REVIEWED
By Mike Buchanan at 2:13 pm, Dec 02, 2024

November 13,

2024

Incident ID: nPAC0631334833
2024 3rd Quarter Groundwater Monitoring Report
Northeast Drinkard Unit #527
Lea County, New Mexico

Review of the 3rd Quarter 2024 Groundwater Monitoring Report for Norheast Drinkard Unit 527: content satisfactory.
1. Abatement Closure Report was submitted in August 2024 and is currently under review by the OCD.
2. It has been observed that MW-1, MW-2, and MW-3 have not been sampled, nor do any of the wells contain information other than being "Dry," and the well diameter of 2 inches. If there is no information on these three wells in any other document in the incident file that demonstrates eight (8) consecutive sampling events, or other approval for a lesser number of samples, Apache will be required to submit a variance under part 29 for the lack of information for these wells, or drill each well deeper until groundwater is encountered for sampling, in order to obtain abatement closure for this site. If there is other information on the history of these wells and data that hasn't been submitted, please upload the information into the incident file within sixty (60) days.
3. Please continue as planned by sampling MW-4 and MW-5 and submit the next quarterly report by February 1, 2025.
4. Include defined groundwater direction, this needs to have been established by at least three monitoring wells, but is not in report other than what's apparent.

Apache

Apache Corporation
303 Veterans Airpark Ln
Midland, Texas, 79705

Prepared by:

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld Street, Suite 202
Midland, Texas 79701
(432) 687-0901

Mark J. Larson
Certified Profession Geologist #10490

Daniel St. Germain

Daniel St. Germain
Staff Geologist

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1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this 2024 third quarter groundwater monitoring 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 details the results of groundwater monitoring performed at the Northeast Drinkard Unit (NEDU) 527 (Site) on October 15, 2024. The Site is located in Unit L (NW/4, SW/4), Section 10, Township 21 South, Range 37 East, in Lea County, New Mexico. The geodetic position is North 32.489811° and West -103.158592°.

The following activities occurred on October 15, 2024:

- Gauged depth to groundwater in five monitor wells (MW-1 through MW-5).
- Purged and collected groundwater samples from two monitor wells (MW-4 and MW-5) for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), total dissolved solids (TDS), and chloride.

The following observations are documented in this report:

- Three pre-existing monitoring wells (MW-1, MW-2, and MW-3), installed by Trinity Oilfield Services, were dry.
- Depth to groundwater was recorded at 57.40 feet below ground surface (bgs) in MW-4 and 55.96 feet bgs in MW-5.
- The groundwater elevation was recorded at 3,406.09 feet above mean sea level (MSL) at MW-4 and 3,406.10 above MSL at MW-5.
- No significant change in groundwater elevation was observed between the second and third quarters of 2024.
- BTEX concentrations in groundwater samples from monitoring wells MW-4 and MW-5 were below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (NMWQCC) human health standards.
- Chloride and TDS concentrations in groundwater samples from monitoring wells MW-4 and MW-5 were below the NMWQCC domestic water quality standard of 250 mg/L and 1,000 mg/L, respectively.

Apache proposes the following:

- Since BTEX, chloride and TDS concentration have historically been below the NMWQCC standards for over two (2) years and more than eight (8) consecutive quarters, Apache requests NMOCD approval to discontinue groundwater monitoring and proceed with plugging the monitoring wells according to the NMOSE requirements.
- Apache will continue groundwater monitoring frequency on a quarterly (4 times per year) basis until notification has been received from the NMOCD regarding the final groundwater monitoring and closure report.
- Apache will provide notice to the NMOCD through the web portal at least 48 hours prior to each monitoring event.

2.0 INTRODUCTON

LAI has prepared this 2024 third quarter groundwater monitoring report on behalf of Apache for submittal to the NMOCD District I in Hobbs, and Santa Fe, New Mexico. This report details the second quarter of 2024 groundwater monitoring performed at NEDU #527 on October 15, 2024. Notification of the groundwater sampling event was submitted to the NMOCD via the web portal on October 11, 2024. The Site is located in Unit L (NW/4, SW/4), Section 10, Township 21 South, Range 37 East, in Lea County New, Mexico. The geodetic position is North 32.489811° and West -103.158592°. Figure 1 presents a topographic map. Figure 2 presents an aerial map. Figure 3 presents a site drawing. Appendix A presents NMOCD communications.

2.1 Background

A produced water release occurred due to a compromised liner during excavation of the drilling pit. An unknown volume of brine water migrated beneath the pit liner and into the underlying soil. On July 19, 2006, notice was given to Mr. Larry Johnson (NMOCD District 1) and Mr. Glen VonGonten (NMOCD Santa Fe) by Mr. Jerry Brian with Hungry Horse Environmental (Hungry Horse). The surface owner is the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). On November 6, 2006, Hungry Horse, on behalf of Apache, submitted the initial C-141 to NMOCD, which was approved on November 9, 2006, and assigned remediation permit number 1RP-1113 and incident tracking number nPAC06313334833. Appendix A presents the initial C-141.

Hungry Horse commenced remediation of the drilling pit on July 23, 2006, and excavated soil to approximately ten (10) feet bgs. On July 31, 2006, Hungry Horse personnel collected soil samples from the bottom of the excavation (northeast, center and southeast) at about ten (10) feet bgs and near the southwest corner at about twelve (12) feet bgs. Cardinal Laboratories, Hobbs, New Mexico, analyzed the soil samples and reported chloride concentrations between 2,255 parts per million (PPM) near the center of the excavation at ten (10) feet bgs and 26,872 PPM in the southwest sample at twelve (12) feet bgs. Between July 31, 2006, and September 6, 2006, Hungry Horse deepened the excavation between 14 feet bgs and 19 feet bgs. On August 8, 2006, a bottom soil sample collected near the center of the excavation (C. WRK.PIT) from 14 feet bgs, reported chloride at 176 milligrams pr kilogram (mg/Kg). On September 6, 2006, bottom samples reported chloride at 224 mg/Kg (E – Working Pit – 19’ bgs), 288 mg/Kg (NE – 19’ bgs) and 1,935 PPM (SE – 19’ bgs). Hungry Horse hauled approximately 9,000 cubic yards of soil to Sundance Services, Inc., located near Eunice, New Mexico.

Between September 14 and 19, 2006, Hungry Horse personnel drilled four (4) boreholes (BH #1 through BH #4) in the bottom of the excavation for vertical delineation of chloride. Borehole #1 was drilled near the northeast (NE) quadrant. Borehole #2 was drilled near the southeast quadrant. Borehole #3 was drilled near the southwest quadrant. Borehole #4 was drilled near the northwest quadrant. Soil samples were collected every 5 feet using truck-mounted hollow stem auger rig and split spoon sampler. Boreholes BH #1 and BH #2 were drilled to 35 feet bgs with chloride reported in the

bottom samples at 48 mg/Kg and 128 mg/Kg, respectively. A soil sample from Borehole BH #3 at 50 feet bgs reported chloride at 1,695 mg/Kg. Borehole #3 advanced to 62 feet bgs where groundwater was encountered. A groundwater sample was collected by Hungry Horse and was analyzed for chloride by Cardinal Laboratories in Hobbs, New Mexico. The laboratory reported chloride in the groundwater sample at 2,007 milligrams per liter (mg/L). Borehole BH #4 was drilled to 55 feet bgs with the bottom sample reporting chloride at 16 mg/Kg. According to project documents (Trinity Oilfield Services and Rental, LLC, June 2019) the boreholes were plugged and abandoned, the floor of the excavation was "double-capped" with two (2) plastic liners to inhibit vertical migration of contaminants below 21 feet bgs.

On September 19, 2006, NMOCD was informed of the groundwater impact, and issued abatement permit number AP-068, on November 29, 2006, that required Apache to submit an abatement plan in accordance with NMOCD Rule 19 (19.15.1.19 NMAC) for groundwater contamination from the drilling pit at NEDU #527. On February 15, 2007, Hungry Horse submitted the Stage 1 Groundwater Abatement Plan ("Apache Corporation Stage 1 Ground Water Abatement Plan (AP068) NEDU #527 Well Site API # 30-025-37242, February 14, 2007"). The groundwater abatement plan included among other things installing three (3) monitoring wells and collecting information to satisfy Stage 1 abatement plan requirements. No correspondence could be located to confirm NMOCD approval or denial for the Stage 1 groundwater abatement plan.

Hungry Horse installed three (3) monitoring wells (MW#1, MW#2, and MW#3) at the approximate locations presented on Plate 4 (Site Sampling Map) of the Stage 1 Groundwater Abatement Plan. No drilling or completion details are available for monitoring wells MW-1, MW-2 and MW-3.

On June 5, 2019, Trinity Oilfield Services & Rentals, LLC, (Trinity) assumed remediation activities from Hungry Horse. Trinity prepared a document titled, "Addendum to Stage 1 Groundwater Abatement Plan NEDU #527, Lea County, New Mexico, June 2019" that reported observing three (3) monitoring wells during a visit to the Site on June 10, 2019. Trinity also reported the monitoring wells as being constructed with 2-inch schedule 40 PVC. No steel locking cover or concrete pad was observed at the wells. Trinity reported the wells with depths between 57.63 and 59.27 feet bgs and concluded sediment buildup in the wells were completed above the water table.

Trinity proposed to remove the PVC casings from the three (3) wells (MW#1, MW#2, and MW#3), reenter, advance the well bores to approximately 75 feet bgs, and recomplete with 2-inch schedule 40 PVC, concrete pads, J-plugs and locking steel monuments. Trinity also proposed to install a monitoring well (MW-4) about 45 feet south and southeast of Borehole #3, to preserve the integrity and impermeability of the "double-cap" liner system, and well MW-5, about 180 feet downgradient (south and southeast) from well MW-4 near the south edge of the caliche well pad. The proposed depths for the monitoring wells were 75 feet bgs. Trinity proposed submitting a Stage 2 Groundwater Abatement Plan following four (4) consecutive quarters of groundwater monitoring. The "Addendum to Stage 1 Groundwater Abatement Plan NEDU #527, Lea County, New Mexico, June 2019".

Monitoring wells MW-4 and MW-5 were not drilled, and the addendum abatement plan was not found in the NMOCD online imaging files for 1RP-1113, incident tracking number nPAC06313334833 or abatement permit AP-068.

2.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,467 feet above mean sea level (msl).
- The topography slopes gently towards the east.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes this site as "Low Risk Potential."
- The soils are designated Simona find sandy loam, 0 to 3 percent slopes, consisting of 8 inches of fine sandy loam, underlain by 8 to 16 inches of gravelly fine sandy loam, and 16 to 26 inches of cemented material (caliche).
- The surface geology consists of Holocene-age light brown to reddish windblown cover sand mostly derived from Gatuna Formation (Late Cretaceous).
- Groundwater occurs in the Tertiary-age Ogallala Formation between about 60 to 63 feet bgs based on depth to groundwater measurements from monitoring wells MW-4 and MW-5 installed near the excavation.

Appendix B presents the Karst Potential Map

3.0 GROUNDWATER INVESTIGATION

3.1 Permitting

On February 6, 2020, LAI prepared permit applications for Water Monitoring Easement (WM-673) for Apache to submit to NMSLO and NMOSE to drill and complete monitoring wells MW-4 (CP-1868 POD1) and MW-5 (CP-1868 POD2). The NMSLO Water Monitoring Easement (WM-673) was approved on April 12, 2021. The NMOSE permits (CP-1868 POD1 and POD2) were approved on May 14, 2021. Appendix C presents the NMSLO and NMOSE permits.

3.2 Monitoring Well Installations

On May 25, 2021, Scarborough Drilling, Inc. (SDI), under the supervision of LAI, installed monitoring wells MW-4 and MW-5 at the proposed locations. SDI advanced five (5) inch diameter borings with an air rotary rig to depths of approximately 76.50 (MW-4) and 76.00 (MW-5) feet bgs. The monitoring wells were completed with 2-inch schedule 40 threaded PVC casing and 20 feet of 0.010-inch factory slotted screen. The well screen was placed above and below the groundwater level observed during drilling. Graded silica sand was positioned around the screen to about two (2) feet above the screen. Sodium bentonite chips were placed above the sand to about 1-foot bgs. Both wells were secured with locking steel sleeves anchored in concrete. Appendix D presents the monitoring well completion logs.

On June 1, 2021, monitoring wells MW-4 and MW-5 were developed using an electric submersible pump to remove any sediment disturbed during drilling and well installation. Approximately 75 gallons of water were removed from each monitoring well and disposed of in a NMOCD permitted commercial Class II disposal well (SWD) operated by Basic Energy Services. Table 1 presents the monitoring well completion and gauging summary.

West Company, a State of New Mexico licensed Professional Land Surveyor (License Number 23263) surveyed the monitoring wells for location and elevation including top of casing and natural ground surface. Figure 3 presents Site drawing with monitoring well locations.

4.0 GROUNDWATER MONITORING

4.1 Depth to Groundwater and Groundwater Potentiometric Surface Elevation

On October 15, 2024, LAI personnel gauged monitoring wells MW-1 through MW-5 for light nonaqueous phase liquid (LNAPL) and depth to groundwater. Monitoring wells MW-1, MW-2 and MW-3 were dry. LNAPL was not detected in monitoring wells MW-4 and MW-5. Groundwater was recorded at 57.40 feet bgs in MW-4 and 55.96 feet bgs in MW-5.

The groundwater potentiometric surface elevation was calculated at 3,406.09 feet above MSL at MW-4 and 3,406.10 above MSL at MW-5. Apparent groundwater flow direction is to the southeast at a gradient of about 0.0001 ft/ft. No significant change in the groundwater potentiometric surface elevation or gradient was noted between the second and third quarters of 2024 groundwater monitoring events. Figure 4 presents the potentiometric surface map for October 15, 2024.

4.2 Groundwater Samples and Analysis

On October 15, 2024, LAI personnel collected groundwater samples from monitoring wells MW-4 and MW-5. The groundwater samples were collected after purging three (3) well volumes of groundwater from both monitoring wells with dedicated disposable polyethylene bailers.

The samples were transferred to labeled laboratory containers and delivered under chain-of-custody and preservation to Eurofins Laboratories (Eurofins), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, in Midland, Texas. Xenco analyzed the samples for BTEX according to EPA SW-846 Method SW-8021B, and TDS by EPA Method SM 2540C, chloride by EPA Method 300. A duplicate sample, Dup-1, was collected from MW-5 for laboratory quality assurance and quality control (QA/QC).

4.2.1 Organic Analysis

BTEX concentrations were below the analytical method RL and NMWQCC human health standards in groundwater samples collected from MW-4 and MW-5. The results are consistent with previous groundwater monitoring events.

4.2.2 Inorganic Analysis

Chloride concentrations were reported at 84.1 mg/L and 169 mg/L in the samples collected from MW-4 and MW-5, respectively. Chloride concentrations in both monitoring wells were below the NMWQCC domestic water quality standard of 250 mg/L. Chloride was reported at 160 mg/L in the QA/QC sample, DUP-1, and was a 5.3 percent decrease of the original chloride value of 169 mg/L reported for MW-5. No data quality exceptions were noted in Eurofins case narratives. Figure 5 presents the chloride concentration map for October 15, 2024.

TDS concentrations were reported at 486 mg/L and 588 mg/L in the samples collected from MW-4 and MW-5, respectively. TDS concentrations in both monitoring wells were below the NMWQCC domestic water quality standard of 1,000 mg/L. TDS was reported at 576 mg/L in the QA/QC sample, DUP-1, representing a 2 percent decrease of the original TDS value of 588 mg/L reported for MW-5. No data quality exceptions were noted in Xenco case narratives. Table 2 presents the laboratory analytical summary. Figure 6 presents the TDS concentration map for October 15, 2024. Appendix F presents the chloride control chart. Appendix G presents the TDS control chart. Appendix H presents the laboratory report.

5.0 CONCLUSIONS

The following conclusions are documented in this report:

- No significant changes in depth to groundwater, groundwater gradient, or potentiometric surface elevation were observed during this monitoring period.
- BTEX concentrations were below both analytical method RL and NMWQCC human health standards in samples collected from MW-4 and MW-5.
- Chloride and TDS concentrations were below the NMWQCC domestic water quality standard of 250 mg/L and 1,000 mg/L, respectively, in samples collected from MW-4 and MW-5.

6.0 RECOMMENDATIONS

Apache proposes the following:

- Since BTEX, chloride and TDS concentrations have been reported below the NMWQCC standards for over eight (8) consecutive quarters or two (2) years, Apache requests approval to discontinue groundwater monitoring and plug the monitoring wells according to the NMOSE requirements.
- Apache will continue groundwater monitoring frequency on a quarterly (4 times per year) basis until notification has been received from the NMOCD regarding the final groundwater monitoring and closure report submitted to the NMOCD on August 14, 2024 (Submission ID: 373747).
- Apache will provide notice to the NMOCD through the web portal at least 48 hours prior to each monitoring event.

Tables

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corportaion, NEDU 527
Incident ID: nPAC0631334833
Lea County, New Mexico

Well Information									Groundwater Data				
Well ID	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Water Column Height (Feet)	Groundwater Elevation (Feet AMSL)
*MW-1	---	---	---	2	---	---	---	---			Dry		
*MW-2	---	---	---	2	---	---	---	---			Dry		
*MW-3	---	---	---	2	---	---	---	---			Dry		
MW-4	05/25/2021	76.50	76.50	2	3464.39	55.82 - 75.82	3.50	3,466.99	06/01/2021	61.81	58.31	14.69	3,405.18
									10/12/2021	60.57	57.07	15.93	3,406.42
									12/21/2021	60.60	57.10	15.90	3,406.39
									03/02/2022	60.68	57.18	15.82	3,406.31
									05/24/2022	60.71	57.21	15.79	3,406.28
									08/15/2022	60.72	57.22	15.78	3,406.27
									12/12/2022	60.40	56.90	16.10	3,406.59
									03/09/2023	60.79	57.29	15.71	3,406.20
									06/06/2023	60.85	57.35	15.65	3,406.14
									09/05/2023	60.83	57.33	15.67	3,406.16
									12/19/2023	60.82	57.32	15.68	3,406.17
									03/13/2024	60.82	57.32	15.68	3,406.17
									07/25/2024	60.91	57.41	15.59	3,406.08
									10/15/2024	60.9	57.40	15.60	3,406.09
MW-5	05/25/2021	76.00	76.00	2	3463.77	55.82 - 75.82	4.00	3,466.06	06/01/2021	61.70	57.70	14.30	3,404.36
									10/12/2021	59.64	55.64	16.36	3,406.42

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corportaion, NEDU 527
Incident ID: nPAC0631334833
Lea County, New Mexico

Well Information									Groundwater Data				
Well ID	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (Feet TOC)	Depth to Water (Feet BGS)	Water Column Height (Feet)	Groundwater Elevation (Feet AMSL)
									12/21/2021	59.65	55.65	16.35	3,406.41
									03/02/2022	59.72	55.72	16.28	3,406.34
									05/24/2022	59.74	55.74	16.26	3,406.32
									08/15/2022	59.75	55.75	16.25	3,406.31
									12/12/2022	59.74	55.74	16.26	3,406.32
									03/09/2023	59.86	55.86	16.14	3,406.20
									06/06/2023	59.91	55.91	16.09	3,406.15
									09/05/2023	59.91	55.91	16.09	3,406.15
									12/19/2023	59.88	55.88	16.12	3,406.18
									03/13/2024	59.89	55.89	16.11	3,406.17
									07/25/2024	59.98	55.98	16.02	3,406.08
									10/15/2024	59.96	55.96	16.04	3,406.10

Notes:

Monitoring wells MW-1, MW-2 and MW-3 installed by Hungry Horse Environmental, and are dry. Monitoring wells MW-4 and MW-5 installed by Scarborough Drilling, Inc. (SDI), with 2-inch schedule 40 PVC casing and screen.
bgs: below ground surface
TOC: top of casing
AMSL: above mean sea level
** No well construction information is available*

Table 2
Groundwater Sample Analytical Data Summary
Apache Corp., NEDU 527
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*
MW-4	06/01/2021	<0.00200	<0.00200	<0.00200	<0.00400	176	597
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	218	676
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	**299**	537
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	173	481
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	157	523
	08/15/2022	<0.00200	<0.00200	<0.00200	<0.00400	119	549
	12/12/2022	<0.00100	<0.00100	<0.00100	<0.00100	122	347
	03/09/2023	<0.00200	<0.00200	<0.00200	<0.00200	121	420
	06/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	129	553
	09/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	155	527
	12/19/2023	<0.00200	<0.00200	<0.00200	<0.00400	83.2	394
	03/13/2024	<0.00200	<0.00200	<0.00200	<0.00400	117	367
	07/25/2024	<0.00200	<0.00200	<0.00200	<0.00400	95.3	372
	10/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	84.1	486
MW-5	06/01/2021	<0.00200	<0.00200	<0.00200	<0.00400	**306**	761
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	**303**	757
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00400	**293**	709
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	**276**	764
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	240	667
	08/15/2022	<0.00200	<0.00200	<0.00200	<0.00400	176	665
	12/12/2022	<0.00100	<0.00100	<0.00100	<0.00100	192	508
	03/09/2023	<0.00200	<0.00200	<0.00200	<0.00400	193	531
	06/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	243	734
	09/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	235	654
	12/19/2023	<0.00200	<0.00200	<0.00200	<0.00200	151	491
	03/13/2024	<0.00200	<0.00200	<0.00200	<0.00400	242	540

Table 2
Groundwater Sample Analytical Data Summary
Apache Corp., NEDU 527
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*
	07/25/2024	<0.00200	<0.00200	<0.00200	<0.00400	212	543
	10/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	169	588
DUP-1 (MW-5)	06/01/2021	<0.00200	<0.00200	<0.00200	<0.00400	**305**	774
	10/12/2021	<0.00200	<0.00200	<0.00200	<0.00400	**300**	779
	12/21/2021	<0.00200	<0.00200	<0.00200	<0.00200	**302**	695
	03/02/2022	<0.00200	<0.00200	<0.00200	<0.00400	**270**	774
	05/24/2022	<0.00200	<0.00200	<0.00200	<0.00400	243	680
	08/15/2022	<0.00200	<0.00200	<0.00200	<0.00400	158	691
	12/12/2022	<0.00100	<0.00100	<0.00100	<0.00100	176	421
	03/09/2023	<0.00200	<0.00200	<0.00200	<0.00400	190	558
	06/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	242	942
	09/05/2023	<0.00200	<0.00200	<0.00200	<0.00400	**258**	630
	12/19/2023	<0.00200	<0.00200	<0.00200	<0.00400	195	512
	03/13/2024	<0.00200	<0.00200	<0.00200	<0.00400	215	554
	07/25/2024	<0.00200	<0.00200	<0.00200	<0.00400	213	537
	10/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	160	576

Notes:

Analysis performed by Eurofins Laboratories (formally Xenco Laboratories), in Midland, Texas by EPA SW-846 Method 8021B (BTEX), SM 2540C (TDS), and Method 300 (chloride).

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

< : indicates paramenter concentration is below the analytical method reporting limit (RL).

** : NMWQCC human health standard*

*** : NMWQCC domestic water quality standard*

BGS: below ground surface

Bold and highlighted indicates that parameter concentration is above WQCC standard.

Figures

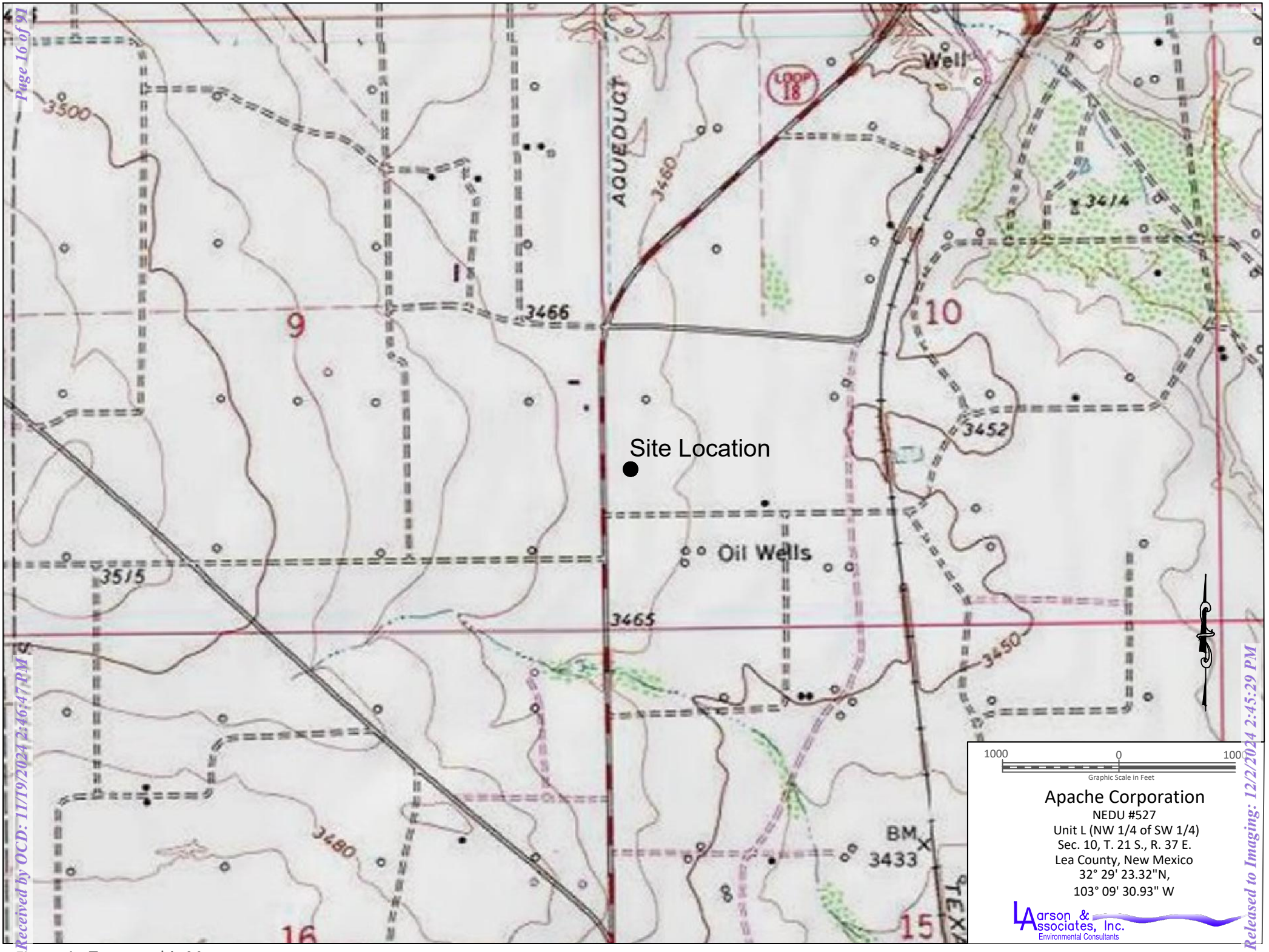


Figure 1 - Topographic Map

Figure 2 - Aerial Map

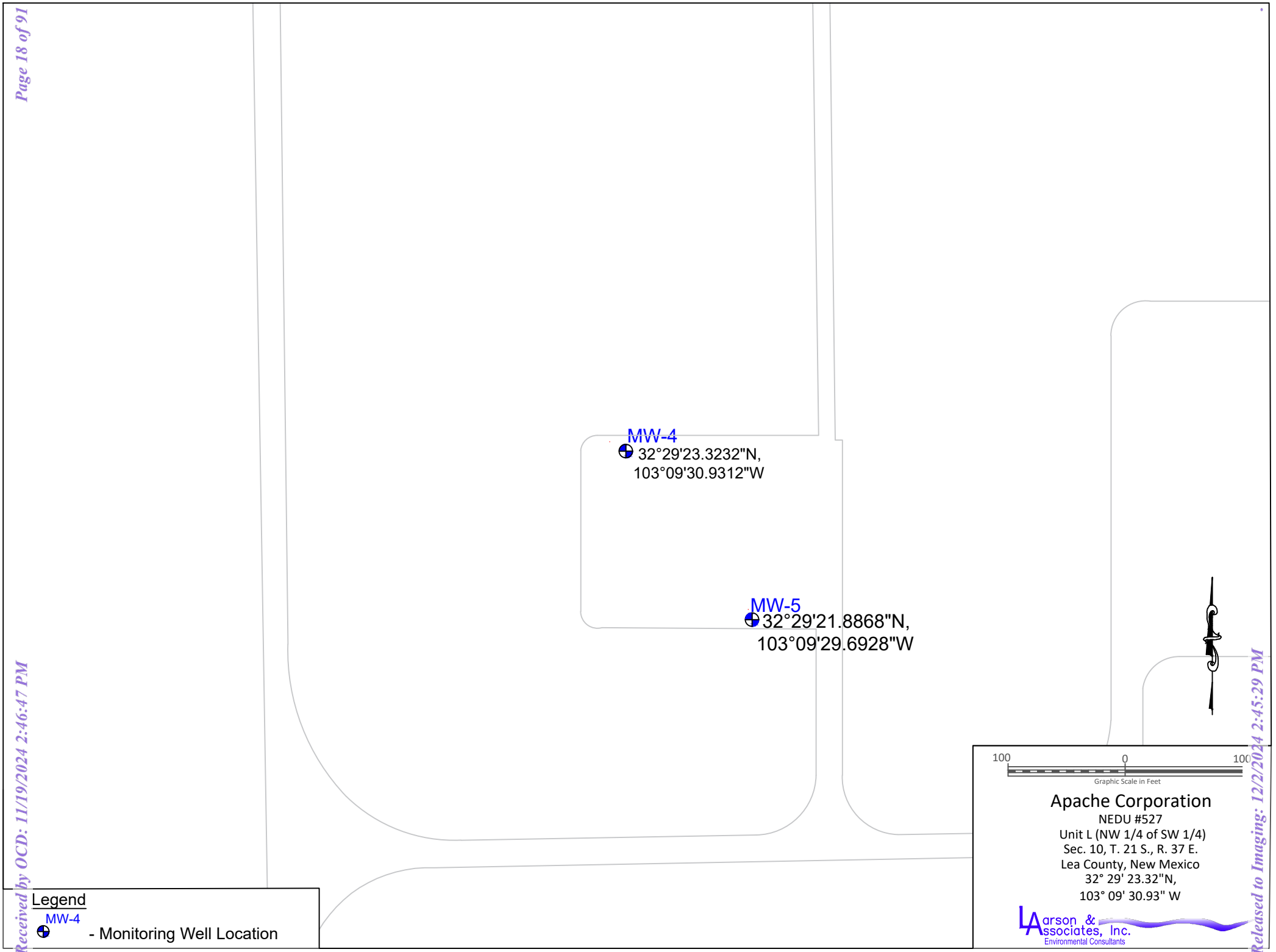


Figure 3 - Site Map

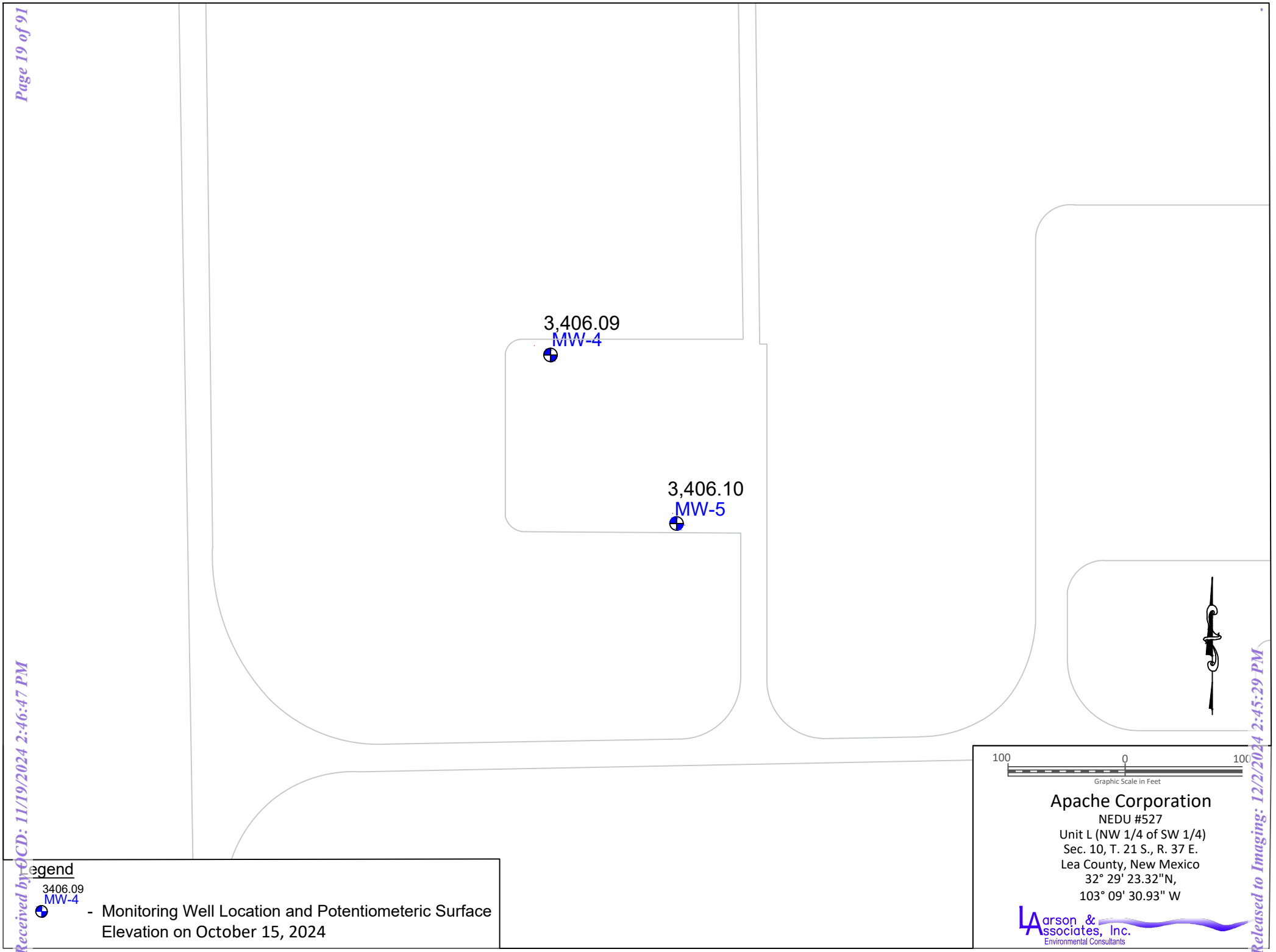


Figure 4 - Potentiometric Surface Elevation, October 15, 2024

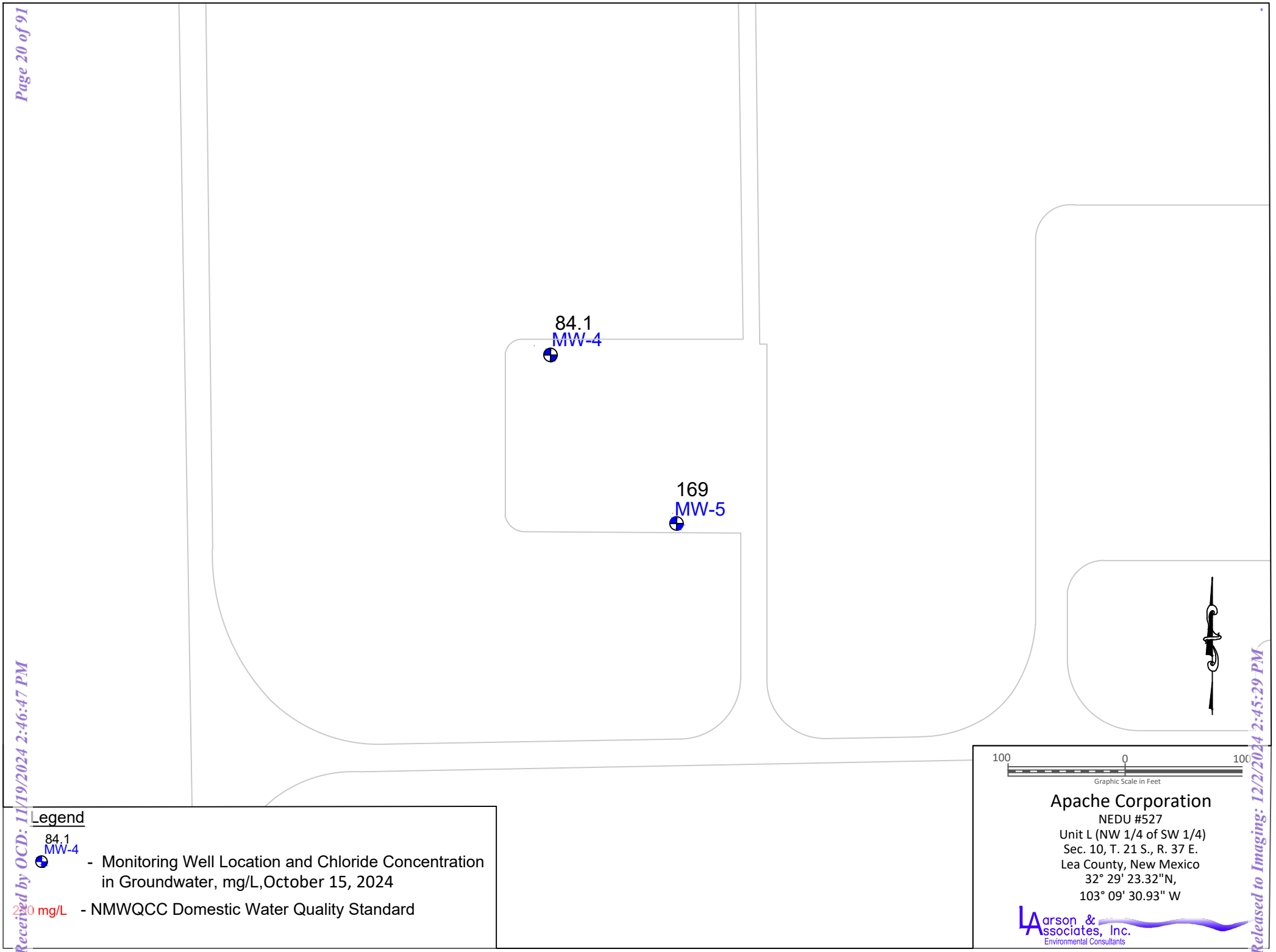


Figure 5 - Chloride Concentration in Groundwater, October 15, 2024

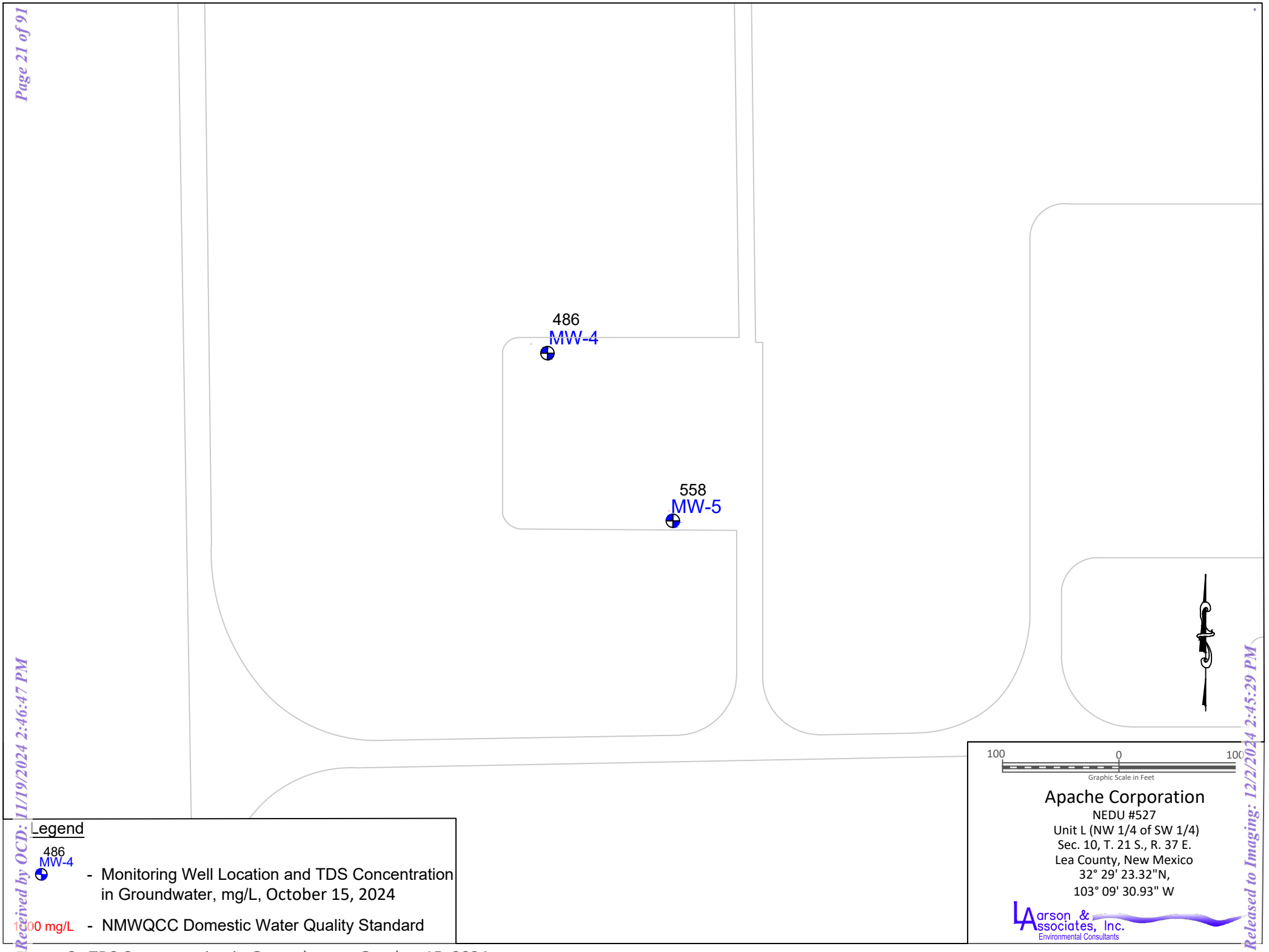


Figure 6 - TDS Concentration in Groundwater, October 15, 2024

Appendix A

NMOCD Communications

[NOTIFY] Notification Of Sampling (C-141N) Application

Submission Information

Submission ID:	391821	**Districts:**	Hobbs
Operator:	[873] APACHE CORPORATION	**Counties:**	Lea
Description:	APACHE CORPORATION [873] , NORTHEAST DRINKARD UNIT #527 , nPAC0631334833		
Status:	APPROVED		
Status Date:	10/11/2024		
References (2):	30-025-37242, nPAC0631334833		

Forms

This application type does not have attachments.

Questions

Prerequisites

Incident ID (n#)	**nPAC0631334833**
Incident Name	**NPAC0631334833 NORTHEAST DRINKARD UNIT #527 @ 30-025-37242**
Incident Type	**Produced Water Release**
Incident Status	**Initial C-141 Approved**
Incident Well	**[30-025-37242] NORTHEAST DRINKARD UNIT #527**

Location of Release Source

Site Name	**NORTHEAST DRINKARD UNIT #527**
Date Release Discovered	**07/19/2006**
Surface Owner	**State**

Sampling Event General Information

Please answer all the questions in this group.

What is the sampling surface area in square feet	600
What is the estimated number of samples that will be gathered	3
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/15/2024
Time sampling will commence	01:00 PM

Warning: Notification can not be less than two business days prior to conducting final sampling.

Please provide any information necessary for observers to contact samplers	Dan 432-664-5357
Please provide any information necessary for navigation to sampling site	32.48981, -103.15859

Acknowledgments

This submission type does not have acknowledgments, at this time.

Comments

No comments found for this submission.

Conditions

Summary: *lbaker (10/11/2024),* Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29

Reasons

No reasons found for this submission.

Appendix B

Initial C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company – Apache Corporation	Contact – Harold Swain
Address – P.O. Box 849 Wink, TX 79789	Telephone No. – 505-390-4368
Facility Name – NEDU 527 API # – 30-025-37242	Facility Type – Producing Well

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	1310 Feet from the	South Line	330 Feet from the	West Line	County
	10	21S	37E					

Latitude - N 32 degrees 29.387' **Longitude** - W 103 degrees 09.502'

NOV 2006 Received Hobbs OCD

NATURE OF RELEASE

Type of Release - Brine Water	Volume of Release	Volume Recovered
Source of Release – compromised pit liner	Date and Hour of Occurrence unknown	Date and Hour of Discovery 7/19/06 7:30 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson / Glen Von Goten	
By Whom? Jerry Brian – Hungry Horse Environmental	Date and Hour	
Was a Watercourse Reached? ☒ Yes ☐ No	If YES, Volume Impacting the Watercourse. unknown	

If a Watercourse was Impacted, Describe Fully.*
Analytical results indicated that groundwater has been impacted. Chloride results of groundwater at 62' bgs is 2007 ppm.

Describe Cause of Problem and Remedial Action Taken.*

Drilling pit liner had somehow been compromised and leaked below the liner. Field chloride test were conducted and sample taken to Cardinal laboratory under chain-of-custody

Describe Area Affected and Cleanup Action Taken.*

Pit contents were removed and taken to sundance disposal facility. Soil was tested below the liner. All material exceeding the acceptable MCL of 250 ppm was excavated to a depth of 19' bgs and transported to Sundance disposal. Approval was obtained to cap the excavated bottom with a 20 ml liner once vertical delineation had been established.

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

Signature: Jerry Brian Acting Agent for Apache Corp.

Printed Name: Jerry Brian

Title: Environmental Manager - Hungry Horse Environmental

E-mail Address: jrbrian@verizon.net

Date: 11/6/06 Phone: 505-390-6149

OIL CONSERVATION DIVISION

Approved by District Supervisor: ENVIRO ENGR

Approval Date: 11.9.06 Expiration Date: 2.9.07

Conditions of Approval: Attached ☐

Incident nPAC0631334833 application-pPAC0631334915 RP# 1113.

Appendix C

Karst Potential Map

Coordinate 672585,3596506 Scale 1:4706 Magnifier 100% Rotation

Appendix D

Water Easement and Permits

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 690375
File Nbr: CP 01868

May. 14, 2021

LARRY BAKER
APACHE CORPORATION
303 VETERANS AIRPARK LANE
MIDLAND, TX 79705

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.

* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

JUAN HERNANDEZ

Enclosure

explore

File No. CP-1868 POD1,2

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: March 8, 2021 Requested End Date: March 8, 2026

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Apache Corporation	Name:
Contact or Agent: Larry Baker check here if Agent ☐	Contact or Agent: check here if Agent ☐
Mailing Address: 303 Veterans Airpark Lane	Mailing Address:
City: Midland	City:
State: TX Zip Code: 79705	State: Zip Code:
Phone: (432) 631-6982 ☐ Home ☒ Cell Phone (Work): (432) 818-1000	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): larry.baker@apachecorp.com	E-mail (optional):

OSE DII MAR 17 2021 AM9:03

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 4/12/12

File Number: CP-1868	Trn Number: 690375
Trans Description (optional): POD 1, 2	
Sub-Basin: CP	
PCW/LOG Due Date:	2.43134

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-4 CP-1868 POD 1	103° 9' 30.93"	32° 29' 23.32"	NW/4, SW/4, S10 T21S, R37E
MW-5 CP-1868 POD2	103° 9' 29.69"	32° 29' 21.89"	SW/4, SW/4, S10 T21S, R37E

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ **Yes** ☒ **No** **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: State of New Mexico

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ **Yes** ☐ **No**
If yes, how many_____

Approximate depth of well (feet): 70	Outside diameter of well casing (inches): 2
Driller Name: Layne Scarborough	Driller License Number: WD-1188

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Wells will be used to delineate and monitor groundwater contamination for up to 5 years.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: CP-1868 | Trn Number: 690375

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application.

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.		**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Larry Baker
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Larry Baker
Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 14th day of May 2021 for the State Engineer,

MAR 17 2021 AM 9:03

John R. D'Antonio, Jr., P.E.
State Engineer

By: _____
Signature

Print

Title: Juan Hernandez, Water Resource Manager 1
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: CP-1868	Trn Number: 690375

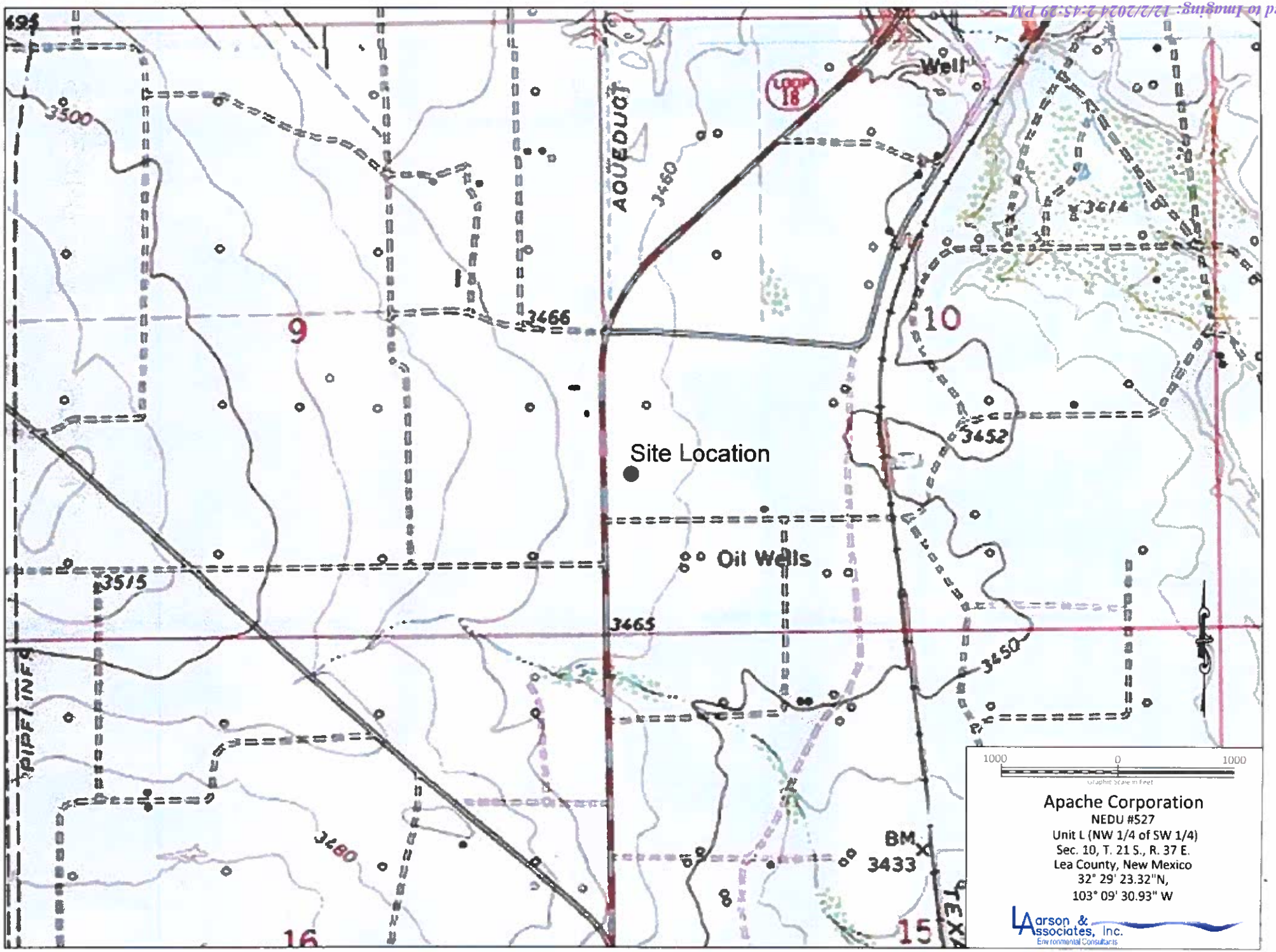


Figure 1 - Topographic Map

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-1A Depth of the well shall not exceed the thickness of the valley fill.

17-4 No water shall be appropriated and beneficially used under this permit.

17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: CP 01868 POD1,2

File Number: CP 01868
Trn Number: 690375

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

LOG The Point of Diversion CP 01868 POD1 must be completed and the Well Log filed on or before 05/14/2022.

LOG The Point of Diversion CP 01868 POD2 must be completed and the Well Log filed on or before 05/14/2022.

IT IS THE PERMITTEES RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE TO OTHER THAN MONITORING PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

Trn Desc: CP 01868 POD1,2

File Number: CP 01868
Trn Number: 690375

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 03/17/2021	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 14 day of May A.D., 2021

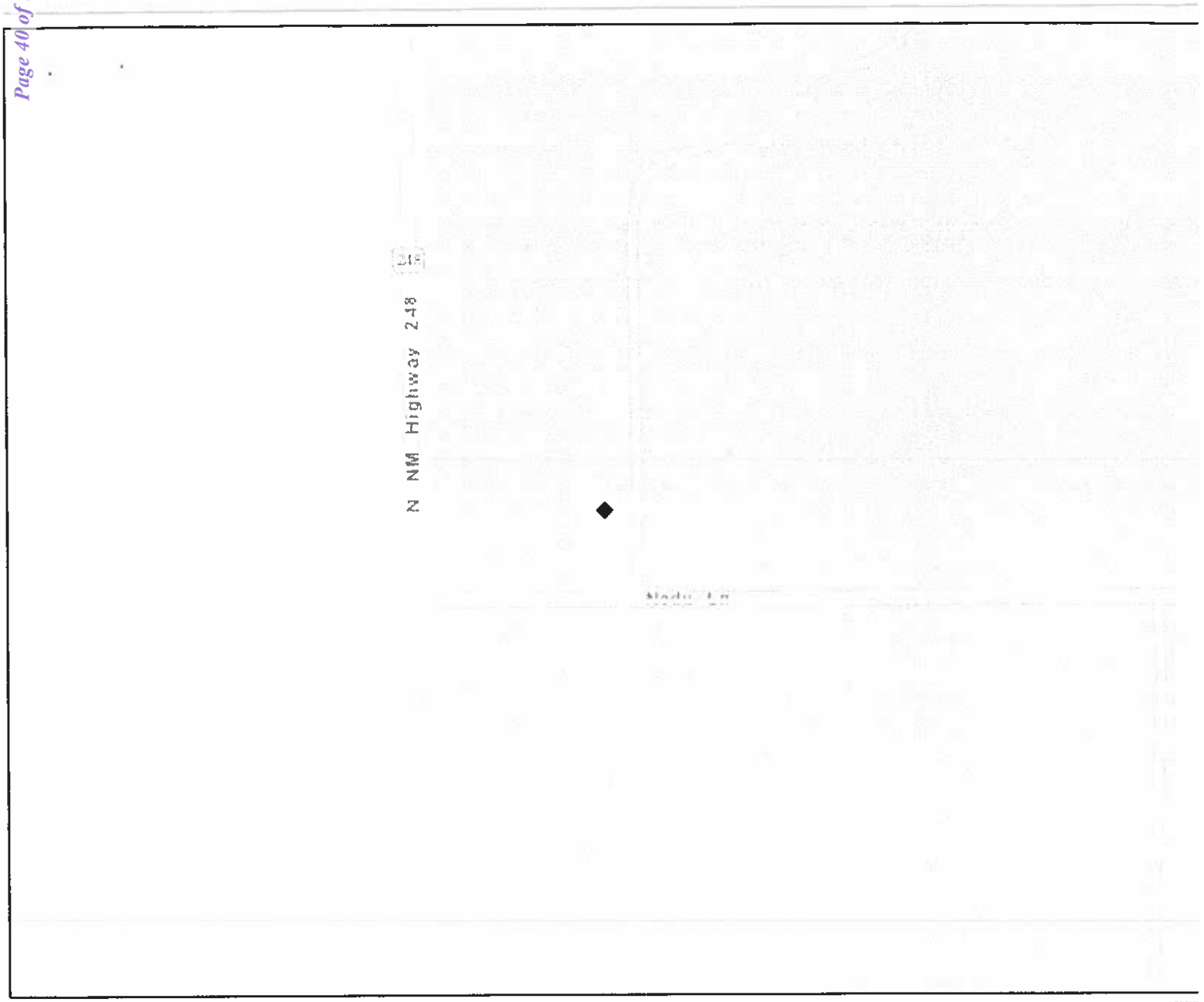
John R. D Antonio, Jr., P.E. , State Engineer

By: _____
JUAN HERNANDEZ

GREAT SEAL OF THE STATE OF NEW MEXICO * 1912 *

Trn Desc: CP 01868 POD1,2

File Number: CP 01868
Trn Number: 690375



NEW MEXICO OFFICE OF THE STATE ENGINEER

Coordinates

UTM - NAD 83 (m) - Zone 13
Easting 673046.555
Northing 3596179.291

State Plane - NAD 83 (f) - Zone E
Easting 903665.639
Northing 543773.557

Degrees Minutes Seconds
Latitude 32 : 29 : 21.890000
Longitude -103 : 9 : 29.690000

Location pulled from Coordinate Search

N

1:4,514

0 90 180 360 ft

Image Info
Source: NA
Date: NA
Resolution (m):NA
Accuracy (m): NA

Spatial Information

OSE Administrative Area: Lea
County: Lea
Groundwater Basin: Capitan
Abstract Area:CP

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant
Restrictions:
NA

PLSS Description
NENWSWSW Qtr of Sec 10 of 021S 037E

Calculated PLSS

◆ Coord Search Location

OSE District Boundary

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

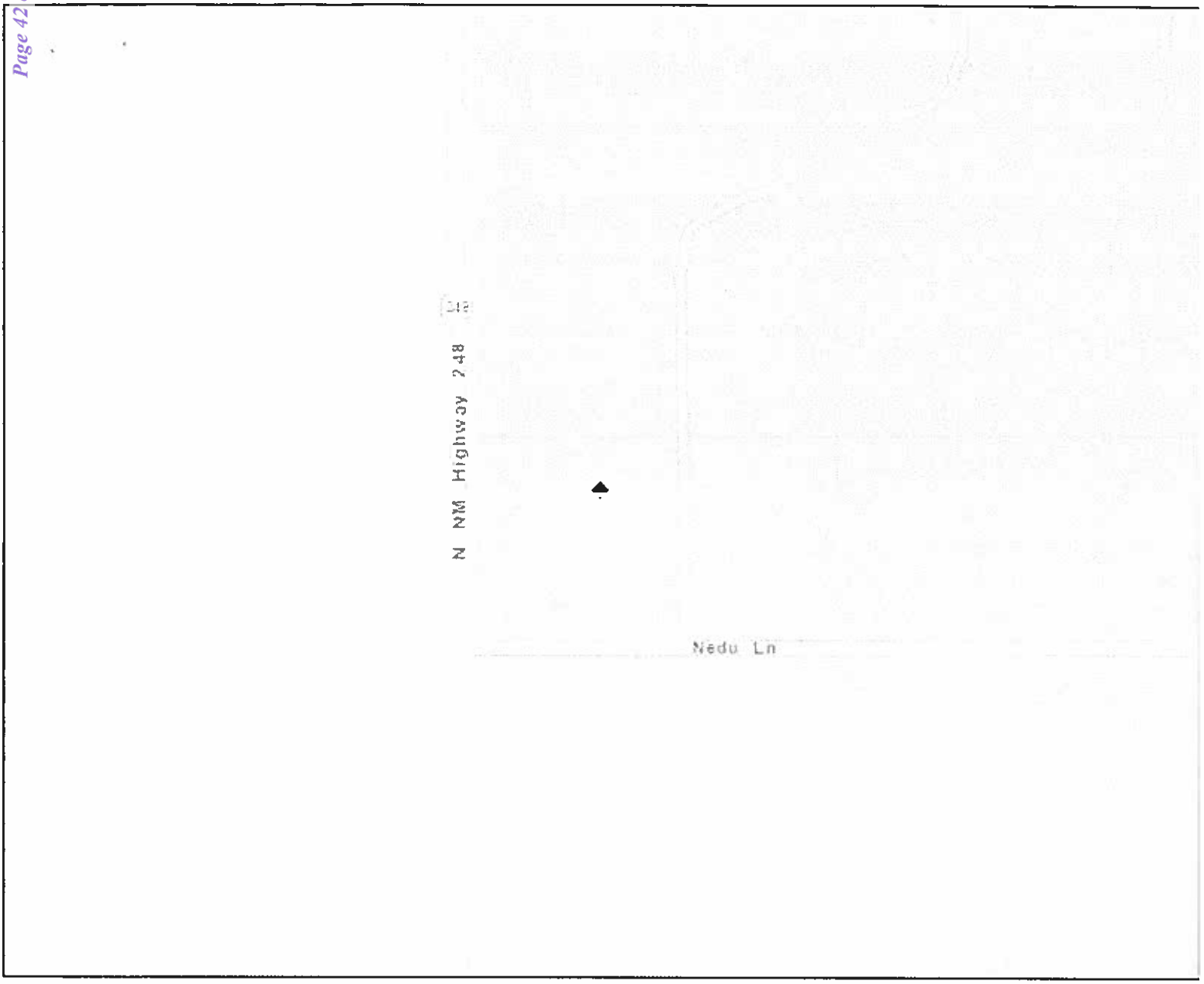
SiteBoundaries

World Street Map

POD Information

Owner: APACHE CORP/NM
File Number: CP- 1868 POD2
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose: MONITOR MW-5

YM 3/2



Coordinates

UTM - NAD 83 (m) - Zone 13
Easting 673013.427
Northing 3596222.774

State Plane - NAD 83 (f) - Zone E
Easting 903557.835
Northing 543916.908

Degrees Minutes Seconds
Latitude 32 : 29 : 23.320000
Longitude -103 : 9 : 30.930000

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

N

1:4,514

ft
0 90 180 360

Image Info
Source: NA
Date: NA
Resolution (m):NA
Accuracy (m): NA

Spatial Information
OSE Administrative Area: Lea
County: Lea
Groundwater Basin: Capitan
Abstract Area:CP

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant
Restrictions:
NA

PLSS Description
SWSWNWSW Qtr of Sec 10 of 021S 037E

Calculated PLSS

Coord Search Location

OSE District Boundary

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

SiteBoundaries

World Street Map

POD Information
Owner: APACHE CORP/NM
File Number: CP- 1868 POD1
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose: MONITOR MW-4

YM 3/22

Stephanie Garcia Richard
COMMISSIONER

State of New Mexico
Commissioner of Public Lands

310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

May 14, 2021

Apache Corporation
Attn: Larry Baker
303 Veterans Airpark Lane
Midland, TX 79705

Re: N.M. Water Easement WM-673

Dear Mr. Baker,

Enclosed please find the approved contract for WM-673. Thank you for doing business with the New Mexico State Land Office.

If you require further assistance, please contact David Gallegos in the Water Bureau at (505) 476-0378 or dgallegos@slo.state.nm.us.

Sincerely,

S. Garcia Richard 5/18

Stephanie Garcia Richard
Commissioner of Public Lands
SGR/dg

encl.

xc: Lease File WM-673

NEW MEXICO STATE LAND OFFICE

WATER MONITORING EASEMENT

NO. WM-673
New-Issue

THIS AGREEMENT, effective **April 12, 2021**, and signed this 14th day of May, **2021**, is made and entered into between the State of New Mexico Commissioner of Public Lands, acting trustee pursuant to the Act of June 21, 1910, 36 Stat. 557, ch. 310, § 10, (Commissioner), and **Apache Corporation**, whose address is **303 Veterans Airpark Lane, Midland, Texas 79705**, (Grantee). This Water Monitoring Easement ("Easement") is not effective until signed by the Commissioner.

1. Grant of Easement

For good and valuable consideration, including the covenants herein, the Commissioner grants to Grantee a Water Easement for **two (2)** well-sites as herein defined, to be located within the following described area in **Lea** County ("Easement Land"):

Quarter-Quarter	*Section*	*Township*	*Range*	*Number of Easement Acres*
NW4SW4	10	21S	37E	40
SW4SW4	10	21S	37E	40

The monitoring wells permitted under this Easement are as follows:

SLO Well-Site Name	*Lat Long in decimal degrees*	*OSE Well POD Number*	*Volume of Use*
MW-4	32.489811, -103.158592	CP-1868 POD1	<1afy
MW-5	32.489414, -103.158247	CP-1868 POD2	

A well-site is one half (0.5) acre with the denominated well in the center. Depending on their proximity, well-sites may overlap. The area of this granted easement is calculated based on 0.5 acres multiplied by the total number of well sites shown above.

2. Term of Easement

A. Term

This Water Easement is for a term of **five (5)** years, commencing on **April 12, 2021** ("Anniversary Date"), and expiring **April 11, 2026**, unless terminated earlier as provided herein.

B. Renewal

Upon Grantee's written request submitted to the Commissioner at least sixty (60) days prior to the expiration of this Easement, the parties may renew this Easement if the

Commissioner, in the Commissioner's sole discretion, determines such renewal to be in the best interests of the trust.

C. Reversion to Commissioner

At such time that this Water Easement expires, is not renewed, or is otherwise terminated, or if Grantee has failed to use the Easement Land for the permitted purposes for a period of one (1) year, the Easement Land shall *ipso facto* revert to the Commissioner who may, in his sole discretion, thereafter make this Water Easement, with improvements, if any, available for further use. The Commissioner shall give Grantee notice of this said non-renewal by registered mail and no further notice or action on the Commissioner's part shall be required. Any loss of any kind, arising from the non-renewal of this Easement is acknowledged and accepted by the Grantee as a business risk and the Grantee's acknowledgement and acceptance shall be considered an inducement by Grantee to the Commissioner to enter into this Water Easement, shall not be considered a "taking" of any rights or property of Grantee, and shall not be the basis of any action at law or in equity to recover damages of any kind.

3. Purpose and Approved Use

This Easement is for the purpose of allowing Grantee's placement of monitoring well(s) for the benefit of the trust and for the following specific purpose: to monitor groundwater pursuant to the requirements of Corrective Action **AP-68** issued by NMOCD on November 27, 2006. This grant of Easement entitles Grantee to the exclusive use of the easement for the permitted purposes, and to install such improvements as are necessary to those purposes for the term of this easement. This Easement does not entitle Grantee to divert water, or to develop or put to beneficial use any water rights. The Commissioner may permit other uses on or within this Easement to the extent that they do not impair Grantee's permitted purposes.

4. Permits and Reporting

A. Permit to Drill and Copies

Prior to drilling, Grantee shall obtain a permit to drill a well with no water right (Permit) for each well included in this Easement from the New Mexico Office of the State Engineer (OSE). The Permit application must name the Commissioner of Public Lands as co-applicant and indicate that the well is to be located on land owned by the New Mexico State Land Office. Grantee shall send the Commissioner a copy of all applications for a Permit or correspondence related to the applications contemporaneously with any OSE filing, and shall send to the Commissioner a copy of any and all OSE response(s), Permits, or other communication(s) regarding Permit within ten (10) days of receipt. Grantee shall comply with all applicable laws pertaining to, and with all rules and regulations and procedures of, any other state agency having proper jurisdiction over the water.

B. Monitoring Reports

Grantee shall provide to the Commissioner copies of all interim and final reports created using data collected from the wells permitted under this Easement.

C. Commissioner Participation in Filing

The Commissioner, in the Commissioner's discretion, may assist Grantee in any filings or proceedings before the OSE. However, the Commissioner may withhold approval of any filings with the OSE, may withdraw participation or approval of any joint filing with the OSE, and may contest or challenge any filing (even if the Commissioner was previously a joint applicant or party to the filing), if the Commissioner determines that a filing is not or is no longer in the best interest of the trust. At the written request of the Commissioner, Grantee shall withdraw any filing with the OSE.

5. Grantee Standard of Care

Grantee shall act prudently in drilling wells and performing water monitoring. "Prudent" within the context of this provision means that standard of care, operating and action of a reasonable water user acting pursuant to provisions of New Mexico water law and any other applicable laws, rules, and regulations. When Grantee has completed monitoring use of the well, Grantee will plug the well and provide Commissioner written evidence of having done so.

6. Documentation

As soon as practicable, Grantee shall furnish to the Commissioner copies of records, reports and plats of its operation, produced during the term of this Easement, including but not limited to water quality tests, well logs, drill cores, meter readings, and any data relating to hydrology and geological formations.

7. Amendment

This Easement shall not be altered, changed, or amended except by a written instrument executed by both the Commissioner and Grantee. An amendment is required to add wells to or remove wells from this Easement, or to establish rights-of-way or install improvements outside of the Easement Land. Each such amendment application shall be accompanied by the filing fee set forth in the Commissioner's current schedule of fees, and an annual rental payment per well, to be calculated and due as described in Paragraph 11.

8. Rights-of-way

Grantee shall have the right, without further consideration, to establish such rights-of-way upon the Easement Land as are reasonably necessary to the Purpose and Approved Use of the Easement, to install or maintain any necessary equipment or facilities on the Easement Land. Grantee shall not establish any rights-of-way or install any improvements outside of the Easement Land without an amendment to this Easement. It is Grantee's sole responsibility to notify and obtain in advance the approval of any surface lessee for any right-of-way. The Commissioner reserves the right to require such rights-of-way to be moved when the development or other use of the surrounding trust lands require this. Rights of way outside the Easement Land will be granted by the Commissioner, in the Commissioner's discretion. No right-of-way, or other access across, or use of any lands other than those expressly granted in this Easement is implied or expressed.

9. Surveys

Grantee shall survey each well site as soon as practicable after drilling, and submit a copy of the survey plat when completed to the Commissioner.

10. Improvements

A. Authorized Improvements

Grantee may make or place such improvements and equipment upon or under the Easement Lands as are reasonably necessary to the purpose of the Easement, subject to the requirements for removal of improvements and equipment set forth in Paragraph C below. No pipelines shall be installed, and no water right shall be developed or used under this Easement. All Grantee improvements such as well housing, piping, casing, and related equipment installed or obtained by Grantee on the granted Easement shall remain Grantee's sole property and liability. All such improvements shall be subject to the lien described in NMSA 1978 § 19-7-34. Grantee shall submit a written request for approval from the Commissioner prior to making any changes or additions to Authorized Improvements on the Easement Land. At the request of the Commissioner, Grantee shall submit updated survey plats showing such changes or additions.

B. Unauthorized Improvements

In the event that improvements not authorized by the Commissioner are placed on or under the Easement Land, at the Commissioner's discretion, such improvements may thereafter be deemed forfeited to the Commissioner and for purposes of Sections 19-7-14 and 19-10-28 NMSA 1978, no payments shall be due pursuant to those sections for such remaining improvements, or the Commissioner may order the removal, at Grantee's expense, of such improvements and the restoration of the Easement Land to its condition existing prior to the placement of said improvements.

C. Removal of Improvements or Equipment

Upon the termination, expiration or assignment of Grantee's interest in this Easement, Grantee may remove all such improvements, but only to the extent that such removal will not cause material injury to the Easement Land, and provided that all sums due to the Commissioner have been paid and that such removal is accomplished within sixty (60) days of the date of termination, expiration or assignment; or, Grantee may sell its interest in such physical improvements to a subsequent grantee or assignee. Any such sale or removal shall be subject to the Commissioner's paramount statutory lien. The Commissioner may, in writing, consent to the Grantee leaving designated improvements upon the Easement Land, and such improvements shall thereafter be deemed forfeited to the Commissioner, and no payments for such remaining improvements shall be due under Sections 19-7-14 and 19-10-28 NMSA 1978. Any other improvements not removed or sold by Grantee shall continue to be Grantee's sole property and liability, shall be deemed in trespass, and shall give rise to such remedies for trespass and waste as may be available to the Commissioner at law or in equity. The Commissioner may extend the 60-day period upon good cause shown.

11. Payment of Rental

A. Annual Rental

Grantee shall pay annual rental in the amount of **$1,000** ($500 per well) to be due on or before the Anniversary Date **April 12th** of each year. If this Easement is relinquished, cancelled or otherwise terminated prior to the end of the term set forth above, the annual rental shall not be prorated, reduce or refunded for any part of any year during which the Easement is in effect.

B. Payment Submittal

Payment of all sums due hereunder shall be made payable to "Commissioner of Public Lands" and shall include the State Land Office Water Easement number **WM-673**, and shall be submitted to the Director of Oil Gas Minerals Division, New Mexico State Land Office, 310 Old Santa Fe Trail, P.O. Box 1148, Santa Fe, New Mexico 87504-1148.

12. Receipt of Monies:

A. Receipt of Monies

No receipt of monies, including rental, by the Commissioner from Grantee, or any other person acting for or on Grantee's behalf, after termination or expiration of this Easement shall reinstate, continue, or extend the Term; affect any notice previously given to Grantee; operate as a waiver of the Commissioner's right to enforce payment of any rent or other monies due or thereafter falling due; or, operate as waiver of the right of the Commissioner to recover possession of the Easement Land by legal action.

B. Acceptance of Payment

Grantee understands that the Commissioner's receipt of any monies is governed by the New Mexico State Land Office Rules. Grantee agrees that the Commissioner's negotiation of Grantee's

check or other means of payment, and crediting the proceeds of such instrument to a suspense account, does not constitute acceptance of Grantee's payment.

C. Application of Payments

The Commissioner shall have the right to apply any payments made by Grantee to satisfy Grantee's obligations to the Commissioner in any order at the Commissioner's sole discretion, and without regard to Grantee's instructions as to the application of any such payment or part thereof, whether such instructions are endorsed on Grantee's check or otherwise, unless the Commissioner and Grantee otherwise agree, in writing, before the Commissioner accepts such payment. The Commissioner's acceptance of a check or payment by Grantee or others on Grantee's behalf shall not, in any way, affect Grantee's obligations hereunder nor shall it be deemed an approval of any assignment or subletting of this Water Easement.

13. Signage

Grantee shall post on each well a sign with the Grantee's name, Easement number, State Land Office well number, OSE permit number and location by legal description.

14. Site Security and Fencing

Any and all site security of any kind for Grantee, Grantee's agents, employees or invitees, the Easement Land, or any personal property thereon shall be the sole responsibility and obligation of Grantee, and shall be provided by Grantee at Grantee's sole cost and expense. Grantee agrees to provide reasonable security for the Easement Land and all construction areas within the Easement Land consistent with standard industry practices and in conformity with Grantee's duty to prevent waste and trespass. If the Commissioner requires or approves in advance in writing, Grantee will furnish proof to the Commissioner that required or approved fencing is completed and in good repair.

15. Reclamation

Grantee agrees to reclaim by grading, levelling or terracing all areas disturbed by its activities on the Easement Land, and to landscape such areas at its own cost and expense. A Reclamation Plan must be submitted to and approved by Grantor prior to implementation. Grantor will not release Grantee from its responsibility for reclamation and revegetation until all work described in the Reclamation Plan has been completed and Grantor has performed an inspection on the Easement Land. The goal of the Reclamation Plan shall be to achieve native plant cover and diversity levels equal to or exceeding the natural potential levels in undisturbed soils adjacent to the project area. The Reclamation Plan shall include the following:

A. Narrative

The Reclamation Plan shall include a narrative describing all reclamation activities including removal of debris and equipment.

B. Re-Vegetation Requirements

A detailed description of the seed mix (native seed only), seeding rate/acre, method of dispersal, timing of dispersal, follow up monitoring plan, a re-seeding plan if initial efforts are unsuccessful, and a plan for addressing noxious weeds shall all be included in the Reclamation Plan. All seed mixtures submitted for approval shall specify pounds of pure live seed per acre. The seed shall contain no primary or secondary noxious weeds. Commercially sold seed shall be either certified or registered seed. The Noxious Weed component of the Reclamation Plan should include identification of the species of concern and the methods used to eradicate those species from the site. Eradication techniques may include mechanical treatment, chemical treatment, follow-up and monitoring. A Final Report is required on implementation and completion of the Reclamation that includes a brief narrative of the seeding and monitoring efforts and photos of the

reclaimed area. Once Grantee has submitted the Final Report and the Grantor has approved the work, Grantor will provide acknowledgment that reclamation requirements have been met.

16. Compliance with State Land Office Rules and Other Laws

Grantee shall comply with all applicable laws pertaining to, and with all rules and regulations and procedures of, the OSE where the State Engineer has jurisdiction over the monitoring wells. Grantee shall fully comply with all federal, state and local laws, rules, regulations, ordinances and requirements applicable to the Easement Land or to Grantee's operations thereon, including but not limited to all applicable laws governing water; endangered or threatened species; hazardous materials; environmental protection; land use; health and safety; cultural, historic or archeological / paleontological properties; waste; trespass, and the New Mexico Cultural Properties Act, NMSA 1978, 18-6-1 et seq. Such agencies are not to be deemed third party beneficiaries hereunder; however, this clause is enforceable by the Commissioner as herein provided or as otherwise permitted by law. Grantee shall comply with all New Mexico State Land Office Rules and Regulations, 19.2 NMAC, including those that may be hereafter promulgated. Grantee's obligations under this paragraph include but are not limited to compliance with NMSA 1978 Section 19-6-5, requiring a lessee of State Trust Land to protect the Easement Land from waste or trespass. Grantee's compliance with all laws, regulations and policy shall be at its own expense.

17. Relinquishment

A. Relinquishment

Grantee may, with the Commissioner's approval, relinquish this Easement provided that Grantee is in compliance with all terms of this Easement, including the payment of all rentals due, and if all improvements made pursuant to the Easement on, for, or appurtenant to the Easement Land have been approved by the Commissioner and arrangements satisfactory to the Commissioner have been made for either their removal or retention. Grantee may request relinquishment of all or any part of the Easement Land by filing relinquishment forms prescribed by the Commissioner and paying the relinquishment fee in the Commissioner's schedule of fees. Granting the request is at the discretion of the Commissioner.

C. No Release of Liability or Obligations

Grantee shall not, by relinquishment, avoid or be released from any liability for known or unknown waste or damage to the Easement Land, including environmental damage arising from, or in connection with, Grantee's use or occupancy thereof. Likewise, by relinquishment Grantee shall not be relieved of or discharged of obligations accrued by Grantee as of the date of relinquishment, including the obligation to reclaim the surface, revegetate the surface, pay the rentals required under Paragraph 11 and indemnify the Commissioner in accordance with the terms of this Easement.

D. No Refunds for Relinquishment

Upon any relinquishment, Grantee shall not be entitled to the refund of any rental previously paid.

18. Assignment or Sublease

Grantee shall not assign or sublease any rights granted hereunder, any part thereof, any portion of the Easement Land or any improvements located on the Easement Land without the prior amendment of this Water Easement pursuant to Paragraph 7 to permit such sublease or assignment, payment of the fee provided in the Commissioner's schedule of fees, and completion of required forms indicating the Commissioner's consent. Grantee may assign this Water Easement in whole only. The assignee shall succeed to all of the rights and privileges of the

Grantee hereunder and shall be held to have assumed all of the duties and obligations of the Grantee to the Commissioner (including payments of rentals up to and after the date of the assignment), except that the Commissioner reserves the right to increase the annual rental and percent rental to be payable by the assigned under Paragraph 11. No such assignment or sublease shall attempt to convey any permanent interest in Water Rights. Any sublease or assignment without Water Easement amendment shall be null and void.

19. Collateral Assignment

Grantee shall obtain approval of the Commissioner before making any collateral assignment or mortgage of its interest in this Easement or its improvements, and any such collateral assignment or mortgage shall be subject to the conditions, limitations and requirements set forth in the State Land Office rules. The Commissioner's approval of a collateral assignment or mortgage shall not release Grantee from any of its obligations under this Easement, except as agreed to in writing by the Commissioner. If the Commissioner gives Grantee a notice of default, the Commissioner shall simultaneously provide a copy of the notice to an approved collateral assignee or mortgagee, which shall have the right to cure the default within the time provided, subject to the requirements of State Land Office rules. An approved collateral assignee or mortgagee may succeed to the rights and duties of Grantee, and it may assign the Water Easement in accordance with Paragraph 18, and State Land Office Rules governing assignments.

20. Grantee Breach and Cancellation

The Commissioner may terminate this Water Easement for breach of any term or covenant of this Easement. Any substantial deviation in water quantity or water quality, if reasonably attributable to Grantee, or any change in the purpose of the Easement from that stated herein, shall constitute grounds for the Commissioner, in the Commissioner's sole discretion, to terminate, amend, modify, renegotiate, cancel or otherwise change this Easement; provided, however, that the Commissioner shall mail to the Grantee, by certified mail, addressed to the mailing address of Grantee shown in the Commissioner's current records, a thirty (30) day notice of intention to alter or terminate, specifying the reasons for which the notice is given. Proof of mailing, but no proof of receipt of notice, shall be necessary, and thirty (30) days after such mailing this Easement shall terminate *ipso facto* without further notice or proceeding required of the Commissioner; provided, however, there shall be no termination and reversion if Grantee has previously made arrangements satisfactory to the Commissioner to discharge or resolve the breach.

21. Holding Over

Upon termination or expiration of this Easement, any act or conduct of Grantee, including, but not limited to, the unapproved entry upon, occupancy, or use, whether continuous or not, of all or any part of the Easement Land by Grantee, the Grantee's agents, or by any unauthorized improvements or other improvements required or ordered to be removed upon termination or expiration shall constitute Holding Over. At the termination or expiration of this Easement, Grantee immediately shall deliver possession to the Commissioner. In the event of Grantee's Holding Over, Grantee shall pay the Commissioner from time to time, upon demand, as rental for the period of any hold over, to be due for each day of such hold over, an amount equal to two hundred percent (200%) of the annual rent. Nothing contained herein shall be construed as a grant to Grantee of the right to hold over or otherwise enter the Easement Land for any purpose after the expiration or termination of this Easement without the prior written approval of the Commissioner. At any time that Grantee is holding over, the Commissioner shall, without requirement of further notice or grace period, have any and all rights to evict or otherwise remove Grantee by force or

otherwise, with all costs and fees incurred in such action to be due and payable by Grantee. This Section shall survive the termination or expiration of this Easement.

22. Bond

Prior to commencement of operations under this Easement. Grantee shall obtain the Commissioner's approval of and file a bond with the Commissioner in the amount of **one thousand dollars ($1,000.00)** to secure payment to the Commissioner of such damage as may occur to livestock, range, water, crops or tangible improvements on the subject lands as may result from Grantee's use and occupation under this Easement. Such bond shall be payable for the term of this Easement, and may be utilized for reclamation of disturbed lands following the operations of Grantee under this Easement. Payment under this paragraph is to be made to the Commissioner and not to any other party. Grantee's bond shall not be liquidated damages, and the Commissioner reserves the right to pursue any other remedy for damages available at law or in equity.

23. Indemnification

Grantee shall hold harmless, indemnify and defend the State of New Mexico, the Commissioner and the Commissioner's employees, agents, and contractors, and beneficiaries, in both their official and individual capacities, from any and all liabilities, claims, losses, damages, or expenses, including but not limited to reasonable attorneys' fees, loss of land value, third party claims, penalties or removal, remedial or restoration costs arising out of, alleged to arise out of or indirectly connected with a) the operations hereunder of Grantee or Grantee's employees, agents, contractors, or invitees, b) any hazardous materials located in, under, or upon or otherwise affecting the Easement Land or adjacent property, or c) the activities of third parties on the Easement Land, whether with or without Grantee's knowledge or consent. In the event that any action, suit or proceeding is brought against Grantee, Grantee shall, as soon as practicable but no later than two (2) days after it receives notice thereof, notify the legal counsel of the Commissioner and the Risk Management Division of the New Mexico General Services Department by certified mail. This paragraph shall survive the termination, cancellation or relinquishment of this Water Easement, and any cause of action of the Commissioner to enforce this provision shall not be deemed to accrue until the Commissioner's actual discovery of said liability, claim, loss, damage, or expense.

24. No Waiver by Commissioner

No employee or agent of the Commissioner has the power, right, or authority to orally waive any of the conditions, covenants, or agreements of this Easement; and no waiver by the Commissioner of any of the conditions, covenants, or agreements of this Easement shall be effective unless in writing and executed by the Commissioner. The Commissioner's waiver of Grantee's breach or default of any of the conditions, covenants, or agreements hereof shall not constitute or be construed as a waiver of any other or subsequent breach or default by Grantee. The failure of the Commissioner to enforce at any time any of the conditions, covenants, or agreements of this Easement, or to exercise any option herein provided, or to require at any time performance by Grantee of any of the conditions, covenants, or agreements of this Easement shall not constitute or be construed to be a waiver of such conditions, covenants, or agreements, nor shall it affect the validity of this Easement or any part thereof, or the Commissioner's right to thereafter enforce each and every such condition, covenant, or agreement.

25. Scope of Agreement

This Easement incorporates all the agreements, covenants, and understandings between the Commissioner and Grantee concerning the subject matter hereof and all such agreements, covenants, and understandings are merged into this Easement. No prior agreement or

understanding between the Commissioner and Grantee shall be valid or enforceable unless expressly embodied in this Easement.

26. Non-impairment

Nothing in this Easement is to be construed to allow the impairment of the rights of any lawful holder, present or future, of any geothermal resources, or any mineral, grazing, commercial, easement, or Water Rights on the subject or any other state trust lands.

27. Severability

In the event that any provision of this Easement is held invalid or unenforceable under applicable law, this Easement shall be deemed not to include that provision and all other provisions shall remain in full force and effect.

28. Successors In Interest

All terms, conditions, and covenants of this Easement and all amendments thereto shall extend to and bind the permitted heirs, successors, and assigns of Grantee and the Commissioner. There are no third party beneficiaries of this Easement.

29. Dispute Resolution, Applicable Law and Venue

Any disputes arising under or in connection with this Easement shall be first resolved by mandatory contest pursuant to 19.2.15 NMAC. Subsequent appeal, if any, shall be in the First Judicial District Court of Santa Fe. In all instances, the law of New Mexico shall apply. The laws of the State of New Mexico shall govern this Easement, without giving effect to the conflict of law provisions of the State of New Mexico. Grantee consents to venue and jurisdiction in the District Court in and for the County of Santa Fe, State of New Mexico for purposes of any appeal pursuant to 19.2.15 NMAC, and to service of process under the laws of the State of New Mexico in any action relating to this Easement or its subject matter.

30. Time

Time is of the essence in the performance of each and every provision of this Easement. Grantee's failure to perform any or all of its obligations under this Easement in a timely manner shall be a breach of this Easement.

31. Singular And Plural

Whenever the singular is used herein, the same shall include the plural.

32. Headings And Titles

The use of section or paragraph headings and titles herein is for descriptive purposes only and is independent of the covenants, conditions, and agreements contained herein.

33. No Joint Venture

The Commissioner is not and will not be construed or held to be a partner, joint venturer or associate of Grantee in the conduct of the business of Grantee. The Commissioner will not be liable for any debts incurred by Grantee in the conduct of the business of Grantee. The relationship between the Commissioner and Grantee is, and will remain, solely that of the Commissioner and Grantee.

34. No Commissioner Personal Liability

In the event of a court action, Grantee shall not seek damages from the Commissioner or any employee of SLO or the State of New Mexico in their individual capacity. This Section shall survive termination of this Easement.

35. Stipulations

This easement is being issued with the expectation that all fees, bond(s) and requested data and information has been submitted or will imminently be received by the State Land Office. Should a subsequent audit of this easement reveal any of the above stated items have not been submitted, the New Mexico State Land Office will issue a letter to you requiring that you come into compliance, and the easement holder shall have 30 days to submit the missing item(s) or this easement may be terminated.

The Land Office ARMS Inspection indicates that an archaeological survey of the entire area of potential effect has not been completed. It is recommended that an archaeological survey be conducted before any ground disturbing activities take place.

36. Notices

Written notice by registered or certified U.S. Postal Service, return receipt requested, or delivered by reputable overnight courier, return receipt of tracking system, to the addresses of the party hereunder shall constitute sufficient notice to comply with the terms of this Easement. Notice will be deemed effective upon delivery. Either the Commissioner or Grantee may change its respective address as provided in this Section effective three (3) business days after giving written notice of the change to the other. The addresses for notice are:

Notice to the Commissioner:
New Mexico Commissioner of Public Lands
Attn: Oil Gas Minerals Division
P.O. Box 1148
Santa Fe, New Mexico 87504-1148
Phone: (505) 827-5760

With copy to:
New Mexico State Land Office
General Counsel
P.O. Box 1148
Santa Fe, NM 87504-1148
Phone: (505) 827-5756

Notice to Grantee:
Apache Corporation
Attn: Larry Baker
303 Veterans Airpark Lane
Midland, Texas 79705
Phone: (432) 631-6982
Email: larry.baker@apachecorp.com

IN WITNESS WHEREOF, the Commissioner of Public Lands and the Grantee have signed this Easement to be effective on the date signed by the Commissioner.

GRANTEE:
APACHE CORPORATION

By: Larson and Associates Date: 5/6/21

Name: Robert Nelson

Title: Geologist

ACKNOWLEDGMENT IN A REPRESENTATIVE CAPACITY

State of Texas

County of Midland

This instrument was acknowledged before me on May 6, 2021 (date) by Robert Nelson (name) as Geologist (title) of Larson and Associates

(name of party on behalf of whom instrument is executed).

(Signature of notarial officer)

(seal)

TERESA PALMER
Notary Public, State of Texas
Notary ID # 1107119-0
My Commission Expires
December 28, 2021

My commission expires: 12-28-2021

GRANTOR
NEW MEXICO COMMISSIONER OF PUBLIC LANDS

SEAL

S. Garcia Richard /GB

Stephanie Garcia Richard, Commissioner of Public Lands

Dated: 5/14/21

OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE

OFFICIAL RECEIPT NUMBER: 2 - 43136 DATE: 3-1721 FILE NO.: new

TOTAL: 10.00 RECEIVED: Ten DOLLARS CHECK NO.: 14861 CASH: _____

PAYOR: Larson & Assoc ADDRESS: Box 50685 CITY: Midland STATE: Tx

ZIP: 79710 RECEIVED BY: ym

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.

A. Ground Water Filing Fees

___	1. Change of Ownership of Water Right	$ 2.00
___	2. Application to Appropriate or Supplement Domestic 72-12-1 Well	$ 125.00
___	3. Application to Repair or Deepen 72-12-1 Well	$ 75.00
___	4. Application for Replacement 72-12-1 Well	$ 75.00
___	5. Application to Change Purpose of Use 72-12-1 Well	$ 75.00
___	6. Application for Stock Well/Temp. Use	$ 5.00
___	7. Application to Appropriate Irrigation, Municipal, or Commercial Use	$ 25.00
___	8. Declaration of Water Right	$ 1.00
___	9. Application for Additional Point of Diversion Non 72-12-1 Per Well	$ 25.00
___	10. Application to Change Place or Purpose of Use Non 72-12-1 Well	$ 25.00
___	11. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	$ 50.00
___	12. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water	$ 50.00
___	13. Application to Change Point of Diversion of Non 72-12-1 Well	$ 25.00
___	14. Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
2-Y	15. Application for Test, Expl. Observ. Well	$ 5.00
___	16. Application for Extension of Time	$ 25.00
___	17. Proof of Application to Beneficial Use	$ 25.00
___	18. Notice of Intent to Appropriate	$ 25.00

B. Surface Water Filing Fees

___	1. Change of Ownership of a Water Right	$ 5.00
___	2. Declaration of Water Right	$ 10.00
___	3. Amended Declaration	$ 25.00
___	4. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water	$ 200.00
___	5. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water	$ 200.00
___	6. Application to Change Point of Diversion	$ 100.00
___	7. Application to Change Place and/or Purpose of Use	$ 100.00
___	8. Application to Appropriate	$ 25.00
___	9. Notice of Intent to Appropriate	$ 25.00
___	10. Application for Extension of Time	$ 50.00
___	11. Supplemental Well to a Surface Right	$ 100.00
___	12. Return Flow Credit	$ 100.00
___	13. Proof of Completion of Works	$ 25.00
___	14. Proof of Application of Water to Beneficial Use	$ 25.00
___	15. Water Development Plan	$ 100.00
___	16. Declaration of Livestock Water Impoundment	$ 10.00
___	17. Application for Livestock Water Impoundment	$ 10.00

All fees are non-refundable.

C. Well Driller Fees

___	1. Application for Well Driller's License	$ 50.00
___	2. Application for Renewal of Well Driller's License	$ 50.00
___	3. Application to Amend Well Driller's License	$ 50.00

D. Reproduction of Documents

___ @ 0.25¢ $_____

___ Map(s) $_____

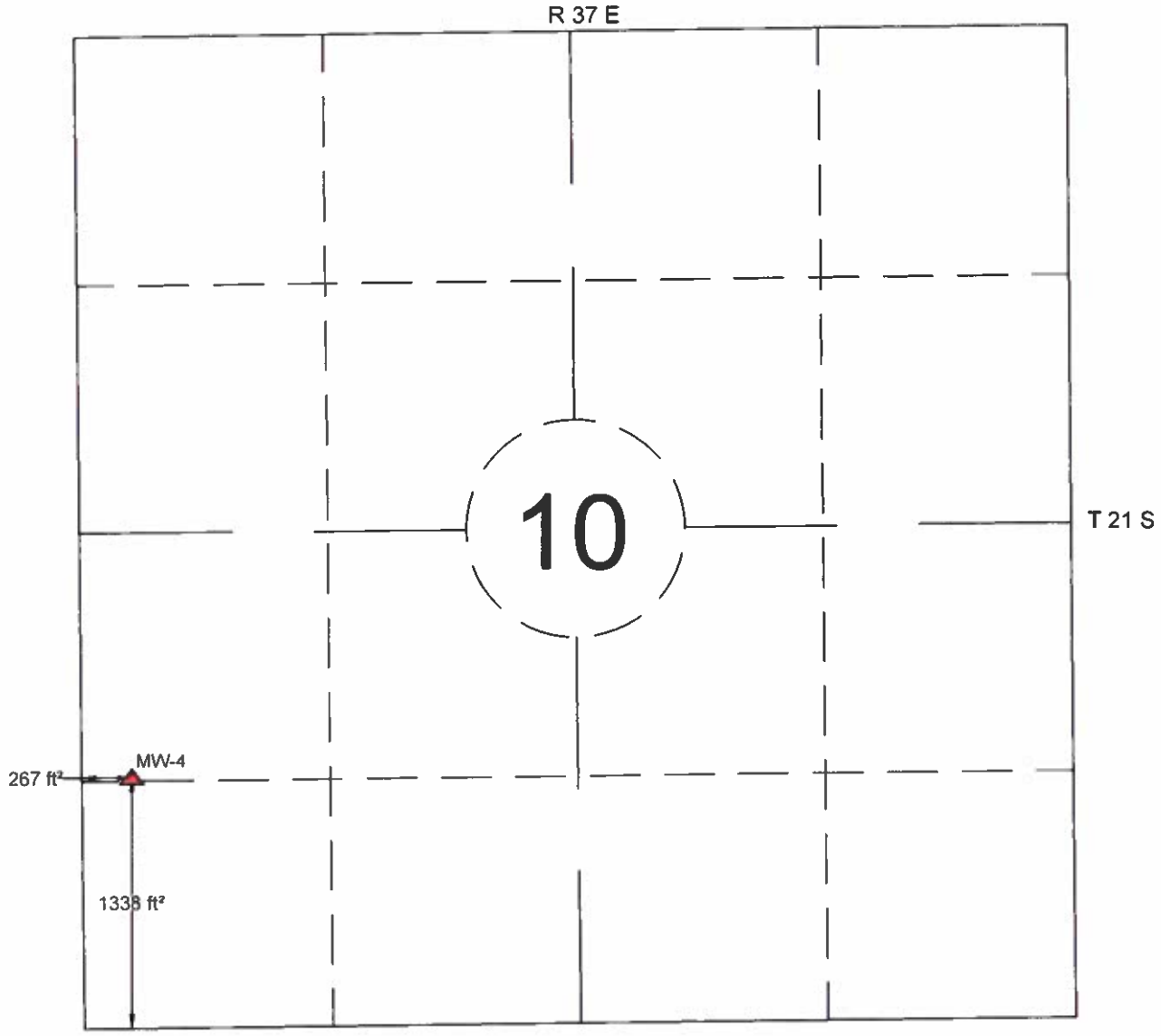
E. Certification $_____

F. Other $_____

G. Comments:

Fed X


MW-4
32°29'23.3232"N,
103°09'30.9312"W
MW-5
32°29'21.8868"N,
103°09'29.6928"W
RECEIVED MAR 17 2021 8:43:01
100
0
100
Graphic Scale in Feet
Apache Corporation
NEDU #527
Unit L (NW 1/4 of SW 1/4)
Sec. 10, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 29' 23.32"N,
103° 09' 30.93" W
Larson & Associates, Inc.
Environmental Consultants
Legend
MW-4
- Proposed Monitoring Well Location



880 0 880

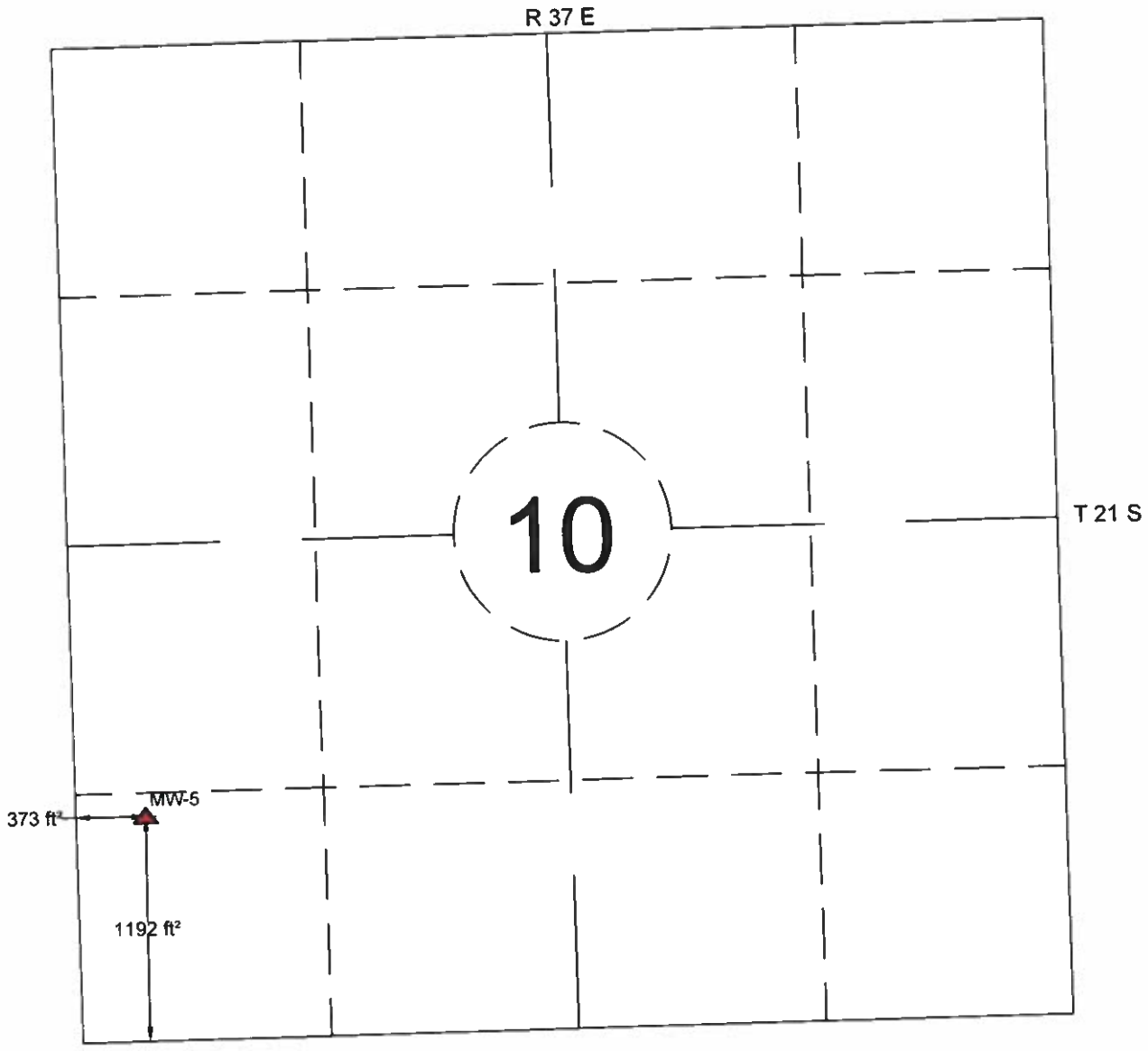
Apache Corporation
NEDU #527
Unit L (NW 1/4 of SW 1/4)
Sec. 10, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 29' 23.32"N,
103° 09' 30.93" W

Larson & Associates, Inc.
Environmental Consultants

Legend

MW-4 - Proposed Monitoring Well Location

Figure 2a - Proposed Monitoring Well Location MW-4



1000 0 1000

Graphic Scale in Feet

Apache Corporation
NEDU #527
Unit L (NW 1/4 of SW 1/4)
Sec. 10, T. 21 S., R. 37 E.
Lea County, New Mexico
32° 29' 23.32"N,
103° 09' 30.93" W

Larson & Associates, Inc.
Environmental Consultants

Legend

MW-5 - Proposed Monitoring Well Location

Figure 2b - Proposed Monitoring Well Location MW-5

Appendix E

Well Logs and Completion Records

SCARBOROUGH DRILLING, INC.
TEST HOLES • WATER WELLS
P.O. Box 305 - Ph. 806-872-3285 or 872-9349
LAMESA, TEXAS 79331
2001 South Hwy. 87

Larson MW-5

WELL LOG NEDU527

From	To	FORMATION
0	10	Caliche
10	35	Sand, w/cemented layers + caliche streaks
35	76	Fine Sand, (loose)

Date 5-25-21 Driller Scarborough

GIBBS PRINTING CO.-LAMESA, TX

SCARBOROUGH DRILLING, INC.
TEST HOLES • WATER WELLS
P.O. Box 305 - Ph. 806-872-3285 or 872-9349
LAMESA, TEXAS 79331
2001 South Hwy. 87

Larson MW-4

WELL LOG NEDU527

From	To	FORMATION
0	20	Caliche
20	40	Sand w/cemented layers
40	76	Sand (loose sand)

Date 5-25-21 Driller Scarborough

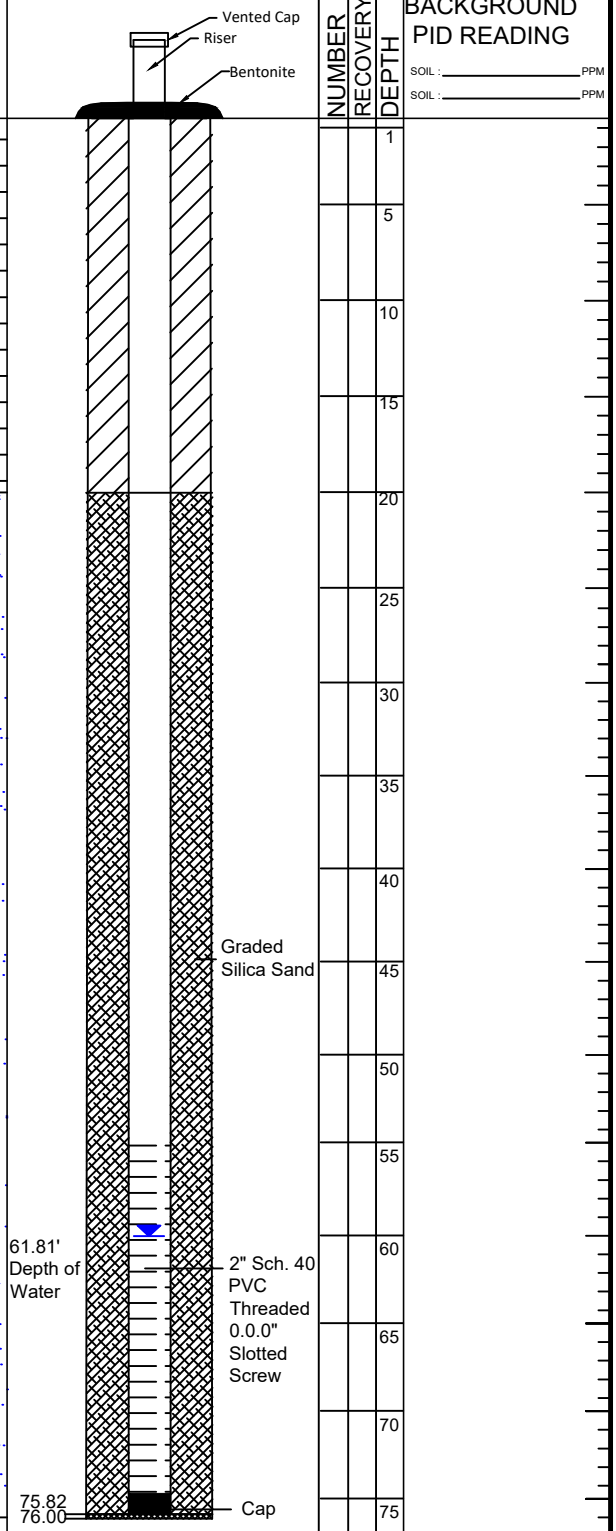
GIBBS PRINTING CO.-LAMESA, TX

BORING RECORD

Start: 12:15
Finish: 13:40 MST

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	5	Caliche, 7.5YR 8/1, White, Well Cement	Caliche	
	10			
	15	2.5YR 8/2, Pinkish White,Moderate Cement,		
	20	Fine Sand, 7YR 7/4, Light Reddidh Brown, Poor Cemented, Moderately Sorted, Sub Rounded	SW	
	25			
	30			
	35			
	40	Very Fine Sand, 7YR 7/4, Light Reddidh Brown, Sub Angular - Sub Rounded, Moderately Sorted		
	45			
	50			
Circulating Water	55			
	60		SW	
	65			
	70			
	75	TD: 76'		



NUMBER	RECOVERY	DEPTH
		1
		5
		10
		15
		20
		25
		30
		35
		40
		45
		50
		55
		60
		65
		70
		75

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

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

JOB NUMBER : Apache/ 19-0112-18
HOLE DIAMETER : 5"
LOCATION : NEDU 527, Lea County
LAI GEOLOGIST : D. St.Germain
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 5/25/2021

BORING NUMBER : MW-4
CP-1868 PO 1

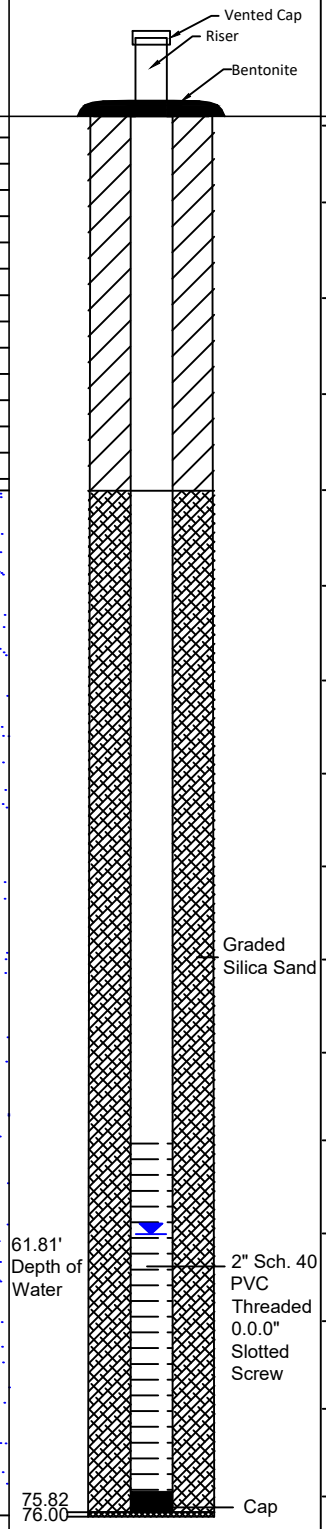
BORING RECORD

Start: 12:15
Finish: 13:40 MST

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0		
	5	Caliche, 7.5YR 8/1, White, Well Cement	Caliche
	10		
	15	2.5YR 8/2, Pinkish White,Moderate Cement,	
	20	Fine Sand, 7YR 7/4, Light Reddidh Brown, Poor Cemented, Moderately Sorted, Sub Rounded	SW
	25		
	30		
	35		
	40	Very Fine Sand, 7YR 7/4, Light Reddidh Brown, Sub Angular - Sub Rounded, Moderately Sorted	
	45		
	50		
Circulating Water	55		
	60		SW
	65		
	70		
	75	TD: 76'	

GRAPHIC LOG



NUMBER	RECOVERY	DEPTH
		1
		5
		10
		15
		20
		25
		30
		35
		40
		45
		50
		55
		60
		65
		70
		75

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

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

JOB NUMBER : Apache/ 19-0112-18
HOLE DIAMETER : 5"
LOCATION : NEDU 527, Lea County
LAI GEOLOGIST : D. St.Germain
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

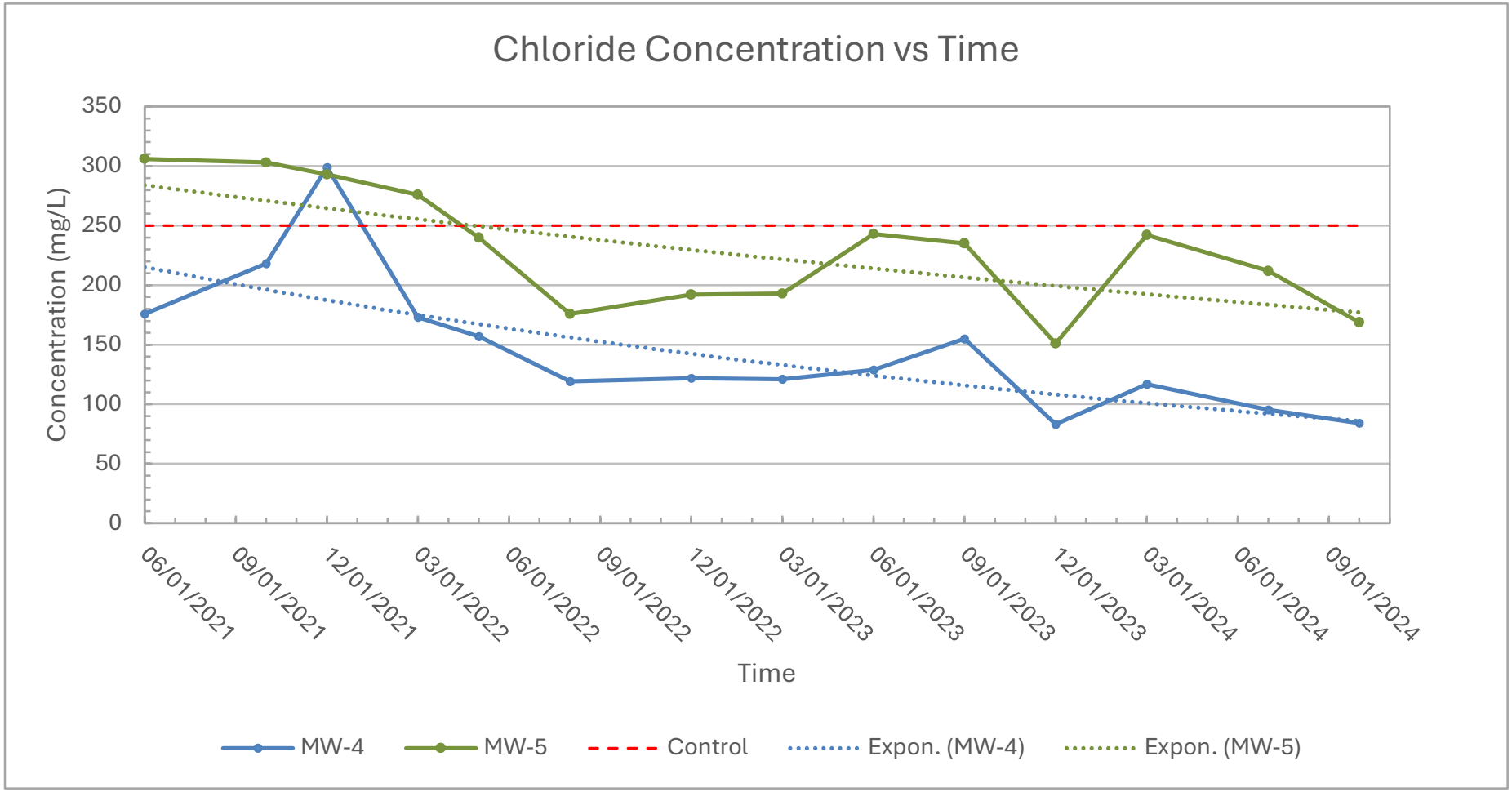
Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 5/25/2021

BORING NUMBER : MW-4
CP-1868 PO 1

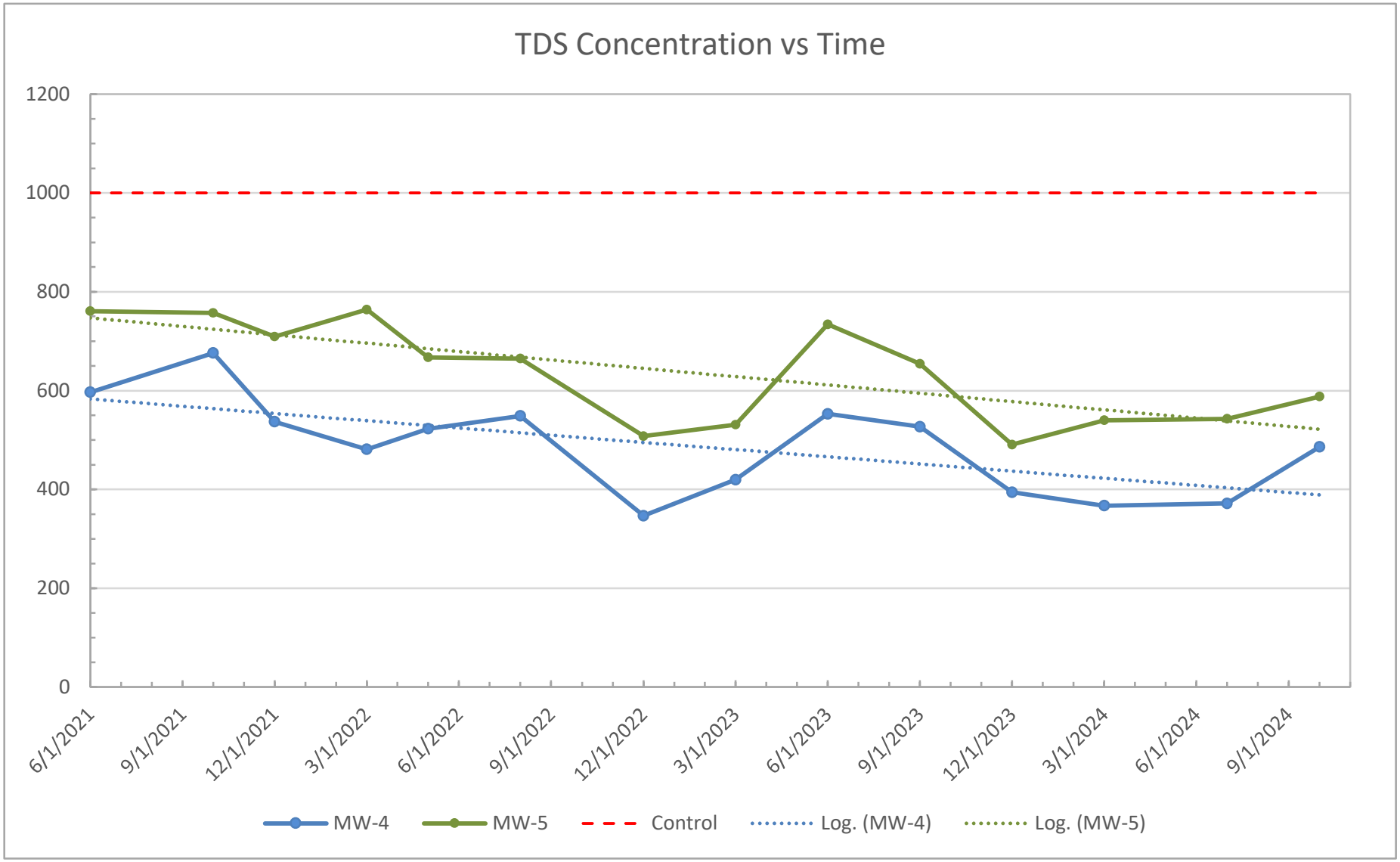
Appendix F

Chloride Control Chart


Chloride Concentration vs Time
Concentration (mg/L)
350
300
250
200
150
100
50
0
06/01/2021
09/01/2021
12/01/2021
03/01/2022
06/01/2022
09/01/2022
12/01/2022
03/01/2023
06/01/2023
09/01/2023
12/01/2023
03/01/2024
06/01/2024
09/01/2024
Time
MW-4
MW-5
Control
Expon. (MW-4)
Expon. (MW-5)

Appendix G

TDS Control Chart


TDS Concentration vs Time
1200
1000
800
600
400
200
0
6/1/2021
9/1/2021
12/1/2021
3/1/2022
6/1/2022
9/1/2022
12/1/2022
3/1/2023
6/1/2023
9/1/2023
12/1/2023
3/1/2024
6/1/2024
9/1/2024
MW-4
MW-5
Control
Log. (MW-4)
Log. (MW-5)

Appendix H

Laboratory Report

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 10/22/2024 3:46:41 PM

JOB DESCRIPTION

NEDU 527

JOB NUMBER

880-49870-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

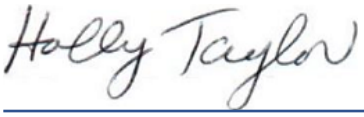
Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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10/22/2024 3:46:41 PM

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

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Laboratory Job ID: 880-49870-1

Table of Contents

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project/Site: NEDU 527

Qualifiers

GC 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.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project: NEDU 527

Job ID: 880-49870-1 Eurofins Midland

Job Narrative
880-49870-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/16/2024 12:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -6.8°C.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-93799 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

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

Client Sample Results

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project/Site: NEDU 527

Client Sample ID: MW-4 Lab Sample ID: 880-49870-1

Date Collected: 10/15/24 13:41 **Matrix: Water**
Date Received: 10/16/24 12:49

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			10/21/24 23:26	1
Toluene	<0.00200	U	0.00200		mg/L			10/21/24 23:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			10/21/24 23:26	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			10/21/24 23:26	1
o-Xylene	<0.00200	U	0.00200		mg/L			10/21/24 23:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			10/21/24 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*10/21/24 23:26*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*		*10/21/24 23:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			10/21/24 23:26	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**84.1**	**F1**	2.50		mg/L			10/22/24 07:43	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**486**		50.0		mg/L			10/18/24 17:00	1

Client Sample ID: MW-5 Lab Sample ID: 880-49870-2

Date Collected: 10/15/24 13:01 **Matrix: Water**
Date Received: 10/16/24 12:49

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			10/21/24 23:46	1
Toluene	<0.00200	U	0.00200		mg/L			10/21/24 23:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			10/21/24 23:46	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			10/21/24 23:46	1
o-Xylene	<0.00200	U	0.00200		mg/L			10/21/24 23:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			10/21/24 23:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*10/21/24 23:46*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*10/21/24 23:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			10/21/24 23:46	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**169**		2.50		mg/L			10/22/24 08:04	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**588**		50.0		mg/L			10/18/24 17:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

Client Sample ID: Dup-1

Date Collected: 10/15/24 00:00
Date Received: 10/16/24 12:49

Lab Sample ID: 880-49870-3

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			10/22/24 00:07	1
Toluene	<0.00200	U	0.00200		mg/L			10/22/24 00:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			10/22/24 00:07	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			10/22/24 00:07	1
o-Xylene	<0.00200	U	0.00200		mg/L			10/22/24 00:07	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			10/22/24 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*10/22/24 00:07*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*10/22/24 00:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			10/22/24 00:07	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**		2.50		mg/L			10/22/24 08:11	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**576**		50.0		mg/L			10/18/24 17:00	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

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)
880-49870-1	MW-4	102	102
880-49870-2	MW-5	101	101
880-49870-3	Dup-1	103	101

Surrogate Legend

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

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB2	DFBZ2
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
LCS 880-93757/27	Lab Control Sample	104	101
LCSD 880-93757/28	Lab Control Sample Dup	111	102
MB 880-93757/32	Method Blank	101	96
MB 880-93762/5-A	Method Blank	98	96

Surrogate Legend

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

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-93757/32
Matrix: Water
Analysis Batch: 93757

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			10/21/24 20:40	1
Toluene	<0.00200	U	0.00200		mg/L			10/21/24 20:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			10/21/24 20:40	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			10/21/24 20:40	1
o-Xylene	<0.00200	U	0.00200		mg/L			10/21/24 20:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			10/21/24 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*10/21/24 20:40*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*		*10/21/24 20:40*	*1*

Lab Sample ID: LCS 880-93757/27
Matrix: Water
Analysis Batch: 93757

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	0.09555		mg/L		96	70 - 130		
Toluene			0.100	0.09387		mg/L		94	70 - 130		
Ethylbenzene			0.100	0.1036		mg/L		104	70 - 130		
m,p-Xylenes			0.200	0.1906		mg/L		95	70 - 130		
o-Xylene			0.100	0.1063		mg/L		106	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-93757/28
Matrix: Water
Analysis Batch: 93757

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	0.09767		mg/L		98	70 - 130	2	20
Toluene			0.100	0.09577		mg/L		96	70 - 130	2	20
Ethylbenzene			0.100	0.1047		mg/L		105	70 - 130	1	20
m,p-Xylenes			0.200	0.1929		mg/L		96	70 - 130	1	20
o-Xylene			0.100	0.1076		mg/L		108	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 880-93762/5-A
Matrix: Water
Analysis Batch: 93757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93762

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L		10/21/24 09:11	10/21/24 11:58	1
Toluene	<0.00200	U	0.00200		mg/L		10/21/24 09:11	10/21/24 11:58	1

QC Sample Results

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project/Site: NEDU 527

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

Lab Sample ID: MB 880-93762/5-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93757 **Prep Batch: 93762**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/L		10/21/24 09:11	10/21/24 11:58	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L		10/21/24 09:11	10/21/24 11:58	1
o-Xylene	<0.00200	U	0.00200		mg/L		10/21/24 09:11	10/21/24 11:58	1
Xylenes, Total	<0.00400	U	0.00400		mg/L		10/21/24 09:11	10/21/24 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*10/21/24 09:11*	*10/21/24 11:58*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/21/24 09:11*	*10/21/24 11:58*	*1*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-93799/3 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93799

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			10/22/24 07:23	1

Lab Sample ID: LCS 880-93799/4 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93799

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	24.90		mg/L		100	90 - 110		

Lab Sample ID: LCSD 880-93799/5 **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93799

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.62		mg/L		102	90 - 110	3	20

Lab Sample ID: 880-49870-1 MS **Client Sample ID: MW-4**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93799

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	84.1	F1	125	236.3	F1	mg/L		122	90 - 110		

Lab Sample ID: 880-49870-1 MSD **Client Sample ID: MW-4**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 93799

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	84.1	F1	125	236.5	F1	mg/L		122	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

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

Lab Sample ID: MB 880-93719/1
Matrix: Water
Analysis Batch: 93719

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			10/18/24 17:00	1

Lab Sample ID: LCS 880-93719/2
Matrix: Water
Analysis Batch: 93719

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	1072		mg/L		107	80 - 120		

Lab Sample ID: LCSD 880-93719/3
Matrix: Water
Analysis Batch: 93719

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	1031		mg/L		103	80 - 120	5	10

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project/Site: NEDU 527

GC VOA

Analysis Batch: 93757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-49870-1	MW-4	Total/NA	Water	8021B	
880-49870-2	MW-5	Total/NA	Water	8021B	
880-49870-3	Dup-1	Total/NA	Water	8021B	
MB 880-93757/32	Method Blank	Total/NA	Water	8021B	
MB 880-93762/5-A	Method Blank	Total/NA	Water	8021B	93762
LCS 880-93757/27	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-93757/28	Lab Control Sample Dup	Total/NA	Water	8021B	

Prep Batch: 93762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-93762/5-A	Method Blank	Total/NA	Water	5035	

Analysis Batch: 93846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-49870-1	MW-4	Total/NA	Water	Total BTEX	
880-49870-2	MW-5	Total/NA	Water	Total BTEX	
880-49870-3	Dup-1	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 93799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-49870-1	MW-4	Total/NA	Water	300.0	
880-49870-2	MW-5	Total/NA	Water	300.0	
880-49870-3	Dup-1	Total/NA	Water	300.0	
MB 880-93799/3	Method Blank	Total/NA	Water	300.0	
LCS 880-93799/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-93799/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-49870-1 MS	MW-4	Total/NA	Water	300.0	
880-49870-1 MSD	MW-4	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 93719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-49870-1	MW-4	Total/NA	Water	SM 2540C	
880-49870-2	MW-5	Total/NA	Water	SM 2540C	
880-49870-3	Dup-1	Total/NA	Water	SM 2540C	
MB 880-93719/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-93719/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-93719/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc. Job ID: 880-49870-1
Project/Site: NEDU 527

Client Sample ID: MW-4 Lab Sample ID: 880-49870-1

Date Collected: 10/15/24 13:41 **Matrix: Water**
Date Received: 10/16/24 12:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	93757	10/21/24 23:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			93846	10/21/24 23:26	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	93799	10/22/24 07:43	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	93719	10/18/24 17:00	CH	EET MID

Client Sample ID: MW-5 Lab Sample ID: 880-49870-2

Date Collected: 10/15/24 13:01 **Matrix: Water**
Date Received: 10/16/24 12:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	93757	10/21/24 23:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			93846	10/21/24 23:46	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	93799	10/22/24 08:04	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	93719	10/18/24 17:00	CH	EET MID

Client Sample ID: Dup-1 Lab Sample ID: 880-49870-3

Date Collected: 10/15/24 00:00 **Matrix: Water**
Date Received: 10/16/24 12:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	93757	10/22/24 00:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			93846	10/22/24 00:07	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	93799	10/22/24 08:11	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	93719	10/18/24 17:00	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Job ID: 880-49870-1
Project/Site: NEDU 527

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	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: NEDU 527

Job ID: 880-49870-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-49870-1	MW-4	Water	10/15/24 13:41	10/16/24 12:49
880-49870-2	MW-5	Water	10/15/24 13:01	10/16/24 12:49
880-49870-3	Dup-1	Water	10/15/24 00:00	10/16/24 12:49

No. 3379

CHAIN-OF-CUSTODY

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

Data Reported to:

DATE: 10/16/2024 PAGE 1 OF 1

PO#: _____ LAB WORK ORDER#: 49870

PROJECT LOCATION OR NAME: NEDU 527

LAI PROJECT #: 19-0112-18 COLLECTOR: IR/BB

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MNT/NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESSERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | OIL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
MW-4		10/15/24	1341	W	4	X			X		X BTEX; X TDS; X Cl	DIRECT BILL
MW-5		"	1301	"	1	X			X		X BTEX; X TDS; X Cl	APACHE
Dup-1		"	—	"	1	X			X		X BTEX; X TDS; X Cl	
TOTAL 3						3						

880-49870 Chain of Custody

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	10/15/24 1249	[signature]
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: EUROFINS

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

LABORATORY USE ONLY:
RECEIVING TEMP: -6.7 THERM#: -6.8
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

Login Sample Receipt Checklist

Client: Larson & Associates, Inc. Job Number: 880-49870-1

Login Number: 49870 **List Source: Eurofins Midland**
List Number: 1
Creator: Vasquez, Julisa

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	

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: 404908
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 3rd Quarter 2024 Groundwater Monitoring Report for Northeast Drinkard Unit 527: content accepted for record. 1. Abatement Closure Report was submitted in August 2024 and is currently under review by the OCD. 2. It has been observed that MW-1, MW-2, and MW-3 have not been sampled, nor do any of the wells contain information other than being "Dry," and the well diameter of 2 inches. If there is no information on these three wells in any other document in the incident file that demonstrates eight (8) consecutive sampling events, or other approval for a lesser number of samples, Apache will be required to submit a variance under part 29 for the lack of information for these wells, or drill each well deeper until groundwater is encountered for sampling, in order to obtain abatement closure for this site. If there is other information on the history of these wells and data that hasn't been submitted, please upload the information into the incident file within sixty (60) days.	12/2/2024
michael.buchanan	3. Please continue as planned by sampling MW-4 and MW-5 and submit the next quarterly report by February 1, 2025. 4. Include defined groundwater direction, this needs to have been established by at least three monitoring wells, but is not in report other than what's apparent.	12/2/2024