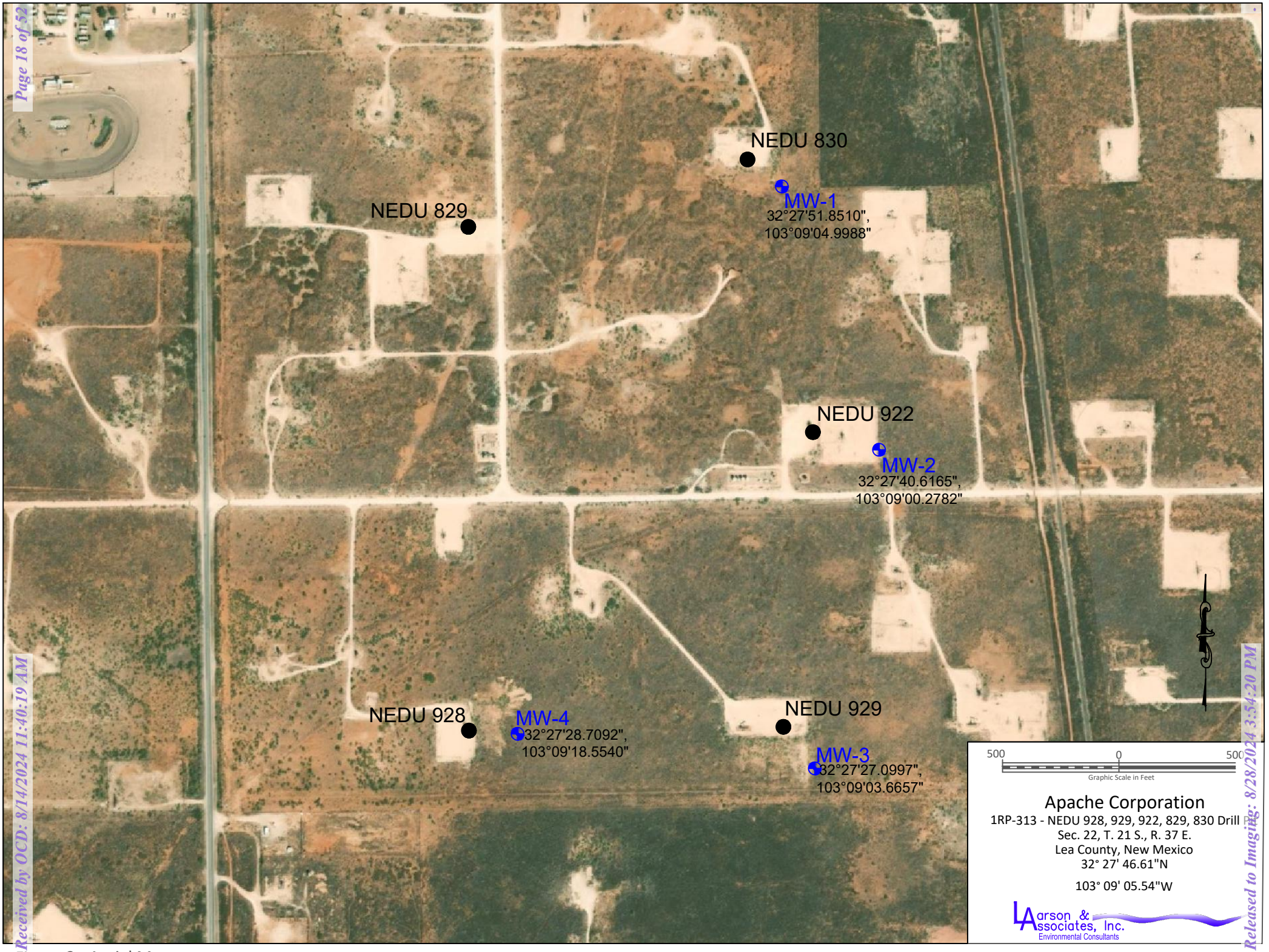


Figure 2 - Aerial Map

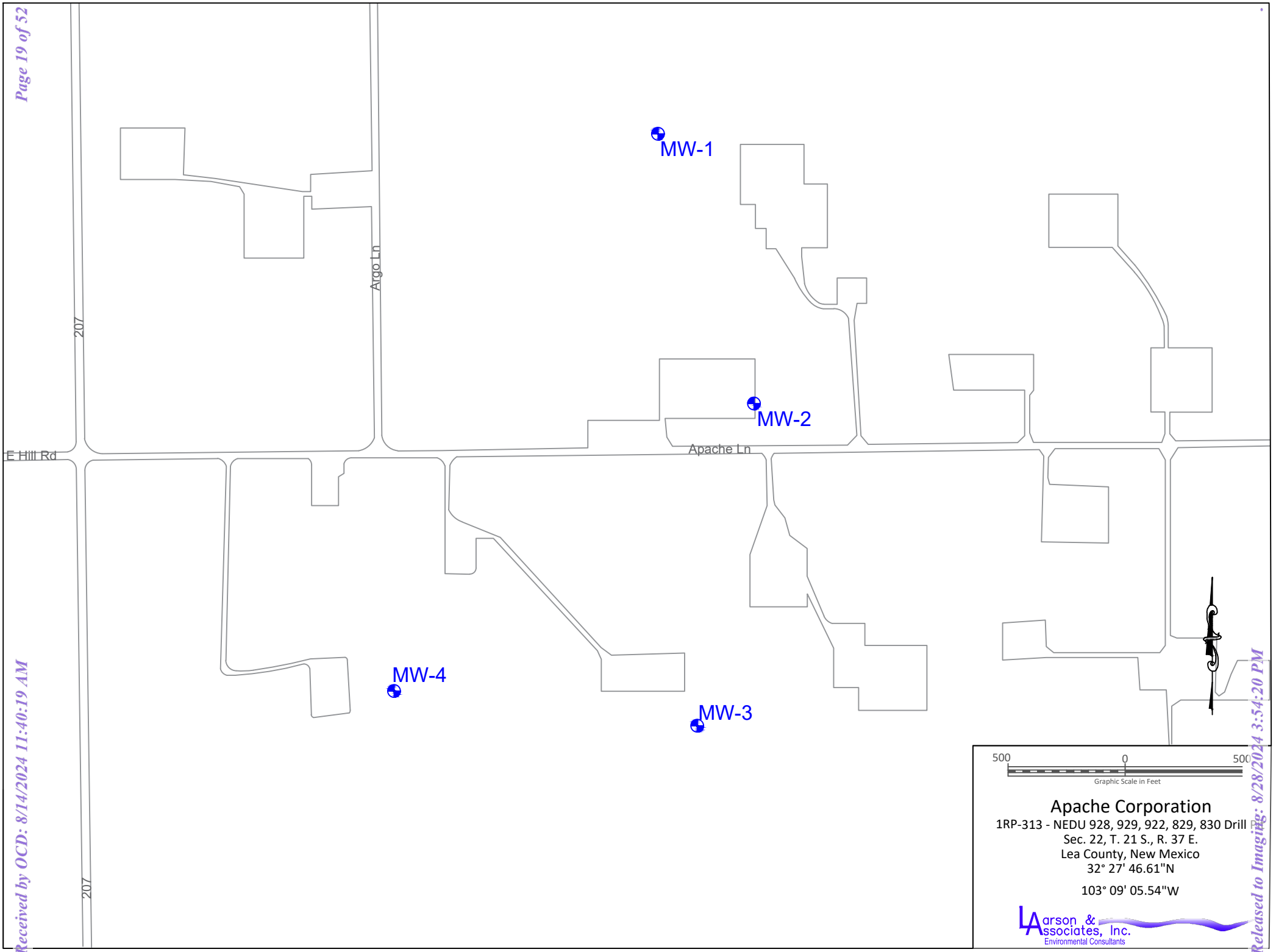


Figure 3 - Site Map

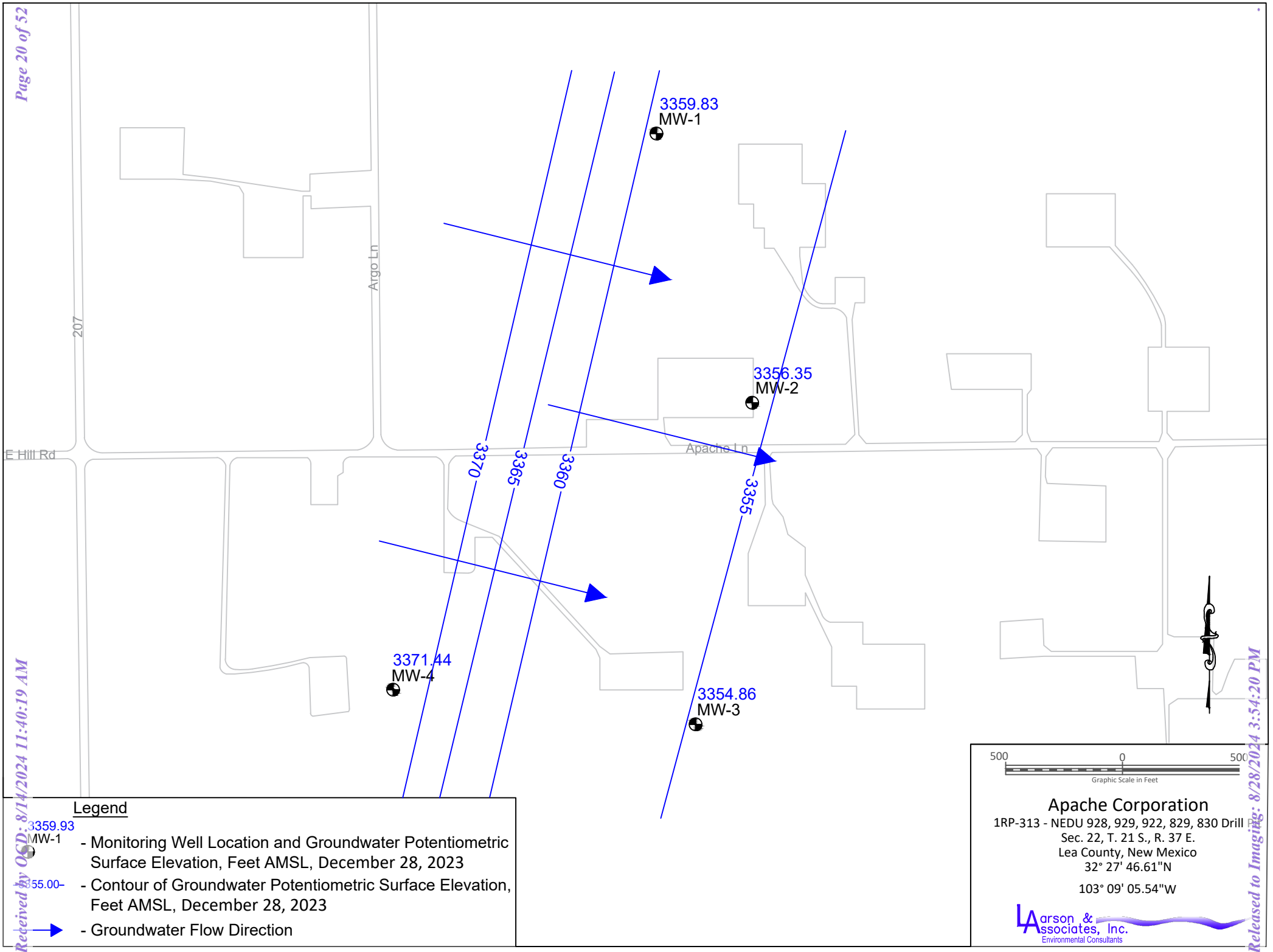


Figure 4d - Groundwater Potentiometric Map, December 28, 2023

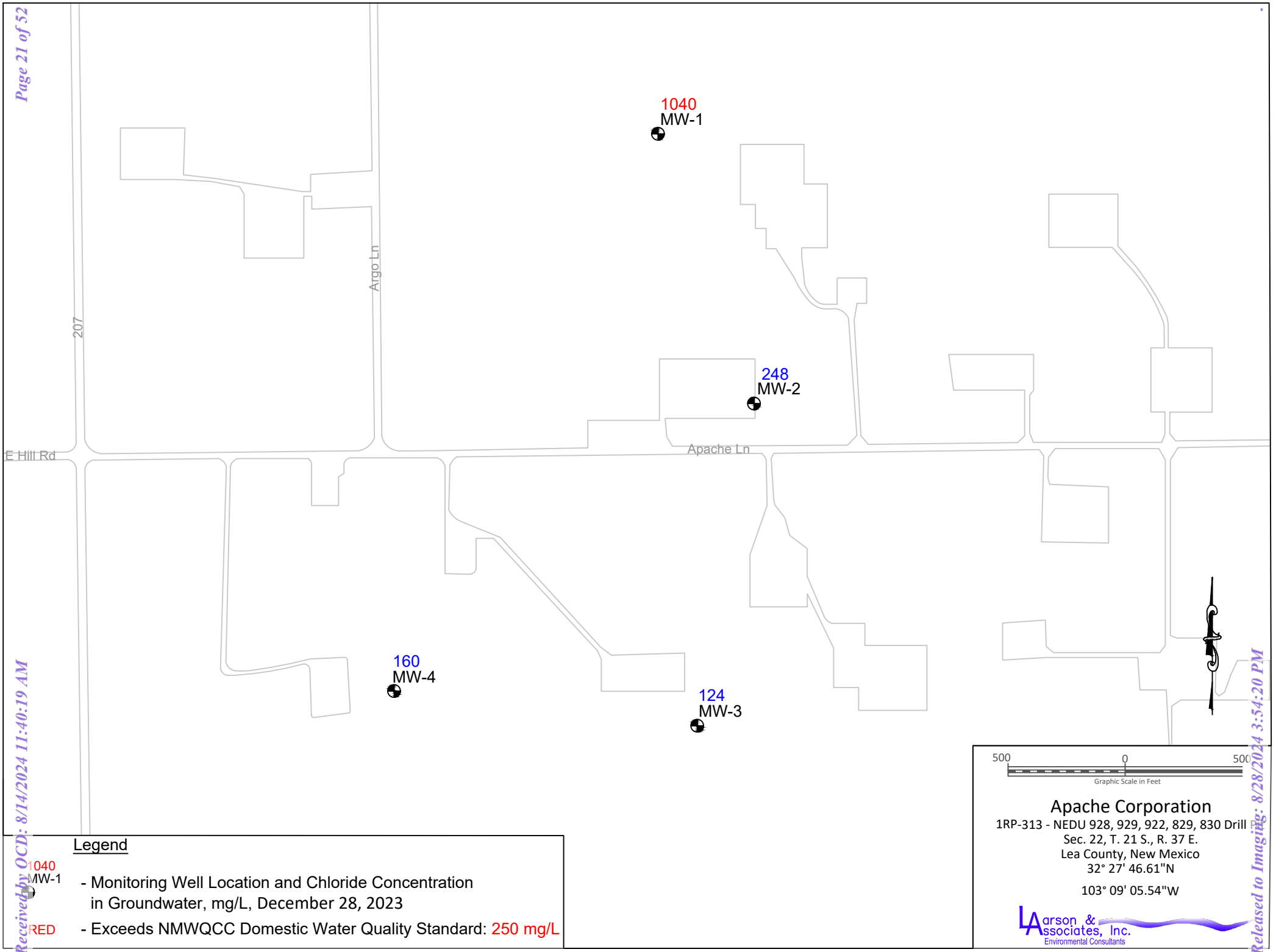


Figure 5d - Chloride Concentration in Groundwater, December 28, 2023

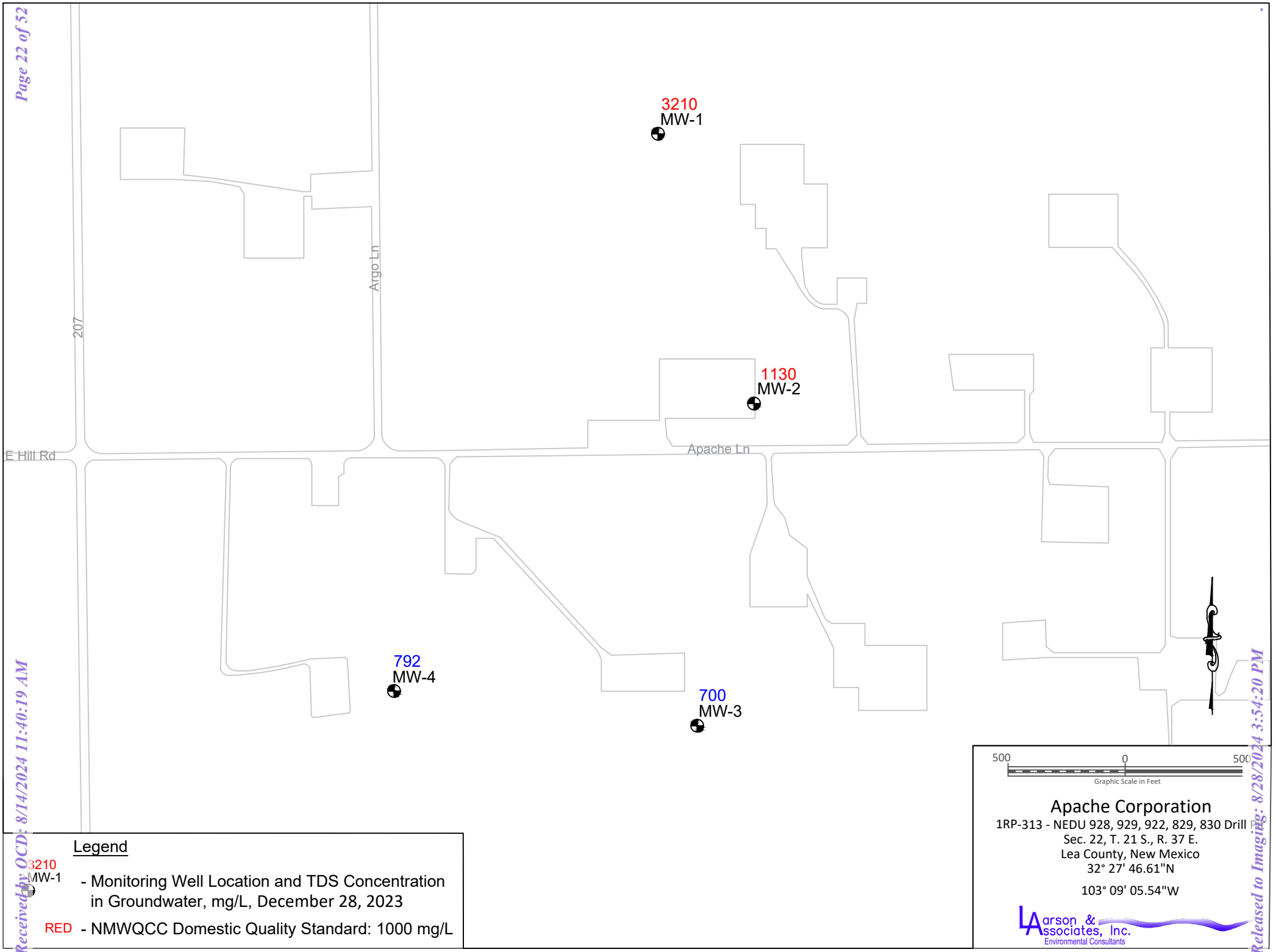


Figure 6d - TDS Concentration in Groundwater, December 28, 2023

Appendix A

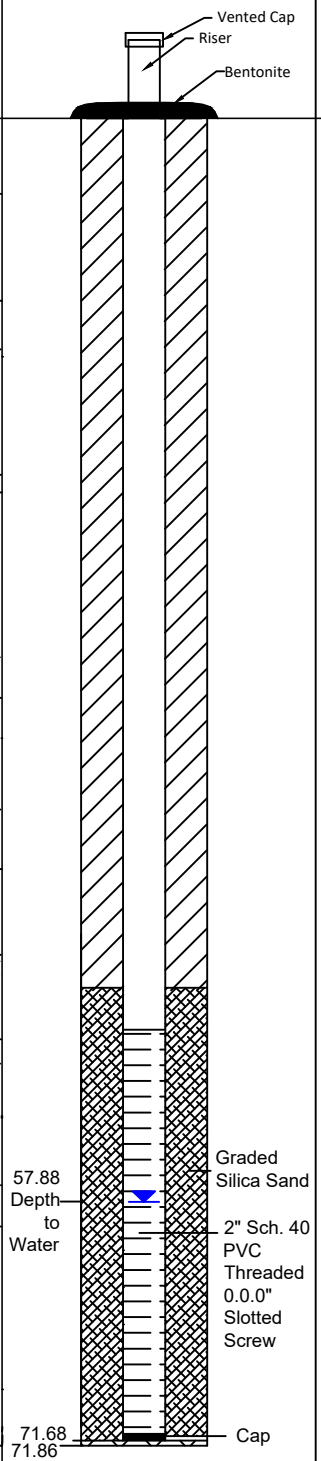
Monitoring Well Completion Records

BORING RECORD

Start: 13:17 MST
Finish: 14:40

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/6, Strong Brown, Fine Grained Quartz Sand, Well Sorted, Dry	SW	
	5			
	10	Silty Sand, 7.5YR 7/4, Pink, Fine Grained Quartz Sand, Moderately Sorted, Dry, Quartz Clasts 2mm	SM	
	15			
	20	7.5YR 6/6, Reddish Yellow, Fine Grained Quartz Sand, Moderately Sorted, Dry, Fine to Medium Quartz Clasts		
	25	Sand, 7.5YR 7/6, Reddish Yellow, Fine Grained Quartz Sand, Dry	SW	
	30	7.5YR 7/6, Reddish Yellow, Fine Grained Quartz Sand, Quartz Clasts		
	35			
	40	Silty Sand, 7.5YR 5/6, Strong Brown, Fine Grained Quartz Sand, Well Sorted, Dry		
	45			
	50	7.5YR 5/6, Strong Brown, Fine Grained Quartz Sand, Well Sorted, Dry, Quartz Clasts Medium to Coarse Grained	SM	
57.88 Depth to Water	55	Water Injected at 55'		
	60			
	65			
	70			
		TD: 71.86'		
	75			



NUMBER	RECOVERY	DEPTH

REMARKS

BACKGROUND
PID READING
SOIL : _____ PPM
SOIL : _____ PPM

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

Larson & Associates, Inc.
Environmental Consultants

DRILL DATE : 07/19/2021
BORING NUMBER : MW-2

JOB NUMBER : 19-0112-22/ Apache
HOLE DIAMETER : 5'
LOCATION : NEDU #922
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

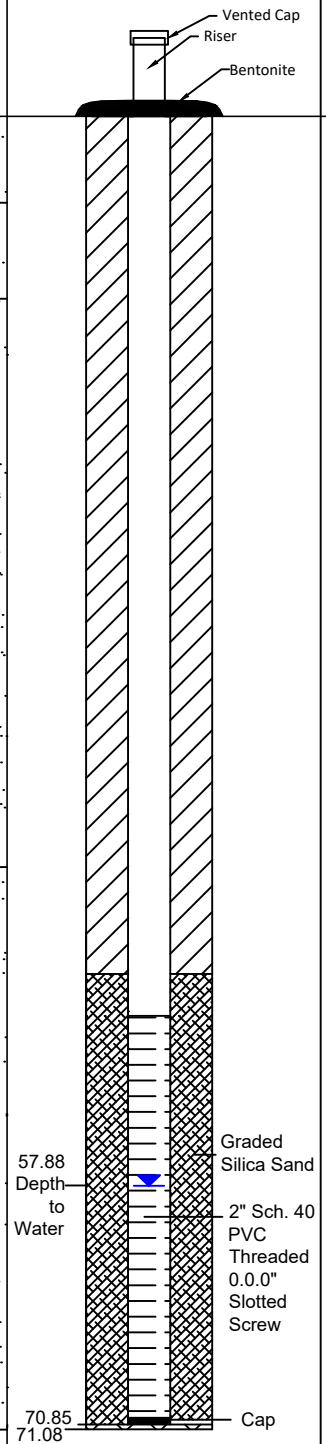
BORING RECORD

Start: 10:49 MST
Finish: 12:37

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0	Sand, 10YR 5/6, Yellowish Brown, Fine Grained Quartz Sand, Well Sorted, Dry	SW
	5	Silty Sand, 10YR 5/6, Yellowish Brown, Fine Grained Quartz Sand, Well Sorted, Dry	SM
	10	Sand, 7.5YR 7/6, Reddish Yellow, Fine Grained Quartz Sand, Dry, Poorly Sorted	SW
	25	Sand, 7.5YR 7/6, Reddish Brown, Fine Grained Quartz Sand, Dry, 4.75mm Clasts, Poorly Sorted	SW
	40	Silty Sand, 7.5YR 8/6, Pink, Well Sorted, Fine Grained Quartz Sand, Dry	SM
	45	10 YR 7/6, Yellowish Brown, Fine Grained Quartz Sand, Well Sorted Dry	SM
	50	10 YR 7/6, Yellowish Brown, Moderately Sorted, 2mm Quartz Clasts, Dry	SM
57.88 Depth to Water	55	Water Injected at 55'	SM
	60		SM
	65		SM
	70		SM
		TD: 71.08'	
	75		

GRAPHIC LOG



NUMBER | RECOVERY | DEPTH

REMARKS
BACKGROUND PID READING
SOIL : PPM
SOIL : PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : 19-0112-22/ Apache
HOLE DIAMETER : 5'
LOCATION : NEDU #830
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 07/19/2021

BORING NUMBER : MW-1

BORING RECORD

Start: 13:45
Finish: 14:50

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING PPM X	SAMPLE NUMBER	SAMPLE PID READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS BACKGROUND PID READING
	0	2.5YR 4/6, Red, Fine Grained Quartz Rich Sand, Very Well Sorted, Well Rounded, Unconsolidated								
	5					1			5	13:50
	10	Increase in Depth Lithology Remains Same Color Changes to 2.5YR 7/3 to 7/4 Light Reddish Brown at 13'	SM			2			10	13:54
	15					3			15	13:58
	20					4			20	14:03
	25	5YR 7/4, Pink, Fine to Medium Grained Quartz Rich Sand, Moderately Sorted, Rounded to Sub Rounded	SM			5			25	14:10
	30					6			30	14:13
	35					7			35	14:20
	40	7.5YR 9/2, Pale Yellowish Pink, Very Fine to Fine Grained Quartz Grained Sand, Well Sorted, Well Rounded to Sub Rounded				8			40	14:22
	45					9			45	14:25
Depth to Water: 53.71	50	7.5YR 6/8, Reddish Yellow, Very Fine to Fine Grained Quartz Sand, Well Sorted, Well Rounded	SM			10			50	14:30
	55					11			55	14:42
	60					12			60	14:44
	65					13			65	14:50
		TD: 65.35'								

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

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 7/20/2021
BORING NUMBER : MW- 3

JOB NUMBER : Apache/19-0112-22
HOLE DIAMETER : 5"
LOCATION : NEDU 929
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 9:35
Finish: 12:10

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING (PPM X)	SAMPLE NUMBER	SAMPLE PID READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS BACKGROUND PID READING
	0	Sand, 2.5YR 4/6, Red, Fine Grained Quart Sand, Very Well Sorted, Well Rounded, Unconsolidated, Quartz Rich Sand	SM							SOIL : PPM SOIL : PPM
	5					1			5	9:38
	10					2			10	9:40
	15	Sand, 2.5YR 7/4, Light Reddish Brown, Very Fine to Fine Grained Quartz Sand, Moderately Sorted, Sub Angular to Sub Rounded, with Depth Decrease in Grain Size and Becomes Well Sorted, Quartz Rich Sand				3			15	9:40
	20					4			20	9:42
	25	7.5YR 8/3, Pink, Fine to Medium Grained Quartz Sand, Sub Rounded to Sub Angular, Moderately Sorted, Quartz Rich Sand				5			25	9:45
	30		SM			6			30	10:30
	35	7.5YR 6/4, Light Brown, Fine Grained Quartz Sand, Well Sorted, Rounded to Sub Rounded, with Depth Increase in Consolidation and Cementation, Quartz Rich Sand				7			35	10:35
Depth to Water: 41.05	40					8			40	10:38
	45	7.5YR 7/4, Light Reddish Brown, Poorly Sorted, Fine to Coarse Grained Quartz Sand, Rounded to Angular, Very Consolidated with Red Sandstone Fragments in Cuttings, Quartz Rich Sand				9			45	11:14
	50									
	55									
	60	Introduced Water with Drilling	SM							
	65									
	70									
	75	TD: 76.01								

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 : 7/20/2021

BORING NUMBER : MW-4

JOB NUMBER : Apache/ 19-0112-22
HOLE DIAMETER : 5"
LOCATION : NEDU 928
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Appendix B

Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 1/5/2024 8:37:01 AM

JOB DESCRIPTION

NEDU Pits
19-0112-22

JOB NUMBER

880-37351-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

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

Holly Taylor

Generated
1/5/2024 8:37:01 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Laboratory Job ID: 880-37351-1
SDG: 19-0112-22

Table of Contents

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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.
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.

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. Job ID: 880-37351-1
Project: NEDU Pits

Job ID: 880-37351-1 Eurofins Midland

Job Narrative
880-37351-1

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 12/29/2023 8:45 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 3.9°C

The following samples were submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Dup-1 (880-37351-5) Per Daniel St. Germain, the lab was instructed to analyze this additional sample.

GC/MS VOA
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 860-139067 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recovery was within acceptance limits.

Method 300_ORGFM_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-1 (880-37351-1). Elevated reporting limits (RLs) are provided.

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: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Client Sample ID: MW-1
Date Collected: 12/28/23 12:30
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-1
Matrix: Water

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			01/02/24 18:13	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 18:13	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 18:13	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 18:13	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 18:13	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 144*		*01/02/24 18:13*	*1*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*		*01/02/24 18:13*	*1*
Dibromofluoromethane (Surr)	*108*		*75 - 131*		*01/02/24 18:13*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*01/02/24 18:13*	*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			01/02/24 18:13	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1040**		5.00		mg/L			01/04/24 02:40	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3210**		40.0		mg/L			01/02/24 09:55	1

Client Sample ID: MW-2
Date Collected: 12/28/23 11:40
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-2
Matrix: Water

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			01/02/24 18:32	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 18:32	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 18:32	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 18:32	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 18:32	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 144*		*01/02/24 18:32*	*1*
4-Bromofluorobenzene (Surr)	*100*		*74 - 124*		*01/02/24 18:32*	*1*
Dibromofluoromethane (Surr)	*110*		*75 - 131*		*01/02/24 18:32*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/02/24 18:32*	*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			01/02/24 18:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**248**		0.500		mg/L			01/04/24 02:02	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Client Sample ID: MW-2
Date Collected: 12/28/23 11:40
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1130		10.0		mg/L			01/02/24 09:55	1

Client Sample ID: MW-3
Date Collected: 12/28/23 10:00
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-3
Matrix: Water

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			01/02/24 18:51	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 18:51	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 18:51	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 18:51	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 18:51	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 144*		*01/02/24 18:51*	*1*
4-Bromofluorobenzene (Surr)	*99*		*74 - 124*		*01/02/24 18:51*	*1*
Dibromofluoromethane (Surr)	*108*		*75 - 131*		*01/02/24 18:51*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/02/24 18:51*	*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			01/02/24 18:51	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	124		0.500		mg/L			01/04/24 01:23	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	700		10.0		mg/L			01/02/24 09:55	1

Client Sample ID: MW-4
Date Collected: 12/28/23 10:55
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-4
Matrix: Water

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			01/02/24 19:10	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 19:10	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 19:10	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 19:10	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 19:10	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*63 - 144*		*01/02/24 19:10*	*1*
4-Bromofluorobenzene (Surr)	*101*		*74 - 124*		*01/02/24 19:10*	*1*
Dibromofluoromethane (Surr)	*112*		*75 - 131*		*01/02/24 19:10*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*01/02/24 19:10*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Client Sample ID: MW-4

Lab Sample ID: 880-37351-4
Matrix: Water
Date Collected: 12/28/23 10:55
Date Received: 12/29/23 08:45

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			01/02/24 19:10	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**		0.500		mg/L			01/04/24 02:14	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**792**		10.0		mg/L			01/02/24 09:55	1

Client Sample ID: Dup-1

Lab Sample ID: 880-37351-5
Matrix: Water
Date Collected: 12/28/23 00:00
Date Received: 12/29/23 08:45

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			01/02/24 19:29	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 19:29	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 19:29	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 19:29	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 19:29	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 144*		*01/02/24 19:29*	*1*
4-Bromofluorobenzene (Surr)	*104*		*74 - 124*		*01/02/24 19:29*	*1*
Dibromofluoromethane (Surr)	*110*		*75 - 131*		*01/02/24 19:29*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*01/02/24 19:29*	*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			01/02/24 19:29	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**251**		0.500		mg/L			01/04/24 04:49	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1100**		10.0		mg/L			01/02/24 09:55	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(63-144)	(74-124)	(75-131)	(80-120)
880-37351-1	MW-1	106	102	108	101
880-37351-2	MW-2	110	100	110	104
880-37351-3	MW-3	110	99	108	103
880-37351-4	MW-4	111	101	112	102
880-37351-5	Dup-1	110	104	110	107
LCS 860-138854/3	Lab Control Sample	96	99	98	99
LCSD 860-138854/4	Lab Control Sample Dup	88	97	96	97
MB 860-138854/9	Method Blank	106	102	106	102

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: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-138854/9
Matrix: Water
Analysis Batch: 138854

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			01/02/24 13:10	1
Toluene	<0.00100	U	0.00100		mg/L			01/02/24 13:10	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			01/02/24 13:10	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			01/02/24 13:10	1
o-Xylene	<0.00100	U	0.00100		mg/L			01/02/24 13:10	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			01/02/24 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 144*		*01/02/24 13:10*	*1*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*		*01/02/24 13:10*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 131*		*01/02/24 13:10*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*01/02/24 13:10*	*1*

Lab Sample ID: LCS 860-138854/3
Matrix: Water
Analysis Batch: 138854

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	0.05234		mg/L		105	75 - 125		
Toluene			0.0500	0.05230		mg/L		105	75 - 130		
Ethylbenzene			0.0500	0.05450		mg/L		109	75 - 125		
m,p-Xylenes			0.0500	0.05517		mg/L		110	75 - 125		
o-Xylene			0.0500	0.05497		mg/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*
4-Bromofluorobenzene (Surr)	*99*		*74 - 124*
Dibromofluoromethane (Surr)	*98*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 860-138854/4
Matrix: Water
Analysis Batch: 138854

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	0.04867		mg/L		97	75 - 125	7	25
Toluene			0.0500	0.04860		mg/L		97	75 - 130	7	25
Ethylbenzene			0.0500	0.04976		mg/L		100	75 - 125	9	25
m,p-Xylenes			0.0500	0.05039		mg/L		101	75 - 125	9	25
o-Xylene			0.0500	0.05119		mg/L		102	75 - 125	7	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*63 - 144*
4-Bromofluorobenzene (Surr)	*97*		*74 - 124*
Dibromofluoromethane (Surr)	*96*		*75 - 131*
Toluene-d8 (Surr)	*97*		*80 - 120*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 860-139067/3
Matrix: Water
Analysis Batch: 139067

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			01/03/24 17:12	1

Lab Sample ID: MB 860-139067/38
Matrix: Water
Analysis Batch: 139067

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			01/04/24 00:44	1

Lab Sample ID: LCS 860-139067/39
Matrix: Water
Analysis Batch: 139067

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	4.944		mg/L		99	90 - 110		

Lab Sample ID: LCSD 860-139067/40
Matrix: Water
Analysis Batch: 139067

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			5.00	4.942		mg/L		99	90 - 110	0	20

Lab Sample ID: LLCS 860-139067/7
Matrix: Water
Analysis Batch: 139067

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	0.4543	J	mg/L		91	50 - 150		

Lab Sample ID: 880-37351-3 MS
Matrix: Water
Analysis Batch: 139067

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	124		5.00	124.5	4	mg/L		18	90 - 110		

Lab Sample ID: 880-37351-3 MSD
Matrix: Water
Analysis Batch: 139067

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	124		5.00	124.5	4	mg/L		16	90 - 110	0	15

Lab Sample ID: 880-37351-5 MS
Matrix: Water
Analysis Batch: 139067

Client Sample ID: Dup-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	251		5.00	250.9	4	mg/L		3	90 - 110		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-37351-5 MSD
Matrix: Water
Analysis Batch: 139067

Client Sample ID: Dup-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	251		5.00	250.9	4	mg/L		3	90 - 110	0	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 860-138840/1
Matrix: Water
Analysis Batch: 138840

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5.00	U	5.00		mg/L			01/02/24 09:55	1

Lab Sample ID: LCS 860-138840/2
Matrix: Water
Analysis Batch: 138840

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	1111		mg/L		111	80 - 120		

Lab Sample ID: LCSD 860-138840/3
Matrix: Water
Analysis Batch: 138840

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	1111		mg/L		111	80 - 120	0	10

Lab Sample ID: LLCS 860-138840/26
Matrix: Water
Analysis Batch: 138840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			5.00	5.500		mg/L		110	50 - 150		

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

GC/MS VOA

Analysis Batch: 138854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37351-1	MW-1	Total/NA	Water	8260C	
880-37351-2	MW-2	Total/NA	Water	8260C	
880-37351-3	MW-3	Total/NA	Water	8260C	
880-37351-4	MW-4	Total/NA	Water	8260C	
880-37351-5	Dup-1	Total/NA	Water	8260C	
MB 860-138854/9	Method Blank	Total/NA	Water	8260C	
LCS 860-138854/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-138854/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 139031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37351-1	MW-1	Total/NA	Water	Total BTEX	
880-37351-2	MW-2	Total/NA	Water	Total BTEX	
880-37351-3	MW-3	Total/NA	Water	Total BTEX	
880-37351-4	MW-4	Total/NA	Water	Total BTEX	
880-37351-5	Dup-1	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 139067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37351-1	MW-1	Total/NA	Water	300.0	
880-37351-2	MW-2	Total/NA	Water	300.0	
880-37351-3	MW-3	Total/NA	Water	300.0	
880-37351-4	MW-4	Total/NA	Water	300.0	
880-37351-5	Dup-1	Total/NA	Water	300.0	
MB 860-139067/3	Method Blank	Total/NA	Water	300.0	
MB 860-139067/38	Method Blank	Total/NA	Water	300.0	
LCS 860-139067/39	Lab Control Sample	Total/NA	Water	300.0	
LCSD 860-139067/40	Lab Control Sample Dup	Total/NA	Water	300.0	
LLCS 860-139067/7	Lab Control Sample	Total/NA	Water	300.0	
880-37351-3 MS	MW-3	Total/NA	Water	300.0	
880-37351-3 MSD	MW-3	Total/NA	Water	300.0	
880-37351-5 MS	Dup-1	Total/NA	Water	300.0	
880-37351-5 MSD	Dup-1	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 138840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37351-1	MW-1	Total/NA	Water	SM 2540C	
880-37351-2	MW-2	Total/NA	Water	SM 2540C	
880-37351-3	MW-3	Total/NA	Water	SM 2540C	
880-37351-4	MW-4	Total/NA	Water	SM 2540C	
880-37351-5	Dup-1	Total/NA	Water	SM 2540C	
MB 860-138840/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 860-138840/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 860-138840/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
LLCS 860-138840/26	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Client Sample ID: MW-1
Date Collected: 12/28/23 12:30
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-1
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	138854	01/02/24 18:13	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			139031	01/02/24 18:13	KLV	EET HOU
Total/NA	Analysis	300.0		10			139067	01/04/24 02:40	W1N	EET HOU
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	138840	01/02/24 09:55	SA	EET HOU

Client Sample ID: MW-2
Date Collected: 12/28/23 11:40
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-2
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	138854	01/02/24 18:32	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			139031	01/02/24 18:32	KLV	EET HOU
Total/NA	Analysis	300.0		1			139067	01/04/24 02:02	W1N	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	138840	01/02/24 09:55	SA	EET HOU

Client Sample ID: MW-3
Date Collected: 12/28/23 10:00
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-3
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	138854	01/02/24 18:51	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			139031	01/02/24 18:51	KLV	EET HOU
Total/NA	Analysis	300.0		1			139067	01/04/24 01:23	W1N	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	138840	01/02/24 09:55	SA	EET HOU

Client Sample ID: MW-4
Date Collected: 12/28/23 10:55
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-4
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	138854	01/02/24 19:10	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			139031	01/02/24 19:10	KLV	EET HOU
Total/NA	Analysis	300.0		1			139067	01/04/24 02:14	W1N	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	138840	01/02/24 09:55	SA	EET HOU

Client Sample ID: Dup-1
Date Collected: 12/28/23 00:00
Date Received: 12/29/23 08:45

Lab Sample ID: 880-37351-5
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	138854	01/02/24 19:29	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			139031	01/02/24 19:29	KLV	EET HOU
Total/NA	Analysis	300.0		1	0 mL	1.0 mL	139067	01/04/24 04:49	W1N	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	138840	01/02/24 09:55	SA	EET HOU

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

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: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

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

Method Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

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: NEDU Pits

Job ID: 880-37351-1
SDG: 19-0112-22

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37351-1	MW-1	Water	12/28/23 12:30	12/29/23 08:45
880-37351-2	MW-2	Water	12/28/23 11:40	12/29/23 08:45
880-37351-3	MW-3	Water	12/28/23 10:00	12/29/23 08:45
880-37351-4	MW-4	Water	12/28/23 10:55	12/29/23 08:45
880-37351-5	Dup-1	Water	12/28/23 00:00	12/29/23 08:45

351 No. 3231

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/29/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER#: _____

PROJECT LOCATION OR NAME: NEDU Pits

LAI PROJECT # 19-0112-22 COLLECTOR: DSG

Data Reported to

TRRP report? ☐ Yes ☒ No

TIME ZONE Time zone/State: MNT / NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4	NaOH ☐	ICE	UNPRESSERVED	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 ☐	D W 200.8 ☐	TCLP ☐	RCI ☐	TOX ☐	FLASHPOINT ☐	TDS ☒	TSS ☐	% MOISTURE ☐	pH ☐	HEXAVALENT CHROMIUM ☐	CYANIDE ☐	EXPLOSIVES ☐	PECHLORATE ☐	CHLORIDE ☒	ANIONS ☐	ALKALINITY ☐	FIELD NOTES
MW-1		12/28/23	1230	W	5	X				X		X																										X			X						Direct Bill
MW-2		12/28/23	1140	W	5	X				X		X																										X			X						to Apache
MW-3		12/28/23	1000	W	5	X				X		X																										X			X						
MW-4		12/28/23	1055	W	5	X				X		X																										X			X						

880-37351 Chain of Custody

TOTAL 4

RELINQUISHED BY (Signature) Daniel Plum DATE/TIME 12/29/23 845 RECEIVED BY (Signature)

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)

ELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3-7/3-9 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-8781 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 880-37351 1
Address: 4145 Greenbriar Dr	Due Date Requested: 1/8/2024			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: NEDU Pits	Project #: 88000515			
Site:	SSOW#:			

Analysis Requested

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 EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd/ TDS	8260C/6030C BTEX	Total_BTEX	300_ORGFM_28D/ Chloride	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
Dup-1 (880-37351-5)	12/28/23	Mountain		Water			X	X	X	X	5	

Temp. C/F:-0.0 1.3 IR ID:HOU-369
Corrected Temp: 1.3

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sar... laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC labor..., ... If the ...anges to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 12/30/23 9:54	Company Eurofins
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Midland
1211 W Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-8779.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 880-37351 1
Address: 4145 Greenbriar Dr	Due Date Requested: 1/8/2024			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: NEDU Pits	Project #: 88000515			
Site:	SSOW#:			

Analysis Requested

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 EDA
M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd/ TDS	8260C/5030C BTEX	Total_BTEX	300_ORGFM_28D/ Chloride	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
MW-1 (880-37351-1)	12/28/23	12:30 Mountain		Water			X	X	X	X	5	
MW-2 (880-37351-2)	12/28/23	11:40 Mountain		Water			X	X	X	X	5	
MW-3 (880-37351-3)	12/28/23	10:00 Mountain		Water			X	X	X	X	5	
MW-4 (880-37351-4)	12/28/23	10:55 Mountain		Water			X	X	X	X	5	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipi laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to E

Temp. 1.3 IR ID HOU-369
C/F -0.0
Corrected Temp. 1.3

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II III, IV Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]					
			[signature]	12/30/23 9.59	Eurofins

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37351-1
SDG Number: 19-0112-22

Login Number: 37351
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	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37351-1
SDG Number: 19-0112-22

Login Number: 37351
List Number: 2
Creator: Torres, Sandra

List Source: Eurofins Houston
List Creation: 12/30/23 11:34 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	1.3
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	

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 373819

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 373819
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	NEDU Drill Pits 2023 4th Quarter Groundwater Monitoring Report, submitted for the record on 08/14/2024 by Apache, App ID:373819	8/28/2024