March 3,

2023

1RP-389
2022 Semi-Annual (July – December) Groundwater Monitoring
State C Tract 13
Lea County, New Mexico

Prepared for:

Apache

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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 2022 semi-annual (July - December) groundwater monitoring results for the State C Tract 13 (Site) located in Section 36, Range 37 East, Township 21 South, in Lea County, New Mexico. The geodetic position is North 32.43830° and West -103.12155°.

The following activities occurred on August 8, 2022, and December 16, 2022:

- Gauge six (6) monitoring wells (MW-1 through MW-6) and a recovery well (RW-1) for depth to groundwater.
- Purged and sampled groundwater from six (6) monitoring wells (MW-1 through MW-6) and a recovery well (RW-1).
- Analyzed groundwater samples BTEX, nitrate, chloride, and total dissolved solids (TDS).

The following observations are documented in this report for August 8, 2022:

- Depth to groundwater ranged from 39.33 (MW-5) to 40.98 (MW-1) feet bgs.
- The groundwater elevation ranged between 3,321.83 feet above mean sea level (MSL) at MW-2 (upgradient) to 3,321.25 feet above MSL at MW-6 (downgradient).
- The groundwater flow direction was from west to east at a gradient between 0.0004 and 0.0024 feet per foot (ft/ft).
- BTEX concentrations were reported below the analytical method reporting limit (RL) and WQCC human health standards in all groundwater samples.
- Nitrate concentrations were reported below the WQCC human health standard of 10 mg/L in all groundwater samples.
- Chloride concentrations were reported above the WQCC domestic water quality standard (250 mg/L) in MW-1 (465 mg/L), MW-2 (6,300 mg/L), MW-3 (14,200 mg/L), MW-4 (510 mg/L), MW-5 (366 mg/L) and RW-1 (979 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in MW-1 (1,240 mg/L), MW-2 (8,030 mg/L), MW-3 (17,500 mg/L), and MW-4 (1,780 mg/L).
- No significant changes in depth to groundwater, groundwater flow conditions and analyte concentrations were observed during the third 2022 quarterly monitoring event on August 8, 2022.

The following observations are documented in this report for December 16, 2022:

- Depth to groundwater ranged from 39.22 feet bgs (MW-5) to 40.94 feet bgs (MW-1).
- Groundwater elevation ranged between 3,321.93 feet above MSL at MW-2 (upgradient) to 3,321.34 feet above MSL at MW-6 (downgradient).
- The groundwater flow direction was from west to east at a gradients between 0.0002 and 0.002 ft/ft.
- BTEX concentrations were reported below analytical method RL and WQCC human health standards in all groundwater.
- Nitrate concentrations were reported below the WQCC human health standard of 10 mg/L in all groundwater samples.

- Chloride concentrations were reported above the WQCC domestic water quality standard (250 mg/L) in groundwater samples from MW-1 (400 mg/L), MW-2 (2,140 mg/L), MW-3 (7,180 mg/L), MW-4 (463 mg/L), and RW-1 (976 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in groundwater samples from monitoring wells MW-1 (1,450 mg/L), MW-2 (4,700 mg/L), MW-3 (11,600 mg/L).
- No significant changes in depth to groundwater, groundwater flow conditions and analyte concentrations were observed during the fourth 2022 quarterly monitoring event on December 16, 2022.

Apache will continue to notify NMOCD at seven (7) working in days in advance of each quarterly groundwater monitoring event and immediately for any significant changes in analyte concentrations in groundwater samples.

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI) has prepared this report on behalf of the Apache Corporation (Apache) to be submitted to the New Mexico Oil Conservation Division (NMOCD) District I in Hobbs and Santa Fe, New Mexico. This report presents 2022 semiannual (July-December) groundwater monitoring results for the State C Tract 13 (Site) located in Section 36, Range 37 East, Township 21 South, in Lea County, New Mexico. The geodetic position is North 32.43830° and West -103.12155°. The Site is the former location of an unlined disposal pit located approximately 215 feet south from the State C Tract 13 tank battery. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

2.1 Background

Between November 19, 2002, and September 10, 2004, Eco Drilling Services, under supervision from Safety & Environmental Solutions, Inc. (SESI), drilled and installed six (6) monitoring wells (MW-1 through MW-6) at the Site. The wells were drilled to 72.21 feet below ground surface (bgs) at MW-1, 57.47 feet bgs (MW-2), 54.71 feet bgs (MW-3), and 55.00 feet bgs (MW-4, MW-5, and MW-6). The wells were completed with 2-inch schedule 40 PVC casing of 0.020-inch slotted screen. Depth to groundwater was gauged between 43.52 feet bgs at MW-4 and 46.33 feet bgs at MW-1. SESI personnel collected groundwater samples from the wells which were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), cations (sodium, calcium, magnesium, and potassium), anions (chloride, sulfate, carbonate, calcium carbonate) and total dissolved solids (TDS). SESI documented the investigation and remediation in the report titled, "*Apache Corporation State C. Tract 13 Site Investigation, Section 36, Township 21S, Range 37E, Lea County, New Mexico, March 10, 2003".*

On July 21, 2021, Scarborough Drilling Inc. (SDI), under LAI supervision, installed a recovery well (RW-1) southeast (downgradient) from the pit excavation where SESI excavated approximately 1,104 cubic yards of soil to a depth of about fourteen feet bgs. A 40-mil thick liner was placed in the bottom of the excavation and covered with soil to ground surface. The recovery/test well was drilled to approximately 69.25 feet bgs and completed with five (5) inch non-threaded schedule 40 PVC casing and about 29.55 feet of 0.02-inch factory slotted screen. The screen was positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the screen to about two (2) feet above the screen. The remaining annulus above the screen was filled to about 1-foot bgs with bentonite chips and hydrated with potable water. Depth to groundwater was gauged at about 40.09 feet bgs. West Companies, Midland, Texas, a State of New Mexico Licensed Profession Land Surveyor (LPS Number 23263) surveyed the monitoring and recovery wells for geodetic position, and ground and top of casing (TOC) elevation. Table 1 presents the monitoring and recovery well completion details. Figure 3 presents an aerial map showing the monitoring and recovery well locations.

3.0 GROUNDWATER MONITORING

3.1 DEPTH TO GROUNDWATER AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION

On August 8, 2022, LAI personnel gauged depth to groundwater in monitoring wells MW-1 through MW-6 and recovery well RW-1. Groundwater was measured at 40.98 (MW-1), 40.15 (MW-2), 40.33 (MW-3), 39.89 (MW-4), 39.33 (MW-5), 40.55 (MW-6), and 39.86 (RW-1) feet bgs. The groundwater potentiometric surface elevation ranged from 3,321.83 at MW-2 (upgradient) to 3,321.25 at MW-6 (downgradient). An apparent groundwater divide occurs in the area of monitoring well MW-2 that causes groundwater to flow northeast towards MW-1, east towards MW-3 and RW-1, and southeast towards MW-4 through MW-6 at gradients between 0.0004 feet per foot (ft/ft) and 0.0024 ft/ft. Table 2 presents the groundwater gauging summary. Figure 4a presents the groundwater potentiometric map for August 8, 2022.

On December 16, 2022, LAI personnel gauged depth to groundwater in monitoring wells MW-1 through MW-6 and recovery well RW-1. Groundwater was measured at 40.94 (MW-1), 30.05 (MW-2), 40.24 (MW-3), 39.81 (MW-4), 39.22 (MW-5), 40.36 (MW-6), and 39.81 (RW-1) feet bgs. The groundwater potentiometric surface elevation ranged between 3,321.93 feet above MSL at MW-2 (upgradient) and 3,321.34 feet above MSL at MW-6 (downgradient). An apparent groundwater divide occurs in the area of monitoring well MW-2 that causes groundwater to flow northeast towards MW-1, east towards MW-3 and RW-1, and southeast towards MW-4 through MW-6 at gradients between 0.0002 feet per foot (ft/ft) and 0.002 ft/ft. Table 2 presents the groundwater gauging summary. Figure 4b presents the groundwater potentiometric map for December 16, 2022.

No significant changes were observed in groundwater depths, potentiometric surface elevations, groundwater flow directions, or groundwater gradients between August 8, 2022, and December 12, 2022.

3.2 GROUNDWATER SAMPLES AND ANALYSIS

On August 8, 2022, and December 12, 2022, LAI personnel collected groundwater samples from monitoring wells MW-1 through MW-6 and recovery well RW-1. Notification of the groundwater sampling events was submitted to the NMOCD. During both groundwater monitoring events, groundwater samples from MW-1 and RW-1, were collected 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. The 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. Groundwater samples from MW-2 through MW-6 were collected using dedicated disposable polyethylene bailers during both groundwater monitoring events.

The groundwater samples were transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody to Eurofins-Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Midland, Texas. A duplicate sample was collected from RW-1 on August 8, 2022, and from RW-1 on December 12, 2022, for laboratory quality assurance and quality control (QA/QC). Xenco analyzed the samples for BTEX by EPA SW-846 Method SW-8021D, chloride and nitrate by EPA Method 300, and TDS by Method SM 2540C. Table 3 presents the laboratory analytical summary. Appendix A presents the NMOCD communications. Appendix B presents the laboratory reports.

3.2.1 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 collected from monitoring wells MW-1 through MW-6 and recovery well RW-1 on August 8, 2022, and December 12, 2022.

3.2.2 Inorganic Analysis

Chloride concentrations in groundwater samples collected on August 8, 2022, were 465 mg/L (MW-1), 6,300 mg/L(MW-2), 14,200 mg/L (MW-3), 463 mg/L (MW-4), 366 mg/L (MW-5), and 1,190 mg/L (RW-1) and exceeded the WQCC domestic water quality standard (250 mg/L). Chloride concentrations in groundwater samples collected from MW-6 (125 mg/L) were below the WQCC domestic water quality control standard. Figure 5a presents the chloride concentration map August 8, 2022.

Chloride concentrations in groundwater samples collected on December 16, 2022, were 400 mg/L (MW-1), 2,140 mg/L (MW-2), 7,180 mg/L (MW-3), 463 mg/L (MW-4) and 979 mg/L (RW-1) and exceeded the WQCC domestic water quality standard (250 mg/L). Chloride concentrations in groundwater samples collected from MW-5 (132 mg/L) and MW-6 (125 mg/L) remained below the WQCC domestic water quality standard for chloride. Figure 5b presents the chloride concentration map on December 16, 2022.

TDS concentrations in groundwater samples collected on August 8, 2022, were 1,240 mg/L (MW-1), 8,030 mg/L (MW-2), 17,500 mg/L (MW-3), 1,780 mg/L (MW-4), 2,970 mg/L (MW-5), 1,040 mg/L (MW-6), and 2,330 mg/L (RW-1) and were above the WQCC water quality standard for TDS (1,000 mg/L). Figure 6a presents the TDS concentration map on August 8, 2022.

TDS concentrations in groundwater samples collected on December 16, 2022, were 1,450 mg/L (MW-1), 4,700 mg/L (MW-2), and 11,600 mg/L (MW-3). TDS concentrations in samples from MW-4 (792 mg/L) MW-5 (926 mg/L), and MW-6 (848 mg/L) were below the WQCC domestic water quality standard.. Figure 6b presents the TDS concentration map on December 16, 2022.

Xenco reported nitrate concentrations below the WQCC human health standard of 10 mg/L in all groundwater samples collected on August 8, 2022, and December 16, 2022.

5.0 CONCLUSIONS

The following observations are documented in this report for August 8, 2022:

- Depth to groundwater ranged from 39.33 (MW-5) to 40.98 (MW-1) feet bgs.
- The groundwater elevation ranged between 3,321.83 feet above mean sea level (MSL) at MW-2 (upgradient) to 3,321.25 feet above MSL at MW-6 (downgradient).
- The groundwater flow direction was from west to east at a gradient between 0.0004 and 0.0024 feet per foot (ft/ft).
- BTEX concentrations were reported below the analytical method reporting limit (RL) and WQCC human health standards in all groundwater samples.
- Nitrate concentrations were reported below the WQCC human health standard of 10 mg/L in all groundwater samples.
- Chloride concentrations were reported above the WQCC domestic water quality standard (250 mg/L) in MW-1 (465 mg/L), MW-2 (6,300 mg/L), MW-3 (14,200 mg/L), MW-4 (510 mg/L), MW-5 (366 mg/L) and RW-1 (979 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in MW-1 (1,240 mg/L), MW-2 (8,030 mg/L), MW-3 (17,500 mg/L), and MW-4 (1,780 mg/L).
- No significant changes in depth to groundwater, groundwater flow conditions and analyte concentrations were observed during the third 2022 quarterly monitoring event on August 8, 2022.

The following observations are documented in this report for December 16, 2022:

- Depth to groundwater ranged from 39.22 feet bgs (MW-5) to 40.94 feet bgs (MW-1).
- Groundwater elevation ranged between 3,321.93 feet above MSL at MW-2 (upgradient) to 3,321.34 feet above MSL at MW-6 (downgradient).
- The groundwater flow direction was from west to east at a gradients between 0.0002 and 0.002 ft/ft.
- BTEX concentrations were reported below analytical method RL and WQCC human health standards in all groundwater.
- Nitrate concentrations were reported below the WQCC human health standard of 10 mg/L in all groundwater samples.
- Chloride concentrations were reported above the WQCC domestic water quality standard (250 mg/L) in groundwater samples from MW-1 (400 mg/L), MW-2 (2,140 mg/L), MW-3 (7,180 mg/L), MW-4 (463 mg/L), and RW-1 (976 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in groundwater samples from monitoring wells MW-1 (1,450 mg/L), MW-2 (4,700 mg/L), MW-3 (11,600 mg/L).
- No significant changes in depth to groundwater, groundwater flow conditions and analyte concentrations were observed during the fourth 2022 quarterly monitoring event on December 16, 2022.

Apache will continue quarterly monitoring of groundwater in wells MW-1 through MW-6 and RW-1 during 2022 with laboratory analysis of groundwater samples for BTEX, chloride, nitrate, and TDS. Apache will provide the NMOCD two semiannual groundwater monitoring reports.

Notice will be provided to NMOCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The NMOCD will be notified immediately upon receipt of laboratory analysis with significant increase of analyte concentrations.

Tables

Table 1
1RP-389
Groundwater Gauging Table
Apache State C Tract 13
Lea County, New Mexico

Well Information						Groundwater Data			
Boring ID	Well Depth (Feet TOC)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	TOC Elevation (Feet AMSL)	Casing Stickup (Feet)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Groundwater Elevation (Feet AMSL)
MW-1	72.45	2	3,363.03	3,365.00	2.50	06/05/2019	43.52	41.02	3,321.48
						07/21/2020	43.60	41.10	3,321.40
						07/30/2021	43.70	41.20	3,321.30
						08/10/2021	43.66	41.16	3,321.34
						08/11/2021	43.69	41.19	3,321.31
						03/03/2022	43.37	40.87	3,321.63
						05/06/2022	43.37	40.87	3,321.63
						08/18/2022	43.48	40.98	3,321.52
						12/16/2022	43.44	40.94	3,321.56
MW-2	45.78	2	3,361.86	3,364.58	2.60	06/5/2019	42.71	40.11	3,321.87
						07/21/2020	42.70	40.10	3,321.88
						07/30/2021	DRY	--	--
						08/10/2021	DRY	--	--
						08/11/2021	DRY	--	--
						03/03/2022	42.53	39.93	3,322.05
						05/26/2022	42.56	39.96	3,322.02
						08/18/2022	42.75	40.15	3,321.83
						12/16/2022	42.65	40.05	3,321.93
MW-3	45.74	2	3,361.86	3,364.72	2.75	06/05/2019	43.00	40.25	3,321.72
						07/21/2020	43.00	40.25	3,321.72
						07/30/2021	DRY	--	--
						08/10/2021	DRY	--	--
						08/11/2021	DRY	--	--
						03/03/2022	42.91	40.16	3,321.81
						05/26/2022	42.91	40.16	3,321.81

Table 1
1RP-389
Groundwater Gauging Table
Apache State C Tract 13
Lea County, New Mexico

Well Information						Groundwater Data			
Boring ID	Well Depth (Feet TOC)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	TOC Elevation (Feet AMSL)	Casing Stickup (Feet)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Groundwater Elevation (Feet AMSL)
						08/18/2022	43.08	40.33	3,321.64
						12/16/2022	42.99	40.24	3,321.73
MW-4	46.42	2	3,361.49	3,364.00	2.62	06/05/2019	42.41	39.79	3,321.59
						07/21/2020	42.10	39.48	3,321.90
						07/30/2021	DRY	--	--
						08/10/2021	DRY	--	--
						08/11/2021	DRY	--	--
						03/03/2022	42.32	39.70	3,321.68
						05/26/2022	42.37	39.75	3,321.63
						08/18/2022	42.51	39.89	3,321.49
						12/16/2022	42.43	39.81	3,321.57
MW-5	46.19	2	3,361.73	3,364.77	3.85	06/05/2019	42.98	39.13	3,321.79
						07/20/2020	43.00	39.15	3,321.77
						07/30/2021	43.25	39.40	3,321.52
						08/10/2021	43.20	39.35	3,321.57
						08/11/2021	43.21	39.36	3,321.56
						03/03/2022	42.96	39.11	3,321.81
						05/26/2022	43.00	39.15	3,321.77
						08/18/2022	43.18	39.33	3,321.59
						12/16/2022	43.07	39.22	3,321.70
MW-6	46.91	2	3,361.42	3,364.32	2.62	06/05/2019	42.88	40.26	3,321.44
						07/20/2020	42.95	40.33	3,321.37
						07/30/2021	43.12	40.50	3,321.20
						08/10/2021	43.06	40.44	3,321.26

Table 1
1RP-389
Groundwater Gauging Table
Apache State C Tract 13
Lea County, New Mexico

Well Information						Groundwater Data			
Boring ID	**Well Depth** (Feet TOC)	**Well Diameter** (Inches)	**Surface Elevation** (Feet AMSL)	**TOC Elevation** (Feet AMSL)	**Casing Stickup** (Feet)	**Date Gauged**	**Depth to Water** (Feet TOC)	**Depth to Water** (Feet BGS)	**Groundwater Elevation** (Feet AMSL)
						08/11/2021	43.08	40.46	3,321.24
						03/03/2022	42.85	40.23	3,321.47
						05/26/2022	42.89	40.27	3,321.43
						08/18/2022	43.07	40.45	3,321.25
						12/16/2022	42.98	40.36	3,321.34
RW-1	65.67	8.5	3,361.66	3,364.60	3.00	08/10/2021	43.00	40.00	3,321.60
						08/11/2021	43.09	40.09	3,321.51
						08/19/2021	43.08	40.08	3,321.52
						03/03/2022	42.75	39.75	3,321.85
						05/26/2022	42.75	39.75	3,321.85
						08/18/2022	42.86	39.86	3,321.74
						12/16/2022	42.81	39.81	3,321.79

Notes:
TOC: top of casing
AMSL: above mean sea level

Table 2
1RP-389
Groundwater Analytical Data Summary
Apache Corp, State C Tract #13
Lea County, New Mexico
19-0112-38

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)
RRAL		**0.005**	**0.7**	**1**	**0.62**	**10**	**600**	**250**	**1,000**
MW-1	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	1.41	--	**540**	--
	07/30/2021 [2]	--	--	--	--	--	242	**352**	**1,200**
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	3.28	--	**426**	**1,290**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**403**	**1,370**
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	2.23	--	**465**	**1,240**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	1.52	--	**400**	**1,450**
MW-2	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	0.314	--	**5,330**	--
	07/30/2021 [2]	--	--	--	--	--	DRY	DRY	DRY
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<5.00	--	**3,540**	**6,140**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**3,520**	**7,850**
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	1.74	--	**6,300**	**8,030**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	0.341	--	**2,140**	**4,700**
MW-3	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	0.0890	--	**4,330**	--
	07/30/2021 [2]	--	--	--	--	--	DRY	DRY	DRY
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<5.00	--	**6,100**	**10,100**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**6,830**	**11,900**
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	1.72	--	**14,200**	**17,500**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	<1.00	--	**7,180**	**11,600**
MW-4	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	0.3030	--	**776**	--
	07/30/2021 [2]	--	--	--	--	--	DRY	DRY	DRY
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	3.03	--	**472**	**1,340**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**510**	**1,510**

Table 2
1RP-389
Groundwater Analytical Data Summary
Apache Corp, State C Tract #13
Lea County, New Mexico
19-0112-38

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)
RRAL		**0.005**	**0.7**	**1**	**0.62**	**10**	**600**	**250**	**1,000**
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	1.14	--	**664**	**1,780**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	0.63	--	**463**	**792**
MW-5	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	<0.0800	--	67.5	--
	07/30/2021 [2]	--	--	--	--	-	419	144	**1,340**
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<1.00	--	100	**1,020**
	05/26/2022 [2]	<0.00400	<0.00400	<0.00400	<0.00800	<0.100	--	101	968
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.500	--	**366**	**2,970**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	<0.100	--	132	926
MW-6	06/05/2019 [1]	<0.00100	<0.00100	<0.00100	<0.003	1.42	--	**274**	--
	07/30/2021 [2]	--	--	--	--	--	438	126	**2,330**
	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	1.66	--	117	**1,050**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	105	967
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	2.2	--	129	**1,040**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	0.942	--	125	848
RW-1	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	6.19	--	**979**	**1,970**
	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**931**	**2,020**
	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	3.54	--	**1,190**	**2,330**
	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	2.14	--	**979**	864
QA/QC									
DUP-1 (MW-1)	06/05/2019 [1]	--				--	--	--	--
DUP-1 (MW-1)	07/30/2021 [2]	--				--	224	**325**	**1190**
DUP-1 (MW-1)	03/03/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	2.78	--	**407**	**1330**

Table 2
1RP-389
Groundwater Analytical Data Summary
Apache Corp, State C Tract #13
Lea County, New Mexico
19-0112-38

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)
RRAL		**0.005**	**0.7**	**1**	**0.62**	**10**	**600**	**250**	**1,000**
DUP-1 (RW-1)	05/26/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	<0.100	--	**966**	**2,040**
DUP-1 (RW-1)	08/18/2022 [2]	<0.00200	<0.00200	<0.00200	<0.00400	3.62	--	**1,170**	**23,500**
DUP - 1 (RW-1)	12/16/2022 [2]	<0.00100	<0.00100	<0.00100	<0.0100	2.11	--	**822**	**1,620**

Notes:

[1]: analysis performed by Permian Basin Environmental Lab, Midland, Texas by EPA SW-846 Method 6020B (BTEX) and Method 300

[2]: analysis performed by Eurofins Xenco Laboratories, Midland, Texas by EPA SW-846 Method 6020B (BTEX) and Method 300

<: concentration below analytical reporting limit

--: no data availible

Values reported in milligrams per liter (mg/L)

Exceeds New Mexico Water Domestic Water Quality Standard

Table 4

Groundwater Recovery Well Analytical Data Summary
Apache Corp. State C Tract 13
Lea County, New Mexico

Sample	Collection Date	Time (MST)	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)
NMQCC Standard:			**1,000**	**600**	**250**
RW-1	8/11/2021	11:15	3430	231	1,770
		15:15	3310	235	1,930
		19:16	3470	231	1,980
	8/12/2021	23:16	3320	232	1,950
		2:16	3240	235	1,900
		6:16	3300	231	1,940
		10:16	3250	237	1,870
		14:16	3380	236	1,940
	8/13/2021	18:16	3440	230	1,920
		2:10	3450	214	1,940
		6:10	3620	230	1,850
		10:16	3650	234	1,910

Notes: analysis performed by Eurofins Xenco Laboratory, Midland, Texas by EPA Method 300
Results reported in milligrams per liter (mg/L)
Exceeds New Mexico domestic water quality standard

Figures

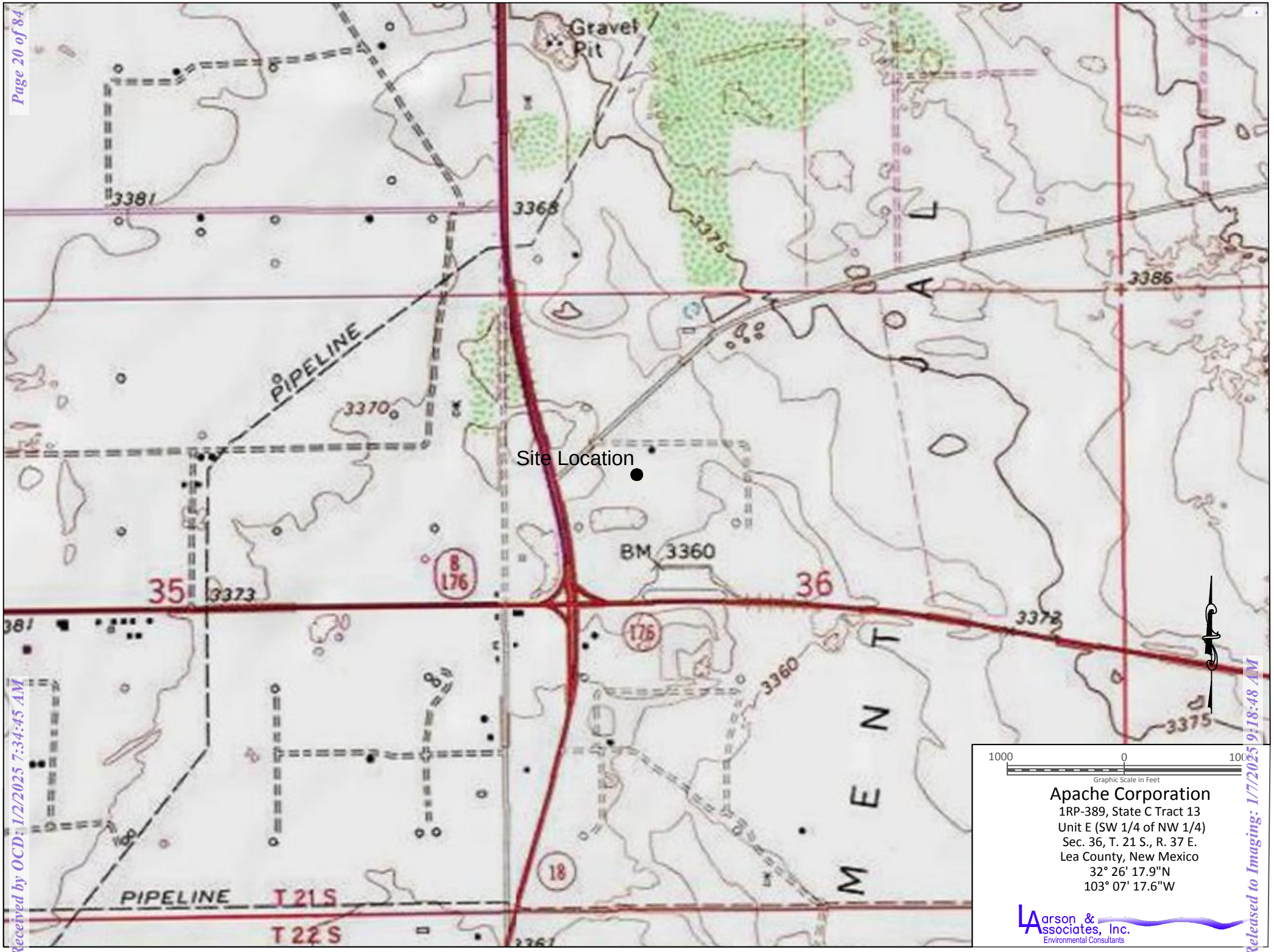
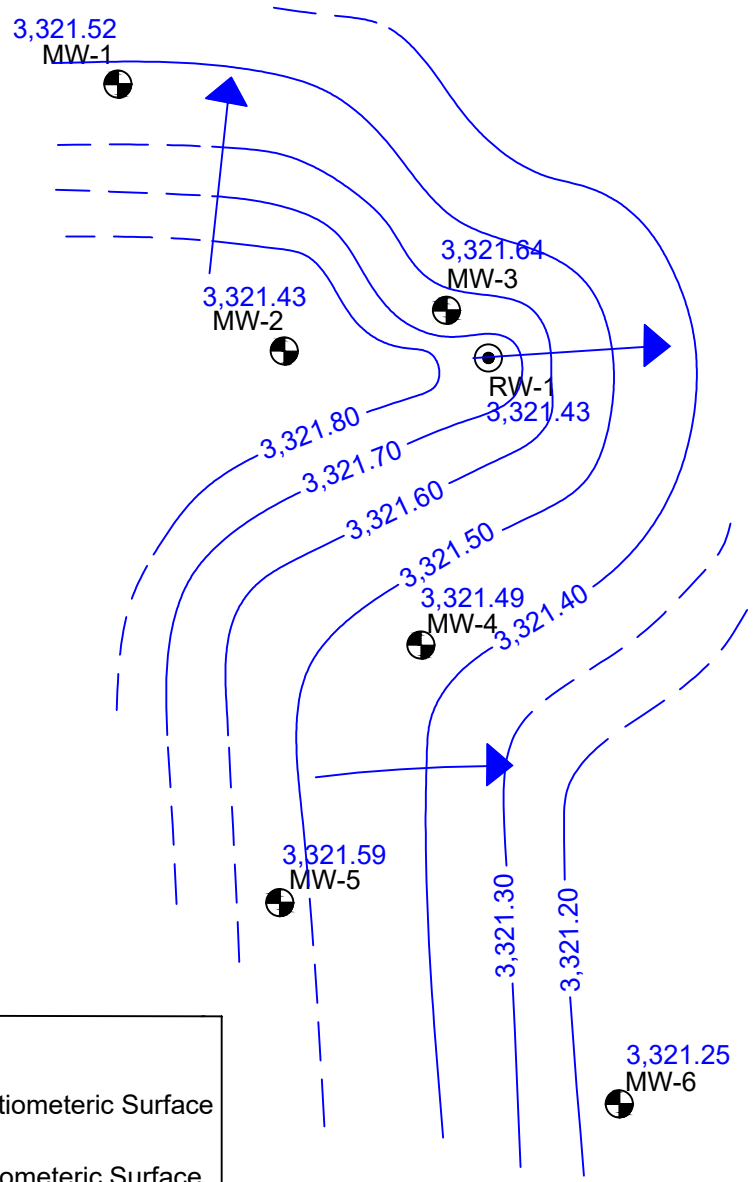


Figure 1 - Topographic Map

Figure 2 - Aerial Map Showing Monitoring Wells and Recovery Well



Legend

319.59 MW-4 - Monitoring Well Location and Potentiometeric Surface Elevation on August 8, 2022

321.85 RW-1 - Recovery Well Location and Potentiometeric Surface Elevation on August 8, 2022

3321.40 - Contour of Groundwater Potentiometric Water Elevation, Feet AMSL, August 8, 2022

- Groundwater Flow Direction

100 0 100
Graphic Scale in Feet

Apache Corporation
1RP-389, State C Tract 13
Unit E (SW 1/4 of NW 1/4)
Sec. 36, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 26' 17.9"N
103° 07' 17.6"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3a - Groundwater Potentiometric Map, August 8, 2022

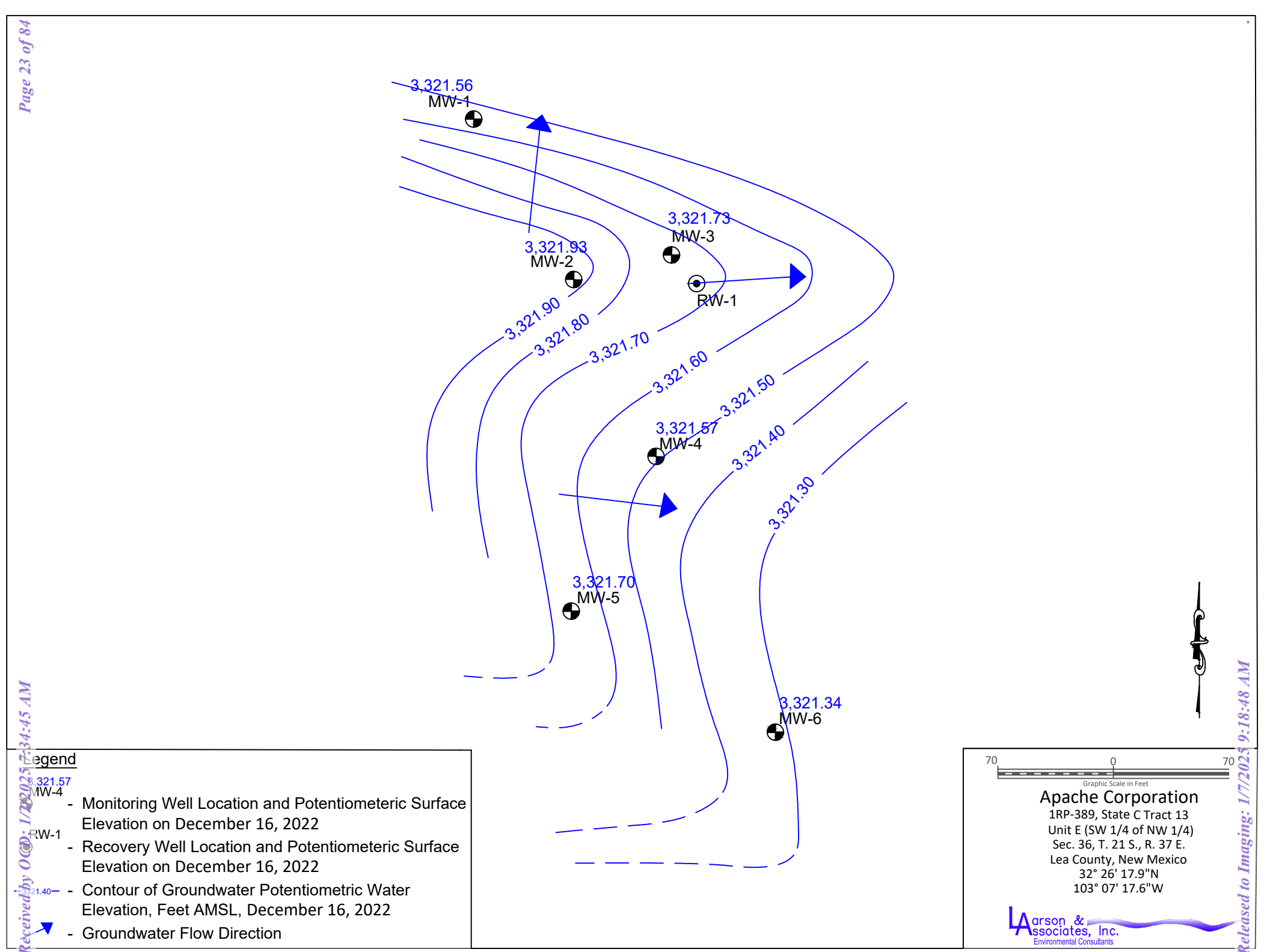
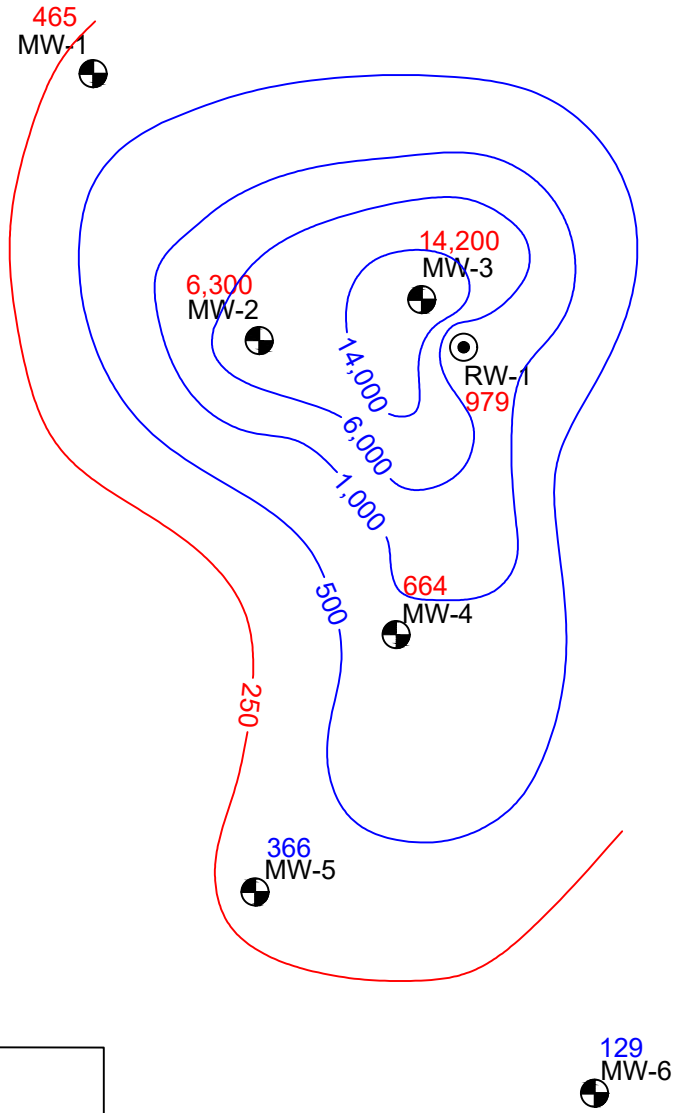


Figure 3b - Groundwater Potentiometric Map, December 16, 2022



Legend

664 MW-4 - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, August 8, 2022

979 RW-1 - Recovery Well Location and Chloride Concentration in Groundwater, mg/L, August 8, 2022

500 - Contour of Groundwater Chloride Concentration

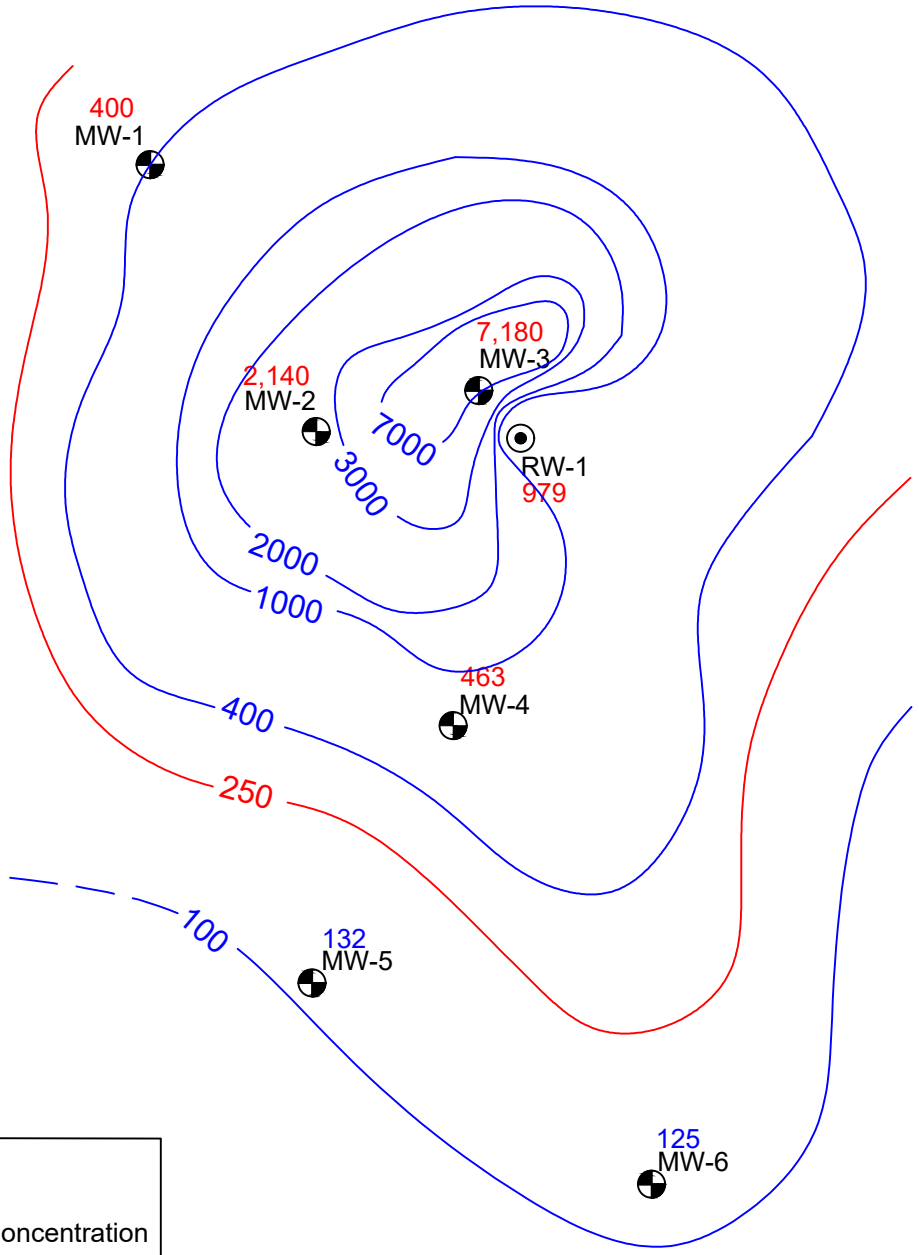
250 mg/L - Concentration NMWQCC Domestic Water Quality Standard

70 0 70
Graphic Scale in Feet

Apache Corporation
1RP-389, State C Tract 13
Unit E (SW 1/4 of NW 1/4)
Sec. 36, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 26' 17.9"N
103° 07' 17.6"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4a - Chloride Concentration in Groundwater Map, August 8, 2022



Legend

463 MW-4 - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, December 16, 2022

979 RW-1 - Recovery Well Location and Chloride Concentration in Groundwater, mg/L, December 16, 2022

500 - Contour of Groundwater Chloride Concentration

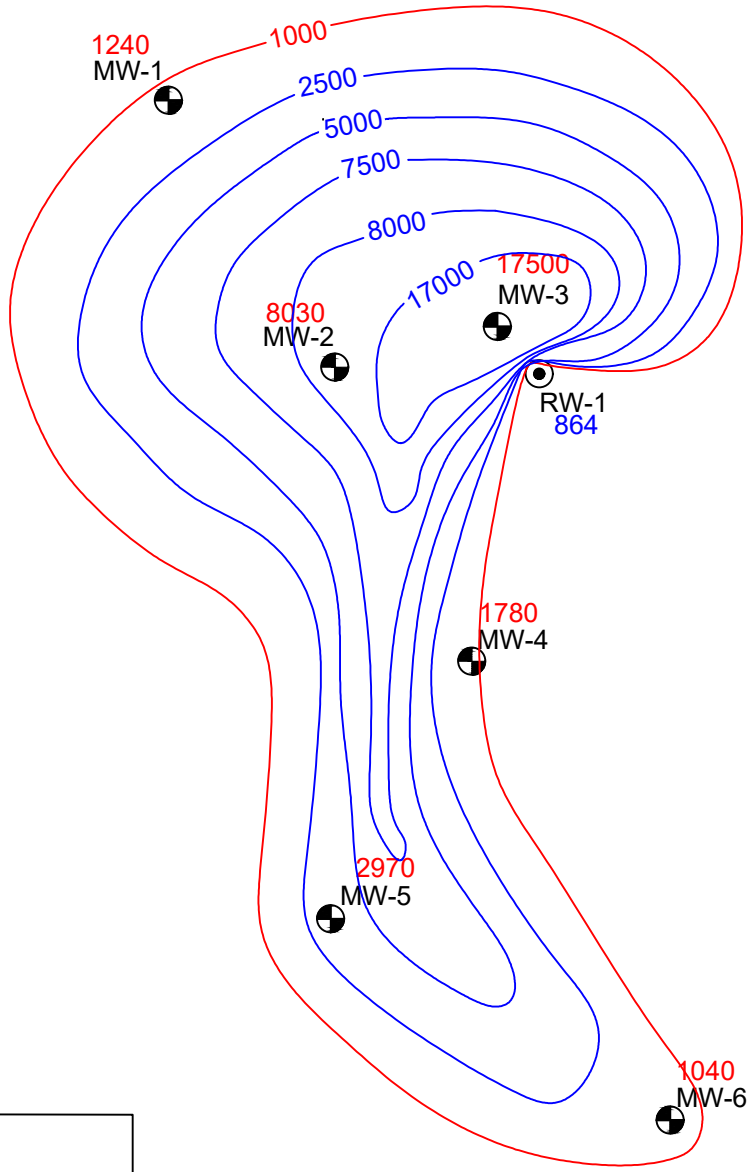
250 mg/L - Concentration NMWQCC Domestic Water Quality Standard

70 0 70
Graphic Scale in Feet

Apache Corporation
1RP-389, State C Tract 13
Unit E (SW 1/4 of NW 1/4)
Sec. 36, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 26' 17.9"N
103° 07' 17.6"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4b - Chloride Concentration in Groundwater Map, December 16, 2022



Legend

1780 MW-4 - Monitoring Well Location and TDS Concentration in Groundwater, mg/L, August 8, 2022

864 RW-1 - Recovery Well Location and TDS Concentration in Groundwater, mg/L, August 8, 2022

1500 - Contour of TDS Groundwater Concentration

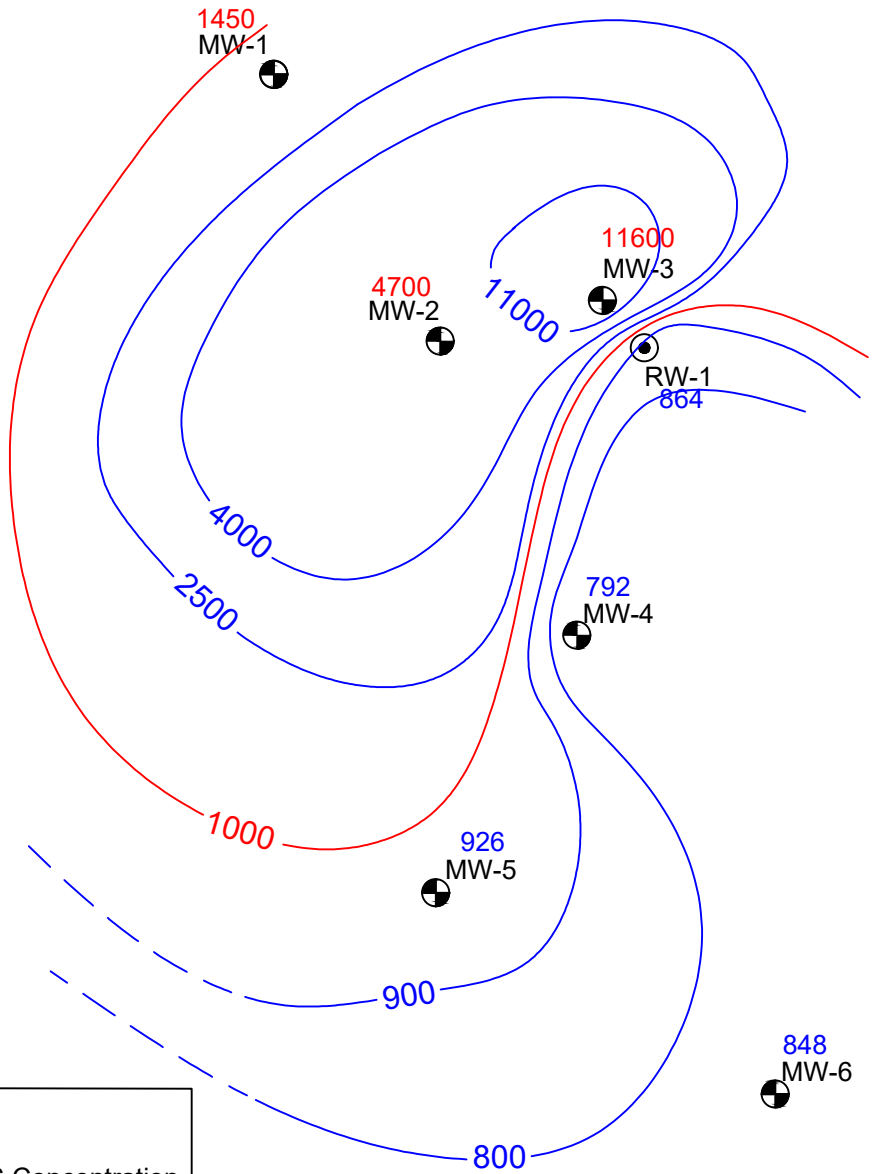
1000 mg/L - NMWQCC Domestic Water Quality Standard

70 0 70
Graphic Scale in Feet

Apache Corporation
1RP-389, State C Tract 13
Unit E (SW 1/4 of NW 1/4)
Sec. 36, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 26' 17.9"N
103° 07' 17.6"W

Larson & Associates, Inc.
Environmental Consultants

Figure 5a - TDS Concentration in Groundwater, August 8, 2022



Legend

792 MW-4 - Monitoring Well Location and TDS Concentration in Groundwater, mg/L, December 16, 2022

864 RW-1 - Recovery Well Location and TDS Concentration in Groundwater, mg/L, December 16, 2022

1500 - Contour of TDS Groundwater Concentration

1000 mg/L - NMWQCC Domestic Water Quality Standard

70 0 70
Graphic Scale in Feet

Apache Corporation
1RP-389, State C Tract 13
Unit E (SW 1/4 of NW 1/4)
Sec. 36, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 26' 17.9"N
103° 07' 17.6"W

Larson & Associates, Inc.
Environmental Consultants

Figure 5b - TDS Concentration in Groundwater, December 16, 2022

Appendix A

NMOCD Communications

Daniel St. Germain

From: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Sent: Wednesday, August 10, 2022 9:12 AM
To: Robert Nelson; Bratcher, Mike, EMNRD
Cc: 'Larry.Baker@apachecorp.com'; Bole, Barrett; Mark Larson; Daniel St. Germain
Subject: RE: [EXTERNAL] Apache Corp. State C Tract #13 (1RP-389 / App #pEJH1214461703) Groundwater Sampling Notice

Hello,

Thank you for the notification. Please keep this email and include with allied report(s).

Bradford Billings
EMNRD/OCD

From: Robert Nelson <rnelson@laenvironmental.com>
Sent: Tuesday, August 9, 2022 3:36 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Cc: 'Larry.Baker@apachecorp.com' <Larry.Baker@apachecorp.com>; Bole, Barrett <Barrett.Bole@apachecorp.com>; Mark Larson <Mark@laenvironmental.com>; Daniel St. Germain <dstgermain@laenvironmental.com>
Subject: [EXTERNAL] Apache Corp. State C Tract #13 (1RP-389 / App #pEJH1214461703) Groundwater Sampling Notice

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Mr. Billings and Mr. Bratcher,

This message is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Apache Corporation to provide notice that personnel from Larson & Associates, Inc. (LAI) will be at the State C Tract #13 (1RP-389 / App # pEJH1214461703) on August 18, 2022, at approximately 9:00 mst for the purpose of collecting groundwater samples from monitoring wells per the OCD approved plan. Please feel free to contact Bruce Baker with Apache at (432) 215-2284 or Larry.Baker@apache.com, Mark Larson at (432) 687-0901 or mark@laenvironmental.com or me if you have any questions.

Thank you,

Robert Nelson
Sr. Geologist
Office – 432-687-0901
Cell – 432-664-4804
rnelson@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

Daniel St. Germain

From: Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>
Sent: Tuesday, December 6, 2022 11:56 AM
To: Robert Nelson; Bratcher, Michael, EMNRD
Cc: 'Larry.Baker@apachecorp.com'; Bole, Barrett; Mark Larson; Daniel St. Germain
Subject: RE: [EXTERNAL] Apache Corp. State C Tract #13 (1RP-389 / App #pEJH1214461703) Groundwater Sampling Notice

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Bradford Billings
EMNRD/OCD

From: Robert Nelson <rnelson@laenvironmental.com>
Sent: Tuesday, December 6, 2022 10:41 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Cc: 'Larry.Baker@apachecorp.com' <Larry.Baker@apachecorp.com>; Bole, Barrett <Barrett.Bole@apachecorp.com>; Mark Larson <Mark@laenvironmental.com>; Daniel St. Germain <dstgermain@laenvironmental.com>
Subject: [EXTERNAL] Apache Corp. State C Tract #13 (1RP-389 / App #pEJH1214461703) Groundwater Sampling Notice

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Mr. Billings and Mr. Bratcher,

This message is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Apache Corporation to provide notice that personnel from Larson & Associates, Inc. (LAI) will be at the State C Tract #13 (1RP-389 / App # pEJH1214461703) on December 16, 2022, at approximately 9:00 mst for the purpose of collecting groundwater samples from monitoring wells per the OCD approved plan. Please feel free to contact Bruce Baker with Apache at (432) 215-2284 or Larry.Baker@apache.com, Mark Larson at (432) 687-0901 or mark@laenvironmental.com or me if you have any questions.

Thank you,

Robert Nelson
Sr. Geologist
Office – 432-687-0901
Cell – 432-664-4804
rnelson@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

Appendix B

Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-18330-1
Laboratory Sample Delivery Group: 19-0112-38
Client Project/Site: State C Tract #13

For:
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by:
8/29/2022 3:47:13 PM

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

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.

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Laboratory Job ID: 880-18330-1
SDG: 19-0112-38

Table of Contents

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-18330-1
Project/Site: State C Tract #13 SDG: 19-0112-38

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high 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.
H	Sample was prepped or analyzed beyond the specified holding time
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/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Job ID: 880-18330-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-18330-1

Receipt
The samples were received on 8/18/2022 4:20 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 was 0.6º C.

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-32728 recovered above the upper control limit for o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; 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.

General Chemistry
Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-32670 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.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-32671 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.

Method 300.0: Reanalysis of the following samples were performed outside of the analytical holding time due to instrumentation error/ QC failure: MW-5 (880-18330-1), MW-6 (880-18330-2), MW-1 (880-18330-3), MW-4 (880-18330-4), MW-3 (880-18330-5), RW-1 (880-18330-6), MW-2 (880-18330-7) and Dup-1 (880-18330-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: MW-5
Date Collected: 08/18/22 09:28
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 01:00	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 01:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 01:00	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 01:00	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 01:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*08/24/22 01:00*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*		*08/24/22 01:00*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**366**		2.50		mg/L			08/22/22 18:38	5
Nitrate as N	<0.500	U H	0.500		mg/L			08/22/22 18:38	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2970**		10.0		mg/L			08/23/22 14:39	1

Client Sample ID: MW-6
Date Collected: 08/18/22 10:33
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 01:26	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 01:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 01:26	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 01:26	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 01:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 01:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*08/24/22 01:26*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*		*08/24/22 01:26*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**129**		2.50		mg/L			08/22/22 18:51	5
Nitrate as N	**2.20**	**H**	0.500		mg/L			08/22/22 18:51	5

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: MW-6
Date Collected: 08/18/22 10:33
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1040**		5.00		mg/L			08/23/22 14:39	1

Client Sample ID: MW-1
Date Collected: 08/18/22 12:01
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-3
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 01:52	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 01:52	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 01:52	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 01:52	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 01:52	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*08/24/22 01:52*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*		*08/24/22 01:52*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**465**		2.50		mg/L			08/22/22 19:03	5
Nitrate as N	**2.23**	**H**	0.500		mg/L			08/22/22 19:03	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1240**		10.0		mg/L			08/23/22 14:39	1

Client Sample ID: MW-4
Date Collected: 08/18/22 11:20
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-4
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 02:17	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 02:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 02:17	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 02:17	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 02:17	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 02:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*08/24/22 02:17*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*		*08/24/22 02:17*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: MW-4
Lab Sample ID: 880-18330-4
Date Collected: 08/18/22 11:20
Matrix: Water
Date Received: 08/18/22 16:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**664**		2.50		mg/L			08/22/22 19:15	5
Nitrate as N	**1.18**	**H**	0.500		mg/L			08/22/22 19:15	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1780**		10.0		mg/L			08/23/22 14:39	1

Client Sample ID: MW-3
Lab Sample ID: 880-18330-5
Date Collected: 08/18/22 11:42
Matrix: Water
Date Received: 08/18/22 16:20

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 02:43	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 02:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 02:43	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 02:43	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 02:43	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 02:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*08/24/22 02:43*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*		*08/24/22 02:43*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14200**		50.0		mg/L			08/22/22 23:47	100
Nitrate as N	**1.72**	**H**	1.00		mg/L			08/22/22 20:17	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**17500**		100		mg/L			08/23/22 14:39	1

Client Sample ID: RW-1
Lab Sample ID: 880-18330-6
Date Collected: 08/18/22 12:31
Matrix: Water
Date Received: 08/18/22 16:20

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 03:09	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 03:09	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 03:09	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 03:09	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 03:09	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 03:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*08/24/22 03:09*	*1*

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Client Sample Results

Client: Larson & Associates, Inc. Job ID: 880-18330-1
Project/Site: State C Tract #13 SDG: 19-0112-38

Client Sample ID: RW-1 Lab Sample ID: 880-18330-6
Date Collected: 08/18/22 12:31 **Matrix: Water**
Date Received: 08/18/22 16:20

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*		*08/24/22 03:09*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1190**		10.0		mg/L			08/23/22 00:00	20
Nitrate as N	**3.54**	**H**	0.500		mg/L			08/22/22 20:30	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2330**		10.0		mg/L			08/23/22 14:39	1

Client Sample ID: MW-2 Lab Sample ID: 880-18330-7
Date Collected: 08/18/22 11:02 **Matrix: Water**
Date Received: 08/18/22 16:20

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 03:34	1
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 03:34	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 03:34	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 03:34	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 03:34	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 03:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*08/24/22 03:34*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*		*08/24/22 03:34*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6300**		25.0		mg/L			08/23/22 00:12	50
Nitrate as N	**1.74**	**H**	1.00		mg/L			08/22/22 20:42	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**8030**		50.0		mg/L			08/23/22 14:39	1

Client Sample ID: Dup-1 Lab Sample ID: 880-18330-8
Date Collected: 08/18/22 00:00 **Matrix: Water**
Date Received: 08/18/22 16:20

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			08/24/22 04:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: Dup-1
Date Collected: 08/18/22 00:00
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-8
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00200	U	0.00200		mg/L			08/24/22 04:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/24/22 04:00	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/24/22 04:00	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/24/22 04:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/24/22 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*08/24/22 04:00*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*		*08/24/22 04:00*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			08/24/22 10:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1170**		10.0		mg/L			08/23/22 00:24	20
Nitrate as N	**3.62**	**H**	0.500		mg/L			08/22/22 20:54	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**23500**		100		mg/L			08/23/22 14:39	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-18024-A-11 MS	Matrix Spike	118	105
880-18024-A-11 MSD	Matrix Spike Duplicate	132 S1+	141 S1+
880-18330-1	MW-5	116	91
880-18330-2	MW-6	107	103
880-18330-3	MW-1	98	88
880-18330-4	MW-4	114	97
880-18330-5	MW-3	112	105
880-18330-6	RW-1	101	86
880-18330-7	MW-2	101	96
880-18330-8	Dup-1	96	87
LCS 880-32728/3	Lab Control Sample	99	95
LCSD 880-32728/4	Lab Control Sample Dup	105	105
MB 880-32728/8	Method Blank	74	88

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32728/8
Matrix: Water
Analysis Batch: 32728

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			08/23/22 19:03	1
Toluene	<0.00200	U	0.00200		mg/L			08/23/22 19:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			08/23/22 19:03	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			08/23/22 19:03	1
o-Xylene	<0.00200	U	0.00200		mg/L			08/23/22 19:03	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			08/23/22 19:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*70 - 130*		*08/23/22 19:03*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*		*08/23/22 19:03*	*1*

Lab Sample ID: LCS 880-32728/3
Matrix: Water
Analysis Batch: 32728

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	0.09631		mg/L		96	70 - 130		
Toluene			0.100	0.1077		mg/L		108	70 - 130		
Ethylbenzene			0.100	0.1070		mg/L		107	70 - 130		
m,p-Xylenes			0.200	0.2171		mg/L		109	70 - 130		
o-Xylene			0.100	0.1196		mg/L		120	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-32728/4
Matrix: Water
Analysis Batch: 32728

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	0.1074		mg/L		107	70 - 130	11	20
Toluene			0.100	0.1164		mg/L		116	70 - 130	8	20
Ethylbenzene			0.100	0.1125		mg/L		113	70 - 130	5	20
m,p-Xylenes			0.200	0.2320		mg/L		116	70 - 130	7	20
o-Xylene			0.100	0.1287		mg/L		129	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 880-18024-A-11 MS
Matrix: Water
Analysis Batch: 32728

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	0.0549	F1 F2	0.100	0.09950	F1	mg/L		45	70 - 130		
Toluene	<0.00200	U	0.100	0.1080		mg/L		108	70 - 130		

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-18024-A-11 MS
Matrix: Water
Analysis Batch: 32728

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	0.131	F1 F2	0.100	0.1076	F1	mg/L		-24	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.2239		mg/L		112	70 - 130
o-Xylene	<0.00200	U	0.100	0.1238		mg/L		124	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 880-18024-A-11 MSD
Matrix: Water
Analysis Batch: 32728

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	0.0549	F1 F2	0.100	0.04649	F1 F2	mg/L		-8	70 - 130	73	25
Toluene	<0.00200	U	0.100	0.09642		mg/L		96	70 - 130	11	25
Ethylbenzene	0.131	F1 F2	0.100	0.2140	F2	mg/L		83	70 - 130	66	25
m,p-Xylenes	<0.00400	U	0.200	0.2166		mg/L		108	70 - 130	3	25
o-Xylene	<0.00200	U	0.100	0.1242		mg/L		124	70 - 130	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*141*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32670/3
Matrix: Water
Analysis Batch: 32670

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			08/22/22 17:24	1

Lab Sample ID: LCS 880-32670/4
Matrix: Water
Analysis Batch: 32670

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	23.79		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-32670/5
Matrix: Water
Analysis Batch: 32670

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	23.82		mg/L		95	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-18324-A-1 MS
Matrix: Water
Analysis Batch: 32670

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	16.9	F1	25.0	45.39	F1	mg/L		114	90 - 110

Lab Sample ID: 880-18324-A-1 MSD
Matrix: Water
Analysis Batch: 32670

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	16.9	F1	25.0	45.32	F1	mg/L		114	90 - 110	0	20

Lab Sample ID: 880-18325-A-1 MS
Matrix: Water
Analysis Batch: 32670

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	29.0	F1	25.0	58.14	F1	mg/L		116	90 - 110

Lab Sample ID: 880-18325-A-1 MSD
Matrix: Water
Analysis Batch: 32670

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	29.0	F1	25.0	58.11	F1	mg/L		116	90 - 110	0	20

Lab Sample ID: MB 880-32671/3
Matrix: Water
Analysis Batch: 32671

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			08/22/22 17:24	1

Lab Sample ID: LCS 880-32671/4
Matrix: Water
Analysis Batch: 32671

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	5.045		mg/L		101	90 - 110

Lab Sample ID: LCSD 880-32671/5
Matrix: Water
Analysis Batch: 32671

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	5.051		mg/L		101	90 - 110	0	20

Lab Sample ID: 880-18324-A-1 MS
Matrix: Water
Analysis Batch: 32671

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
Nitrate as N	2.39	F1	5.00	8.650	F1	mg/L		125	90 - 110

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QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-18324-A-1 MSD
Matrix: Water
Analysis Batch: 32671

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
Nitrate as N	2.39	F1	5.00	8.649	F1	mg/L		125	90 - 110	0	20

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

Lab Sample ID: MB 870-8142/1
Matrix: Water
Analysis Batch: 8142

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<2.50	U	2.50		mg/L			08/23/22 14:39	1

Lab Sample ID: LCS 870-8142/2
Matrix: Water
Analysis Batch: 8142

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	1011		mg/L		101	80 - 120		

Lab Sample ID: LCSD 870-8142/3
Matrix: Water
Analysis Batch: 8142

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	995.0		mg/L		100	80 - 120	2	10

Lab Sample ID: 870-10338-C-1 DU
Matrix: Water
Analysis Batch: 8142

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	668			678.0		mg/L				1	10

Lab Sample ID: 880-18330-2 DU
Matrix: Water
Analysis Batch: 8142

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1040			1042		mg/L				0.4	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

GC VOA

Analysis Batch: 32728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-1	MW-5	Total/NA	Water	8021B	
880-18330-2	MW-6	Total/NA	Water	8021B	
880-18330-3	MW-1	Total/NA	Water	8021B	
880-18330-4	MW-4	Total/NA	Water	8021B	
880-18330-5	MW-3	Total/NA	Water	8021B	
880-18330-6	RW-1	Total/NA	Water	8021B	
880-18330-7	MW-2	Total/NA	Water	8021B	
880-18330-8	Dup-1	Total/NA	Water	8021B	
MB 880-32728/8	Method Blank	Total/NA	Water	8021B	
LCS 880-32728/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-32728/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-18024-A-11 MS	Matrix Spike	Total/NA	Water	8021B	
880-18024-A-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Analysis Batch: 32842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-1	MW-5	Total/NA	Water	Total BTEX	
880-18330-2	MW-6	Total/NA	Water	Total BTEX	
880-18330-3	MW-1	Total/NA	Water	Total BTEX	
880-18330-4	MW-4	Total/NA	Water	Total BTEX	
880-18330-5	MW-3	Total/NA	Water	Total BTEX	
880-18330-6	RW-1	Total/NA	Water	Total BTEX	
880-18330-7	MW-2	Total/NA	Water	Total BTEX	
880-18330-8	Dup-1	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 32670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-1	MW-5	Total/NA	Water	300.0	
880-18330-2	MW-6	Total/NA	Water	300.0	
880-18330-3	MW-1	Total/NA	Water	300.0	
880-18330-4	MW-4	Total/NA	Water	300.0	
880-18330-5	MW-3	Total/NA	Water	300.0	
880-18330-6	RW-1	Total/NA	Water	300.0	
880-18330-7	MW-2	Total/NA	Water	300.0	
880-18330-8	Dup-1	Total/NA	Water	300.0	
MB 880-32670/3	Method Blank	Total/NA	Water	300.0	
LCS 880-32670/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-32670/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-18324-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-18324-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
880-18325-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-18325-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 32671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-1	MW-5	Total/NA	Water	300.0	
880-18330-2	MW-6	Total/NA	Water	300.0	
880-18330-3	MW-1	Total/NA	Water	300.0	
880-18330-4	MW-4	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

HPLC/IC (Continued)

Analysis Batch: 32671 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-5	MW-3	Total/NA	Water	300.0	
880-18330-6	RW-1	Total/NA	Water	300.0	
880-18330-7	MW-2	Total/NA	Water	300.0	
880-18330-8	Dup-1	Total/NA	Water	300.0	
MB 880-32671/3	Method Blank	Total/NA	Water	300.0	
LCS 880-32671/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-32671/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-18324-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-18324-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 8142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-18330-1	MW-5	Total/NA	Water	SM 2540C	
880-18330-2	MW-6	Total/NA	Water	SM 2540C	
880-18330-3	MW-1	Total/NA	Water	SM 2540C	
880-18330-4	MW-4	Total/NA	Water	SM 2540C	
880-18330-5	MW-3	Total/NA	Water	SM 2540C	
880-18330-6	RW-1	Total/NA	Water	SM 2540C	
880-18330-7	MW-2	Total/NA	Water	SM 2540C	
880-18330-8	Dup-1	Total/NA	Water	SM 2540C	
MB 870-8142/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 870-8142/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 870-8142/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
870-10338-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	
880-18330-2 DU	MW-6	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: MW-5
Date Collected: 08/18/22 09:28
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-1
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			32728	08/24/22 01:00	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32670	08/22/22 18:38	CH	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 18:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: MW-6
Date Collected: 08/18/22 10:33
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-2
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			32728	08/24/22 01:26	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32670	08/22/22 18:51	CH	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 18:51	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: MW-1
Date Collected: 08/18/22 12:01
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-3
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			32728	08/24/22 01:52	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32670	08/22/22 19:03	CH	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 19:03	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: MW-4
Date Collected: 08/18/22 11:20
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-4
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			32728	08/24/22 02:17	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32670	08/22/22 19:15	CH	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 19:15	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Client Sample ID: MW-3
Date Collected: 08/18/22 11:42
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-5
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			32728	08/24/22 02:43	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		10			32671	08/22/22 20:17	CH	EET MID
Total/NA	Analysis	300.0		100			32670	08/22/22 23:47	CH	EET MID
Total/NA	Analysis	SM 2540C		1	5 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: RW-1
Date Collected: 08/18/22 12:31
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-6
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			32728	08/24/22 03:09	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 20:30	CH	EET MID
Total/NA	Analysis	300.0		20			32670	08/23/22 00:00	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: MW-2
Date Collected: 08/18/22 11:02
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-7
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			32728	08/24/22 03:34	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		10			32671	08/22/22 20:42	CH	EET MID
Total/NA	Analysis	300.0		50			32670	08/23/22 00:12	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Client Sample ID: Dup-1
Date Collected: 08/18/22 00:00
Date Received: 08/18/22 16:20

Lab Sample ID: 880-18330-8
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			32728	08/24/22 04:00	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32842	08/24/22 10:50	AJ	EET MID
Total/NA	Analysis	300.0		5			32671	08/22/22 20:54	CH	EET MID
Total/NA	Analysis	300.0		20			32670	08/23/22 00:24	CH	EET MID
Total/NA	Analysis	SM 2540C		1	5 mL	200 mL	8142	08/23/22 14:39	KH	EET DAL

Laboratory References:
EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc. Job ID: 880-18330-1
Project/Site: State C Tract #13 SDG: 19-0112-38

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	T104704400-22-24	06-30-23

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

Laboratory: Eurofins Dallas

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	T104704295-22-31	06-30-23

Method Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

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	MCAWW	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET DAL
5030B	Purge and Trap	SW846	EET 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.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract #13

Job ID: 880-18330-1
SDG: 19-0112-38

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-18330-1	MW-5	Water	08/18/22 09:28	08/18/22 16:20
880-18330-2	MW-6	Water	08/18/22 10:33	08/18/22 16:20
880-18330-3	MW-1	Water	08/18/22 12:01	08/18/22 16:20
880-18330-4	MW-4	Water	08/18/22 11:20	08/18/22 16:20
880-18330-5	MW-3	Water	08/18/22 11:42	08/18/22 16:20
880-18330-6	RW-1	Water	08/18/22 12:31	08/18/22 16:20
880-18330-7	MW-2	Water	08/18/22 11:02	08/18/22 16:20
880-18330-8	Dup-1	Water	08/18/22 00:00	08/18/22 16:20

No. 2676

18330

CHAIN-OF-CUSTODY

8/29/2022

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

Data Reported to

DATE 8/18/2022 PAGE 1 OF 1

PO#: LAB WORK ORDER#

PROJECT LOCATION OR NAME State C Tract #13

LAI PROJECT #: 19-0112-38 COLLECTOR: RW

TRRP report? ☐ Yes ☒ No

TIME ZONE Time zone/State: MST/NM

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

PRESERVATION: HCl x3, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE x2, 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 ☐ | 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 ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PERCHLORATE ☐ | CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐ | Nitrates E300

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	HCl x3	HNO_3	H_2SO_4 / NaOH	ICE x2	UNPRESERVED	BTEX	TDS	CHLORIDES	Nitrates E300	FIELD NOTES
MW-5		8/15/22	0928	W	5	X			X		X	X	X	X	Direct Bill To Apache
MW-6			1033												
MW-1			1201												
MW-4			1120												
MW-3			1142												
RW-1			1231												
MW-2			1102												
Dup-1			—												

TOTAL

RELINQUISHED BY (Signature) [signature] DATE/TIME 8/18/22 1620 RECEIVED BY (Signature) [signature]

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 4.4 THERM# IR8.26
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

880-18330 Chain of Custody

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

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Taylor, Holly	Carrier Tracking No(s):	COC No: 880-5034.1
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 #: 880-18330-1
Address: 9701 Harry Hines Blvd,	Due Date Requested: 8/24/2022			
City: Dallas	TAT Requested (days):			
State, Zip: TX, 75220				
Phone: 214-902-0300(Tel)	PO #:			
Email:	WO #:			
Project Name: State C Tract #13	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	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-5 (880-18330-1)	8/18/22	09:28 Mountain		Water			X	1	
MW-6 (880-18330-2)	8/18/22	10:33 Mountain		Water			X	1	
MW-1 (880-18330-3)	8/18/22	12:01 Mountain		Water			X	1	
MW-4 (880-18330-4)	8/18/22	11:20 Mountain		Water			X	1	
MW-3 (880-18330-5)	8/18/22	11:42 Mountain		Water			X	1	
RW-1 (880-18330-6)	8/18/22	12:31 Mountain		Water			X	1	
MW-2 (880-18330-7)	8/18/22	11:02 Mountain		Water			X	1	
Dup-1 (880-18330-8)	8/18/22	Mountain		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the 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 other instructions will be provided. Any changes 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 complicance to Eurofins Environment Testing South Central, LLC.

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: FEDEX	Date/Time	Company
Relinquished by: FEDEX	Date/Time: 8/20/22 841	Company	Received by: Kwhitlock	Date/Time: 8/20/22 0841	Company
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: 1.8 | 1.6 IR2-0.2

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-18330-1
SDG Number: 19-0112-38

Login Number: 18330
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: 880-18330-1
SDG Number: 19-0112-38

Login Number: 18330
List Number: 2
Creator: Whitlock, Kaitlyn N

List Source: Eurofins Dallas
List Creation: 08/20/22 09:35 AM

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	1.8/1.6 IR2 -0.2
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	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/29/2022 1:18:22 PM

JOB DESCRIPTION

State C Tract 13
SDG NUMBER 19-0112-38

JOB NUMBER

880-22839-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

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
12/29/2022 1:18:22 PM

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

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Laboratory Job ID: 880-22839-1
SDG: 19-0112-38

Table of Contents

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-22839-1
Project/Site: State C Tract 13 SDG: 19-0112-38

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
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/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Job ID: 880-22839-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-22839-1

Receipt
The samples were received on 12/16/2022 3:50 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 0.5°C

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_ORGFMS: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-42271 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.

Method 300_ORGFMS: The following sample(s) were received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-1 (880-22839-1), MW-2 (880-22839-2), MW-3 (880-22839-3), MW-4 (880-22839-4), MW-5 (880-22839-5), MW-6 (880-22839-6), RW-1 (880-22839-7) and DUP-1 (880-22839-8).

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: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-1

Date Collected: 12/16/22 09:47
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-1
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			12/21/22 17:29	1
Toluene	<0.00100	U	0.00100		mg/L			12/21/22 17:29	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/21/22 17:29	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/21/22 17:29	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/21/22 17:29	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/21/22 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 144*		*12/21/22 17:29*	*1*
4-Bromofluorobenzene (Surr)	*98*		*74 - 124*		*12/21/22 17:29*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/21/22 17:29*	*1*
Toluene-d8 (Surr)	*98*		*80 - 117*		*12/21/22 17:29*	*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			12/22/22 17:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**400**		5.00		mg/L			12/20/22 22:04	10
Nitrate as N	**1.52**	**H**	0.100		mg/L			12/21/22 00:49	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1450**		100		mg/L			12/20/22 17:32	1

Client Sample ID: MW-2

Date Collected: 12/16/22 11:25
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-2
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			12/20/22 21:21	1
Toluene	<0.00100	U	0.00100		mg/L			12/20/22 21:21	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/20/22 21:21	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/20/22 21:21	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/20/22 21:21	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/20/22 21:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 144*		*12/20/22 21:21*	*1*
4-Bromofluorobenzene (Surr)	*95*		*74 - 124*		*12/20/22 21:21*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/20/22 21:21*	*1*
Toluene-d8 (Surr)	*101*		*80 - 117*		*12/20/22 21:21*	*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			12/20/22 14:32	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2140**		25.0		mg/L			12/20/22 22:18	50

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-2

Lab Sample ID: 880-22839-2
Matrix: Water
Date Collected: 12/16/22 11:25
Date Received: 12/16/22 15:50

Method: MCAWW 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.341	H	0.100		mg/L			12/21/22 01:11	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4700		200		mg/L			12/20/22 17:32	1

Client Sample ID: MW-3

Lab Sample ID: 880-22839-3
Matrix: Water
Date Collected: 12/16/22 10:58
Date Received: 12/16/22 15:50

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			12/20/22 20:58	1
Toluene	<0.00100	U	0.00100		mg/L			12/20/22 20:58	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/20/22 20:58	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/20/22 20:58	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/20/22 20:58	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/20/22 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 144*		*12/20/22 20:58*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/20/22 20:58*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 131*		*12/20/22 20:58*	*1*
Toluene-d8 (Surr)	*102*		*80 - 117*		*12/20/22 20:58*	*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			12/20/22 14:32	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7180		50.0		mg/L			12/20/22 22:32	100
Nitrate as N	<1.00	U H	1.00		mg/L			12/21/22 01:32	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	11600		500		mg/L			12/20/22 17:32	1

Client Sample ID: MW-4

Lab Sample ID: 880-22839-4
Matrix: Water
Date Collected: 12/16/22 10:45
Date Received: 12/16/22 15:50

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			12/20/22 20:36	1
Toluene	<0.00100	U	0.00100		mg/L			12/20/22 20:36	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/20/22 20:36	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/20/22 20:36	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/20/22 20:36	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/20/22 20:36	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-4

Date Collected: 12/16/22 10:45
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-4
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 144*		*12/20/22 20:36*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/20/22 20:36*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 131*		*12/20/22 20:36*	*1*
Toluene-d8 (Surr)	*102*		*80 - 117*		*12/20/22 20:36*	*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			12/20/22 14:32	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**463**		10.0	mg/L			12/20/22 22:46	20
Nitrate as N	**0.634**	**H**	0.100	mg/L			12/21/22 01:54	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**792**		100	mg/L			12/20/22 17:32	1

Client Sample ID: MW-5

Date Collected: 12/16/22 10:25
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-5
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			12/21/22 18:14	1
Toluene	<0.00100	U	0.00100	mg/L			12/21/22 18:14	1
Ethylbenzene	<0.00100	U	0.00100	mg/L			12/21/22 18:14	1
m,p-Xylenes	<0.0100	U	0.0100	mg/L			12/21/22 18:14	1
o-Xylene	<0.00100	U	0.00100	mg/L			12/21/22 18:14	1
Xylenes, Total	<0.0100	U	0.0100	mg/L			12/21/22 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 144*		*12/21/22 18:14*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/21/22 18:14*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 131*		*12/21/22 18:14*	*1*
Toluene-d8 (Surr)	*102*		*80 - 117*		*12/21/22 18:14*	*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			12/22/22 17:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**132**		5.00	mg/L			12/20/22 23:27	10
Nitrate as N	<0.100	U H	0.100	mg/L			12/21/22 02:15	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**926**		50.0	mg/L			12/20/22 17:32	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-6

Date Collected: 12/16/22 10:10
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-6
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			12/21/22 18:37	1
Toluene	<0.00100	U	0.00100		mg/L			12/21/22 18:37	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/21/22 18:37	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/21/22 18:37	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/21/22 18:37	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/21/22 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*63 - 144*		*12/21/22 18:37*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/21/22 18:37*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/21/22 18:37*	*1*
Toluene-d8 (Surr)	*101*		*80 - 117*		*12/21/22 18:37*	*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			12/22/22 17:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**125**		5.00		mg/L			12/20/22 23:40	10
Nitrate as N	**0.942**	**H**	0.100		mg/L			12/21/22 02:37	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**848**		50.0		mg/L			12/20/22 17:32	1

Client Sample ID: RW-1

Date Collected: 12/16/22 10:23
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-7
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			12/21/22 18:59	1
Toluene	<0.00100	U	0.00100		mg/L			12/21/22 18:59	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/21/22 18:59	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/21/22 18:59	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/21/22 18:59	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/21/22 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 144*		*12/21/22 18:59*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/21/22 18:59*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/21/22 18:59*	*1*
Toluene-d8 (Surr)	*101*		*80 - 117*		*12/21/22 18:59*	*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			12/22/22 17:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**979**		10.0		mg/L			12/20/22 23:54	20

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: RW-1

Lab Sample ID: 880-22839-7
Matrix: Water
Date Collected: 12/16/22 10:23
Date Received: 12/16/22 15:50

Method: MCAWW 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.14	H	0.100		mg/L			12/21/22 02:58	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	864		100		mg/L			12/20/22 17:33	1

Client Sample ID: DUP-1

Lab Sample ID: 880-22839-8
Matrix: Water
Date Collected: 12/16/22 00:00
Date Received: 12/16/22 15:50

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			12/21/22 19:22	1
Toluene	<0.00100	U	0.00100		mg/L			12/21/22 19:22	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/21/22 19:22	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/21/22 19:22	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/21/22 19:22	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/21/22 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*63 - 144*		*12/21/22 19:22*	*1*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*		*12/21/22 19:22*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 131*		*12/21/22 19:22*	*1*
Toluene-d8 (Surr)	*100*		*80 - 117*		*12/21/22 19:22*	*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			12/22/22 17:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	822		10.0		mg/L			12/21/22 00:08	20
Nitrate as N	2.11	H	0.100		mg/L			12/21/22 03:20	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1620		200		mg/L			12/20/22 18:39	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

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)	(80-117)
860-39279-J-1 MS	Matrix Spike	97	99	96	95
860-39499-E-1 MS	Matrix Spike	95	99	98	97
880-22839-1	MW-1	100	98	99	98
880-22839-2	MW-2	101	95	101	101
880-22839-3	MW-3	104	94	100	102
880-22839-4	MW-4	100	94	97	102
880-22839-5	MW-5	102	94	100	102
880-22839-6	MW-6	99	94	99	101
880-22839-7	RW-1	102	94	101	101
880-22839-8	DUP-1	114	94	103	100
LCS 860-82723/3	Lab Control Sample	97	102	99	99
LCS 860-82955/3	Lab Control Sample	97	101	100	96
LCSD 860-82723/4	Lab Control Sample Dup	99	103	97	99
LCSD 860-82955/4	Lab Control Sample Dup	96	105	98	96
MB 860-82723/7	Method Blank	96	97	98	101
MB 860-82955/7	Method Blank	97	92	99	101

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: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

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

Lab Sample ID: MB 860-82723/7
Matrix: Water
Analysis Batch: 82723

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			12/20/22 14:08	1
Toluene	<0.00100	U	0.00100		mg/L			12/20/22 14:08	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/20/22 14:08	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/20/22 14:08	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/20/22 14:08	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/20/22 14:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*		*12/20/22 14:08*	*1*
4-Bromofluorobenzene (Surr)	*97*		*74 - 124*		*12/20/22 14:08*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*12/20/22 14:08*	*1*
Toluene-d8 (Surr)	*101*		*80 - 117*		*12/20/22 14:08*	*1*

Lab Sample ID: LCS 860-82723/3
Matrix: Water
Analysis Batch: 82723

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	0.04830		mg/L		97	75 - 125		
Toluene			0.0500	0.04858		mg/L		97	70 - 130		
Ethylbenzene			0.0500	0.04869		mg/L		97	75 - 125		
m,p-Xylenes			0.0500	0.04862		mg/L		97	75 - 125		
o-Xylene			0.0500	0.04803		mg/L		96	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*63 - 144*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 117*

Lab Sample ID: LCSD 860-82723/4
Matrix: Water
Analysis Batch: 82723

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	0.04360		mg/L		87	75 - 125	10	25
Toluene			0.0500	0.04392		mg/L		88	70 - 130	10	25
Ethylbenzene			0.0500	0.04387		mg/L		88	75 - 125	10	25
m,p-Xylenes			0.0500	0.04447		mg/L		89	75 - 125	9	25
o-Xylene			0.0500	0.04378		mg/L		88	75 - 125	9	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*63 - 144*
4-Bromofluorobenzene (Surr)	*103*		*74 - 124*
Dibromofluoromethane (Surr)	*97*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 117*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

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

Lab Sample ID: 860-39279-J-1 MS
Matrix: Water
Analysis Batch: 82723

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	<0.00100	U	0.0500	0.04808		mg/L		96	66 - 142
Toluene	<0.00100	U	0.0500	0.04718		mg/L		94	59 - 139
Ethylbenzene	<0.00100	U	0.0500	0.04758		mg/L		95	75 - 125
m,p-Xylenes	<0.0100	U	0.0500	0.04827		mg/L		97	75 - 125
o-Xylene	<0.00100	U	0.0500	0.04686		mg/L		94	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*63 - 144*
4-Bromofluorobenzene (Surr)	*99*		*74 - 124*
Dibromofluoromethane (Surr)	*96*		*75 - 131*
Toluene-d8 (Surr)	*95*		*80 - 117*

Lab Sample ID: MB 860-82955/7
Matrix: Water
Analysis Batch: 82955

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			12/21/22 15:08	1
Toluene	<0.00100	U	0.00100		mg/L			12/21/22 15:08	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/21/22 15:08	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/21/22 15:08	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/21/22 15:08	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/21/22 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*63 - 144*		*12/21/22 15:08*	*1*
4-Bromofluorobenzene (Surr)	*92*		*74 - 124*		*12/21/22 15:08*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/21/22 15:08*	*1*
Toluene-d8 (Surr)	*101*		*80 - 117*		*12/21/22 15:08*	*1*

Lab Sample ID: LCS 860-82955/3
Matrix: Water
Analysis Batch: 82955

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	0.04982		mg/L		100	75 - 125
Toluene			0.0500	0.04794		mg/L		96	70 - 130
Ethylbenzene			0.0500	0.05013		mg/L		100	75 - 125
m,p-Xylenes			0.0500	0.05045		mg/L		101	75 - 125
o-Xylene			0.0500	0.04759		mg/L		95	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*63 - 144*
4-Bromofluorobenzene (Surr)	*101*		*74 - 124*
Dibromofluoromethane (Surr)	*100*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 117*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

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

Lab Sample ID: LCSD 860-82955/4
Matrix: Water
Analysis Batch: 82955

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	0.04058		mg/L		81	75 - 125	20	25
Toluene			0.0500	0.04009		mg/L		80	70 - 130	18	25
Ethylbenzene			0.0500	0.04048		mg/L		81	75 - 125	21	25
m,p-Xylenes			0.0500	0.04089		mg/L		82	75 - 125	21	25
o-Xylene			0.0500	0.04111		mg/L		82	75 - 125	15	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*
4-Bromofluorobenzene (Surr)	*105*		*74 - 124*
Dibromofluoromethane (Surr)	*98*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 117*

Lab Sample ID: 860-39499-E-1 MS
Matrix: Water
Analysis Batch: 82955

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	<0.00100	U	0.0500	0.04119		mg/L		82	66 - 142
Toluene	<0.00100	U	0.0500	0.04167		mg/L		83	59 - 139
Ethylbenzene	<0.00100	U	0.0500	0.04285		mg/L		86	75 - 125
m,p-Xylenes	<0.0100	U	0.0500	0.04197		mg/L		84	75 - 125
o-Xylene	<0.00100	U	0.0500	0.04170		mg/L		83	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 144*
4-Bromofluorobenzene (Surr)	*99*		*74 - 124*
Dibromofluoromethane (Surr)	*98*		*75 - 131*
Toluene-d8 (Surr)	*97*		*80 - 117*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-42271/3
Matrix: Water
Analysis Batch: 42271

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			12/19/22 19:55	1

Lab Sample ID: LCS 880-42271/4
Matrix: Water
Analysis Batch: 42271

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	5.020		mg/L		100	90 - 110

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-42271/5
Matrix: Water
Analysis Batch: 42271

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	4.955		mg/L		99	90 - 110	1	20

Lab Sample ID: 880-22961-A-1 MS
Matrix: Water
Analysis Batch: 42271

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
Nitrate as N	<0.100	U F1	5.00	4.037	F1	mg/L		81	90 - 110

Lab Sample ID: 880-22961-A-1 MSD
Matrix: Water
Analysis Batch: 42271

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
Nitrate as N	<0.100	U F1	5.00	4.093	F1	mg/L		82	90 - 110	1	20

Lab Sample ID: MB 880-42272/3
Matrix: Water
Analysis Batch: 42272

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			12/19/22 19:55	1

Lab Sample ID: LCS 880-42272/4
Matrix: Water
Analysis Batch: 42272

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	24.35		mg/L		97	90 - 110

Lab Sample ID: LCSD 880-42272/5
Matrix: Water
Analysis Batch: 42272

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	24.49		mg/L		98	90 - 110	1	20

Lab Sample ID: 880-22961-A-1 MS
Matrix: Water
Analysis Batch: 42272

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	1.87		25.0	25.62		mg/L		95	90 - 110

Lab Sample ID: 880-22961-A-1 MSD
Matrix: Water
Analysis Batch: 42272

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	1.87		25.0	26.38		mg/L		98	90 - 110	3	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

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

Lab Sample ID: MB 880-42350/1
Matrix: Water
Analysis Batch: 42350

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			12/20/22 17:32	1

Lab Sample ID: LCS 880-42350/2
Matrix: Water
Analysis Batch: 42350

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 880-42350/3
Matrix: Water
Analysis Batch: 42350

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	983.0		mg/L		98	80 - 120	0	10

Lab Sample ID: 880-22820-B-6 DU
Matrix: Water
Analysis Batch: 42350

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3160			2888		mg/L				9	10

Lab Sample ID: MB 880-42353/1
Matrix: Water
Analysis Batch: 42353

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			12/20/22 18:39	1

Lab Sample ID: LCS 880-42353/2
Matrix: Water
Analysis Batch: 42353

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	1025		mg/L		103	80 - 120		

Lab Sample ID: LCSD 880-42353/3
Matrix: Water
Analysis Batch: 42353

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	1132		mg/L		113	80 - 120	10	10

Lab Sample ID: 880-22839-8 DU
Matrix: Water
Analysis Batch: 42353

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

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1620			1784		mg/L				10	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

GC/MS VOA

Analysis Batch: 82723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-2	MW-2	Total/NA	Water	8260C	
880-22839-3	MW-3	Total/NA	Water	8260C	
880-22839-4	MW-4	Total/NA	Water	8260C	
MB 860-82723/7	Method Blank	Total/NA	Water	8260C	
LCS 860-82723/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-82723/4	Lab Control Sample Dup	Total/NA	Water	8260C	
860-39279-J-1 MS	Matrix Spike	Total/NA	Water	8260C	

Analysis Batch: 82790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-2	MW-2	Total/NA	Water	Total BTEX	
880-22839-3	MW-3	Total/NA	Water	Total BTEX	
880-22839-4	MW-4	Total/NA	Water	Total BTEX	

Analysis Batch: 82955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-1	MW-1	Total/NA	Water	8260C	
880-22839-5	MW-5	Total/NA	Water	8260C	
880-22839-6	MW-6	Total/NA	Water	8260C	
880-22839-7	RW-1	Total/NA	Water	8260C	
880-22839-8	DUP-1	Total/NA	Water	8260C	
MB 860-82955/7	Method Blank	Total/NA	Water	8260C	
LCS 860-82955/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-82955/4	Lab Control Sample Dup	Total/NA	Water	8260C	
860-39499-E-1 MS	Matrix Spike	Total/NA	Water	8260C	

Analysis Batch: 83238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-1	MW-1	Total/NA	Water	Total BTEX	
880-22839-5	MW-5	Total/NA	Water	Total BTEX	
880-22839-6	MW-6	Total/NA	Water	Total BTEX	
880-22839-7	RW-1	Total/NA	Water	Total BTEX	
880-22839-8	DUP-1	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 42271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-1	MW-1	Total/NA	Water	300.0	
880-22839-2	MW-2	Total/NA	Water	300.0	
880-22839-3	MW-3	Total/NA	Water	300.0	
880-22839-4	MW-4	Total/NA	Water	300.0	
880-22839-5	MW-5	Total/NA	Water	300.0	
880-22839-6	MW-6	Total/NA	Water	300.0	
880-22839-7	RW-1	Total/NA	Water	300.0	
880-22839-8	DUP-1	Total/NA	Water	300.0	
MB 880-42271/3	Method Blank	Total/NA	Water	300.0	
LCS 880-42271/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-42271/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-22961-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-22961-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

HPLC/IC

Analysis Batch: 42272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-1	MW-1	Total/NA	Water	300.0	
880-22839-2	MW-2	Total/NA	Water	300.0	
880-22839-3	MW-3	Total/NA	Water	300.0	
880-22839-4	MW-4	Total/NA	Water	300.0	
880-22839-5	MW-5	Total/NA	Water	300.0	
880-22839-6	MW-6	Total/NA	Water	300.0	
880-22839-7	RW-1	Total/NA	Water	300.0	
880-22839-8	DUP-1	Total/NA	Water	300.0	
MB 880-42272/3	Method Blank	Total/NA	Water	300.0	
LCS 880-42272/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-42272/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-22961-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-22961-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 42350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-1	MW-1	Total/NA	Water	SM 2540C	
880-22839-2	MW-2	Total/NA	Water	SM 2540C	
880-22839-3	MW-3	Total/NA	Water	SM 2540C	
880-22839-4	MW-4	Total/NA	Water	SM 2540C	
880-22839-5	MW-5	Total/NA	Water	SM 2540C	
880-22839-6	MW-6	Total/NA	Water	SM 2540C	
880-22839-7	RW-1	Total/NA	Water	SM 2540C	
MB 880-42350/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-42350/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-42350/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-22820-B-6 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 42353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22839-8	DUP-1	Total/NA	Water	SM 2540C	
MB 880-42353/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-42353/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-42353/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-22839-8 DU	DUP-1	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-1

Date Collected: 12/16/22 09:47
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-1
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	82955	12/21/22 17:29	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			83238	12/22/22 17:09	JBS	EET HOU
Total/NA	Analysis	300.0		10	50 mL	50 mL	42272	12/20/22 22:04	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 00:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Client Sample ID: MW-2

Date Collected: 12/16/22 11:25
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-2
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	82723	12/20/22 21:21	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			82790	12/20/22 14:32	JBS	EET HOU
Total/NA	Analysis	300.0		50	50 mL	50 mL	42272	12/20/22 22:18	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 01:11	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Client Sample ID: MW-3

Date Collected: 12/16/22 10:58
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-3
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	82723	12/20/22 20:58	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			82790	12/20/22 14:32	JBS	EET HOU
Total/NA	Analysis	300.0		100	50 mL	50 mL	42272	12/20/22 22:32	CH	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	42271	12/21/22 01:32	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Client Sample ID: MW-4

Date Collected: 12/16/22 10:45
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-4
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	82723	12/20/22 20:36	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			82790	12/20/22 14:32	JBS	EET HOU
Total/NA	Analysis	300.0		20	50 mL	50 mL	42272	12/20/22 22:46	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 01:54	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Client Sample ID: MW-5

Date Collected: 12/16/22 10:25
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-5
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	82955	12/21/22 18:14	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			83238	12/22/22 17:09	JBS	EET HOU
Total/NA	Analysis	300.0		10	50 mL	50 mL	42272	12/20/22 23:27	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 02:15	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Client Sample ID: MW-6

Date Collected: 12/16/22 10:10
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-6
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	82955	12/21/22 18:37	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			83238	12/22/22 17:09	JBS	EET HOU
Total/NA	Analysis	300.0		10	50 mL	50 mL	42272	12/20/22 23:40	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 02:37	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	42350	12/20/22 17:32	SMC	EET MID

Client Sample ID: RW-1

Date Collected: 12/16/22 10:23
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-7
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	82955	12/21/22 18:59	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			83238	12/22/22 17:09	JBS	EET HOU
Total/NA	Analysis	300.0		20	50 mL	50 mL	42272	12/20/22 23:54	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 02:58	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	42350	12/20/22 17:33	SMC	EET MID

Client Sample ID: DUP-1

Date Collected: 12/16/22 00:00
Date Received: 12/16/22 15:50

Lab Sample ID: 880-22839-8
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	82955	12/21/22 19:22	JBS	EET HOU
Total/NA	Analysis	Total BTEX		1			83238	12/22/22 17:09	JBS	EET HOU
Total/NA	Analysis	300.0		20	50 mL	50 mL	42272	12/21/22 00:08	CH	EET MID
Total/NA	Analysis	300.0		1	50 mL	50 mL	42271	12/21/22 03:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	42353	12/20/22 18:39	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

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Job ID: 880-22839-1
Project/Site: State C Tract 13
SDG: 19-0112-38

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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	T104704215-22-48	06-30-23

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. Job ID: 880-22839-1
Project/Site: State C Tract 13 SDG: 19-0112-38

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	MCAWW	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030C	Purge and Trap	SW846	EET HOU

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.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: State C Tract 13

Job ID: 880-22839-1
SDG: 19-0112-38

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-22839-1	MW-1	Water	12/16/22 09:47	12/16/22 15:50
880-22839-2	MW-2	Water	12/16/22 11:25	12/16/22 15:50
880-22839-3	MW-3	Water	12/16/22 10:58	12/16/22 15:50
880-22839-4	MW-4	Water	12/16/22 10:45	12/16/22 15:50
880-22839-5	MW-5	Water	12/16/22 10:25	12/16/22 15:50
880-22839-6	MW-6	Water	12/16/22 10:10	12/16/22 15:50
880-22839-7	RW-1	Water	12/16/22 10:23	12/16/22 15:50
880-22839-8	DUP-1	Water	12/16/22 00:00	12/16/22 15:50

22839 No. 2874

CHAIN-OF-CUSTODY

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

DATE 12/16/2022 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME State C Tract 13

LAI PROJECT # 19-0112-38 COLLECTOR SSG/RN

Data Reported to

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State: MNT / NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl x3	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
MW-1		12/16/22	0947	W	5	X			X		X	Bill direct to Apache, send report to LAI
MW-2		12/16/22	1125	W	5	X			X		X	
MW-3		12/16/22	1058	W	5	X			X		X	
MW-4		12/16/22	1045	W	5	X			X		X	
MW-5		12/16/22	1025	W	5	X			X		X	
MW-6		12/16/22	1010	W	5	X			X		X	
RW-1		12/16/22	1023	W	5	X			X		X	
Dup-1		12/16/22	—	W	5	X			X		X	

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 ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ | NITRATE

TOTAL 8

880-22839 Chain of Custody

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	12/16/22 1550	[signature]
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 0.8/0.5 THERM# IR2 #30
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

12/29/2022

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-5964.1
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 #: 880-22839-1
Address: 4145 Greenbriar Dr	Due Date Requested: 12/22/2022			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: State C Tract 13	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)	8280C/5030C BTEX	Total_BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-1 (880-22839-1)	12/16/22	09:47 Mountain		Water			X	X	2	
MW-2 (880-22839-2)	12/16/22	11:25 Mountain		Water			X	X	2	
MW-3 (880-22839-3)	12/16/22	10:58 Mountain		Water			X	X	2	
MW-4 (880-22839-4)	12/16/22	10:45 Mountain		Water			X	X	2	
MW-5 (880-22839-5)	12/16/22	10:25 Mountain		Water			X	X	2	
MW-6 (880-22839-6)	12/16/22	10:10 Mountain		Water			X	X	2	
RW-1 (880-22839-7)	12/16/22	10:23 Mountain		Water			X	X	2	
DUP-1 (880-22839-8)	12/16/22	Mountain		Water			X	X	2	

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 shipment is forwarded under chain-of-custody. If the 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 other instructions will be provided. Any changes 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
			FedEx		
Relinquished by: FedEx	Date/Time:	Company	Received by:	Date/Time: 12/20/2022 11 16	Company EX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Temp. IR ID:HOU-343
C/F:+0.3 3.4
Corrected Temp: 3.7

Ver: 06/08/2021

Page 25 of 27

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-22839-1
SDG Number: 19-0112-38

Login Number: 22839
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: 880-22839-1
SDG Number: 19-0112-38

Login Number: 22839
List Number: 2
Creator: Palmar, Pedro

List Source: Eurofins Houston
List Creation: 12/20/22 02:20 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?	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").	True	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator:	OGRID:
APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	873
	Action Number: 416268
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	2022-Semiannual-JD-GW-Report_State-C-Tract-13 has been accepted for the record. Staff change-over occurred within Apache, thus reports have been received for calendar years 2022 and 2023 as of 01/02/2024. Reports are now received and responses sent to Barrett Bole. App ID: 416268	1/7/2025