REVIEWED
By Mike Buchanan at 1:36 pm, Jun 03, 2024

MAVERICK
NATURAL RESOURCES

Review of the 2022 Annual Report for MCA 357: Content Satisfactory
1. Proceed with plans to change groundwater sampling frequencies at the site from annual to semi-annual.
2. Please submit the 2023 annual report (if it hasn't already been submitted to OCD)
3. Submit the 2024 Annual Monitoring Report to OCD by April 1, 2025.

2022 Annual Report

MCA 357 (1RP-3025)
Lea County, New Mexico

#212C-HN-02007
January 27, 2023

TETRA TECH

2022 Annual Report

MCA 357 (1RP-3025)
Lea County, New Mexico

#212C-HN-02007
January 27, 2023

PRESENTED TO

Maverick Natural Resources, LLC
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Hobbs, NM 88240

PRESENTED BY

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Program Manager

TETRA TECH

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APPENDICES

1.0 INTRODUCTION

On behalf of Maverick Natural Resources, LLC (Maverick), this report details the continuing groundwater monitoring and remedial activities at the Maverick Natural Resources, LLC (Maverick) MCA 357 Site in Lea County, New Mexico (Site). The Site is located in Unit M, Section 28, T17S, R32E, approximately 3.7 miles south of Maljamar, New Mexico, as shown in **Figure 1**. Groundwater monitoring and remediation at the Site are conducted under New Mexico Oil Conservation District (NMOCD) Administrative/Environmental Order AP-115-1. The Site and surrounding areas are rural grasslands used primarily for oil and gas production.

2.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

In December 2013, the Site operator submitted a Release Notification and Corrective Action Form C-141 to the NMOCD detailing a release with the source recorded as a flowline failure due to external corrosion. The release affected approximately 5,600 square feet of ground surface and pasture in the vicinity of the flowline failure. The Release Notification documents an estimated 24 barrels (bbls) of produced water was released and no fluids were subsequently recovered.

Previous environmental assessment activities include a drilling and soil sampling program, analytical laboratory analyses, and preliminary determinations of impacts to environmental media. Based on the preliminary determinations, a Corrective Action Plan (CAP) was submitted to the NMOCD in October 2014, approved in October 2014, and completed in December 2014.

Following the CAP approval, groundwater samples in the source area indicated the concentrations of chloride in groundwater (39,500 milligrams per liter [mg/L]) were reported at concentrations greater than the New Mexico Water Quality Control Commission (NMWQCC) guidance levels of 250 mg/L.

Four additional monitor wells (MW-2 through MW-5) were installed at the Site in September 2017, monitor wells MW-6 through MW-9 were installed in April 2019, monitor wells MW-10 through MW-12 were installed in April 2020, and monitor well MW-13 was installed in September 2020. Monitor wells MW-6, MW-11, MW-12, and MW-13 have been dry since installation. Phase-separated hydrocarbons (PSH) have not been historically measured at the Site.

Previously the Site was owned and operated by ConocoPhillips up until June 2022 when Maverick took over operation of the Site.

3.0 HYDROGEOLOGY

3.1 GEOLOGY

The Site is located in the Querecho Plains of southeastern New Mexico. This area generally consists of a thin cover of Quaternary sand dunes overlying the undivided Triassic Upper Chinle Group. The soil consists of well-drained sand and sandy clay loam. Typically, the surface layer is reddish-brown loamy fine sand. It is underlain by red light sandy clay. Below this is white moderately to well-indurated caliche. Underlying the caliche are dark reddish shales and thin sandstones of the undivided Triassic Upper Chinle Group. The Upper Chinle Group consists of silty shale, thin-bedded to massive, purplish red to reddish-brown with greenish reduction spots. The Upper Chinle Group is interbedded with thin beds of fine-grained sandstone with chert pebble gravel.

3.2 SITE HYDROGEOLOGY

The water-bearing zone consists of the Pliocene-age Ogallala aquifer under unconfined conditions at the Site. The Ogallala aquifer is located at the base of the Ogallala Formation. In general, the Ogallala Formation consists of quartz sand and gravel that is poorly to well-cemented with calcium carbonate and contains minor amounts of clay. The wells installed at the Site were drilled to depths of approximately 100 to 135 feet below ground surface (bgs) with static groundwater water levels at approximately 83 to 119 feet bgs.

4.0 GROUNDWATER MONITORING

The Site is currently the subject of quarterly groundwater monitoring under the NMOCD-approved abatement plan. The 2022 quarterly groundwater monitoring events were performed in January, April, and October of 2022. Due to the transition of operations between Maverick and ConocoPhillips in mid-2022, the 3rd quarter 2022 groundwater monitoring event was not performed.

As part of the ongoing groundwater monitoring program approved by the NMOCD, The groundwater monitor well network at the Site is comprised of monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13, sampled on a quarterly basis, with samples submitted for analysis of bromide, chloride, sulfate, and total dissolved solids (TDS). Annual reports are prepared and submitted to the NMOCD before the end of the first quarter of the following year.

4.1 GROUNDWATER LEVEL MEASUREMENTS

Prior to purging and sampling the monitor well network, Tetra Tech personnel gauged each well to measure the depth to groundwater and the presence of PSH, if present. Groundwater level measurements are presented in **Table 1** along with calculated groundwater elevations. PSH was not identified in any of the Site wells in 2022. All of the monitoring wells in the Site monitoring well network were gauged during each groundwater monitoring event in 2022. Historical groundwater gauging data is presented in **Appendix C**.

Groundwater elevations ranged from 3,817.28 feet above mean sea level (AMSL) in MW-9 to 3,882.47 feet AMSL in MW-7 in 2022. Calculated groundwater elevations and the groundwater potentiometric surface maps for each groundwater monitoring event are presented in **Figures 3** through **5**. Groundwater flow at the Site is to the south with an average hydraulic gradient of 0.02436 feet per foot in 2022, generally consistent with historical groundwater flow at the Site.

4.2 GROUNDWATER SAMPLING

During the 2022 monitoring events, wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, and MW-9 were sampled. Low-flow sampling methodology was utilized to purge and sample each well using a bladder pump with dedicated disposable tubing and bladders in accordance with United States Environmental Protection Agency (EPA) guidance. The bladder pump intake was set to the approximate center of the screened interval for each monitor well prior to purging.

Groundwater quality parameters including temperature, pH, Specific Conductivity (SC), Dissolved Oxygen (DO), Oxygen Reduction Potential (ORP), and turbidity were recorded during purging in addition to well drawdown and flow rate to document monitor well stabilization. Once field parameters stabilized at each well, samples were collected into laboratory-provided pre-preserved sample containers, immediately placed on ice, and transported to Pace Analytical National in Mount Juliet, Tennessee, under chain-of-custody documentation for analysis of the following constituents of concern (COCs):

- Bromide by EPA Method 9056A;
- Chloride by EPA Method 9056A
- Sulfate by EPA Method 9056A; and
- Total dissolved solids (TDS) by Method 2540 C-2011.

4.3 GROUNDWATER ANALYTICAL RESULTS

During the January 2022 sampling event, monitoring wells MW-1 through MW-4 and MW-5 through MW-9 were sampled. Wells MW-6 and MW-10 through MW-13 did not contain enough water to sample. Chloride and TDS concentrations for all wells sampled exceeded the applicable NMWQCC Groundwater Quality Standards of 250 mg/L and 1,000 mg/L, respectively. Additionally, the sulfate concentration for MW-1 exceeded the NMWQCC standard of 600 mg/L during the January monitoring event. Two duplicate samples were collected from MW-1 during this event, both of which exceeded the NMWQCC standards for chloride and TDS. No additional exceedances were reported.

During the January, April, and October 2022 sampling events, chloride was reported at concentrations greater than NMWQCC standards in all of the sampled monitoring wells and TDS was reported at concentrations greater than the NMWQCC standards in all sampled monitoring wells except for MW-7 during the March and October groundwater monitoring events. Sulfate was only reported at a concentration greater than the NMWQCC standard in MW-1 during the January groundwater monitoring event. One duplicate sample was collected from MW-1 during each of the three groundwater monitoring events. No additional regulatory exceedances were reported during 2022.

The highest concentrations of chloride and TDS were reported in MW-1. Concentrations of chloride in MW-1 ranged from 55,800 mg/L in January 2022 to 10,200 mg/L in October 2022. Concentrations in the majority of monitor wells appear to be relatively stable. Concentrations of TDS in MW-1 ranged from 21,300 in April 2022 to 83,200 in January 2022. The January analytical results reported for the samples collected from MW-1 are believed to be anomalous due to the disturbance of settled fines in the well during sampling, and the concentrations reported during the April and October groundwater monitoring events are believed to be representative of COC concentrations at this location.

Table 2 presents a summary of the groundwater analytical results screened against NMWQCC Groundwater Quality Standards. The laboratory analytical data packages including chain-of-custody documentation are provided in **Appendix A**, chloride, sulfate, and TDS concentration maps are provided in **Figures 6** through **11**, and chloride concentration trend graphs are presented in **Appendix B**.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

A total of eight primary groundwater samples were collected and analyzed during each groundwater monitoring event in 2022. Additionally, two field duplicates in January and April and one field duplicate in October were collected and analyzed.

5.1 FIELD AND LABORATORY PRECISION

The project measurement quality objectives are 30 percent for relative-percent-difference (RPD) between primary and duplicate sample results for inorganic analytes including bromide, chloride, sulfate, and TDS. Where estimated concentrations are present and reported concentrations are J-flagged, the RPDs are elevated to 60 percent. **Table 3** presents primary and duplicate sample results and RPD calculations. Out of the 12 RPD calculations, the bromide, chloride, and TDS analytical results for the primary-duplicate sample pair for MW-1 during the January groundwater monitoring event were greater than the project data quality objectives of 30 percent.

During the January sampling event, Tetra Tech field staff experienced equipment problems with the bladder pump down the well during the sampling of MW-1. Consequently, settled fines from the bottom of this monitoring well are believed to have been disturbed, contributing to elevated COC concentrations in both the primary and duplicate samples and generating the disparity in reported concentrations between the primary and duplicate samples collected from MW-1 during this event. Additionally, reported COC concentrations at MW-1 were much higher than expected based on historical concentrations and concentrations reported in the April and October groundwater monitoring events at MW-1.

5.2 LABORATORY DATA QUALIFICATION

No laboratory analytical results were qualified in the three analytical data packages during the three 2022 groundwater monitoring events.

5.3 DATA USABILITY

Groundwater analytical data are deemed useable for the purpose of determining groundwater COC concentrations at the Site with the exception of primary and duplicate sample results collected from MW-1 during the January groundwater monitoring event. As discussed above, fines settled in MW-1 are believed to have been disturbed during sampling causing elevated analytical results of COCs analyzed. Otherwise, field duplicate samples reported results within Data quality objectives.

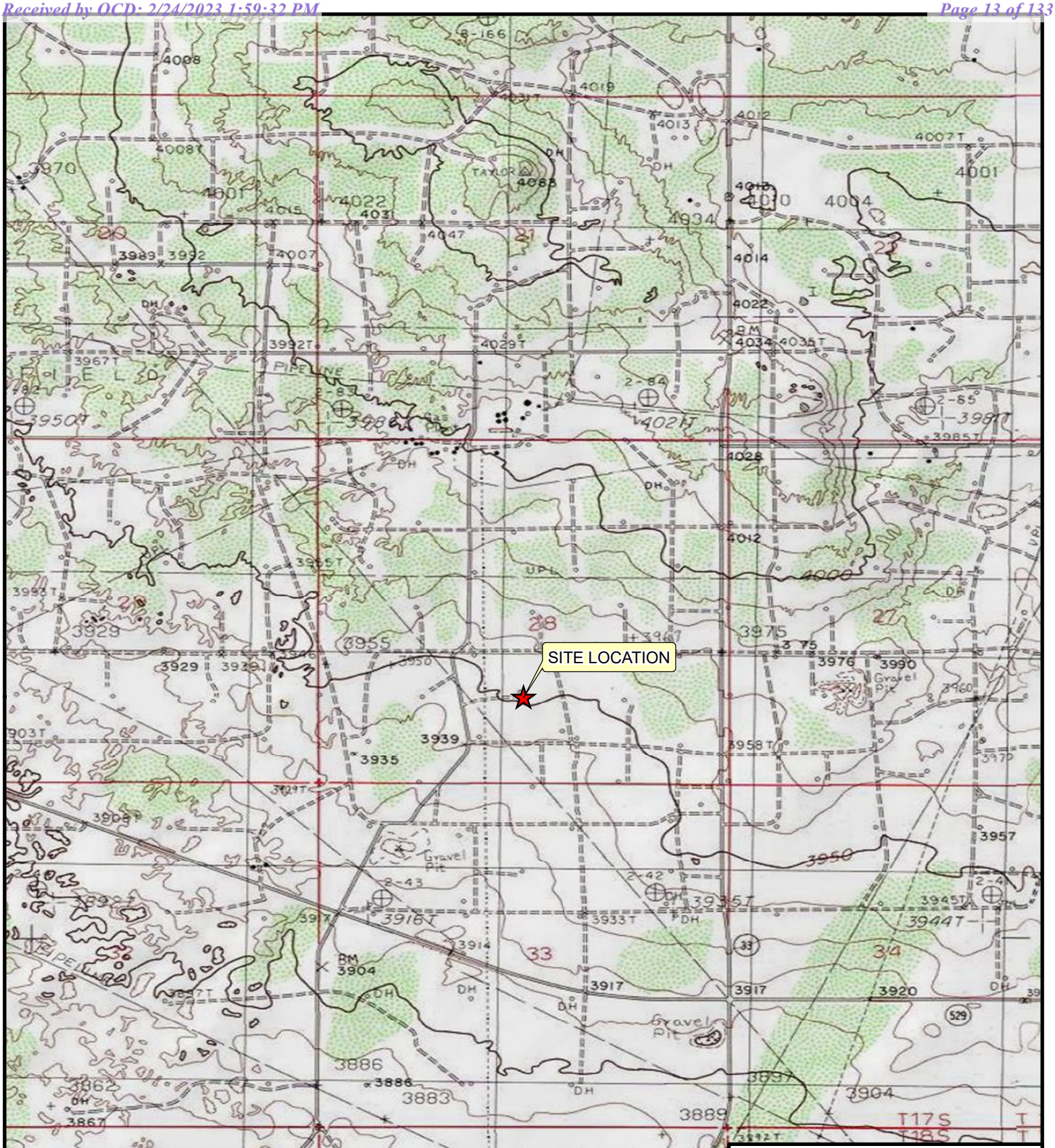
6.0 2023 WORKPLAN

Based on the size of the monitor well network and data accumulated to date, Tetra Tech previously requested the groundwater sampling program be reduced to a semi-annual basis in the *2021 Annual Monitoring and Remedial Activities Report* for the Site dated March 24, 2022. As of the date of this report, no response to this request has been received and Tetra Tech respectfully reiterates the request to shift the annual program to a Semi-annual basis with annual reporting to the NMOCD.

7.0 REFERENCES

Nicholson Jr., A. and Clebsch Jr., A.. (1961). Geology and Ground-Water Conditions in Souther Lea County, New Mexico. Socorro, NM: State Bureau of Mines and Mineral Resources and New Mexico Institute of Mining & Technology Campus Stationuthor.

FIGURES



MAVERICK NATURAL RESOURCES

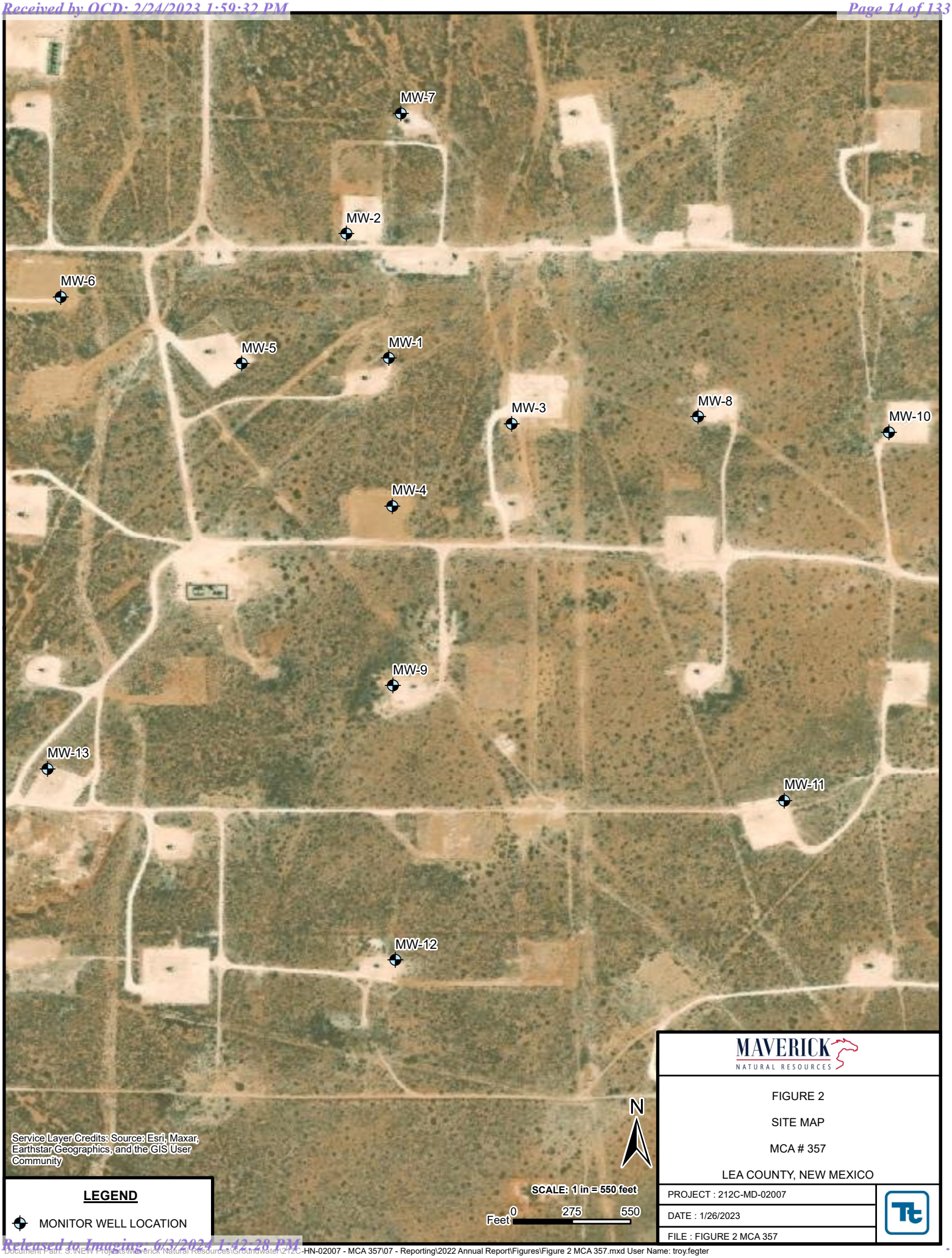
FIGURE 1

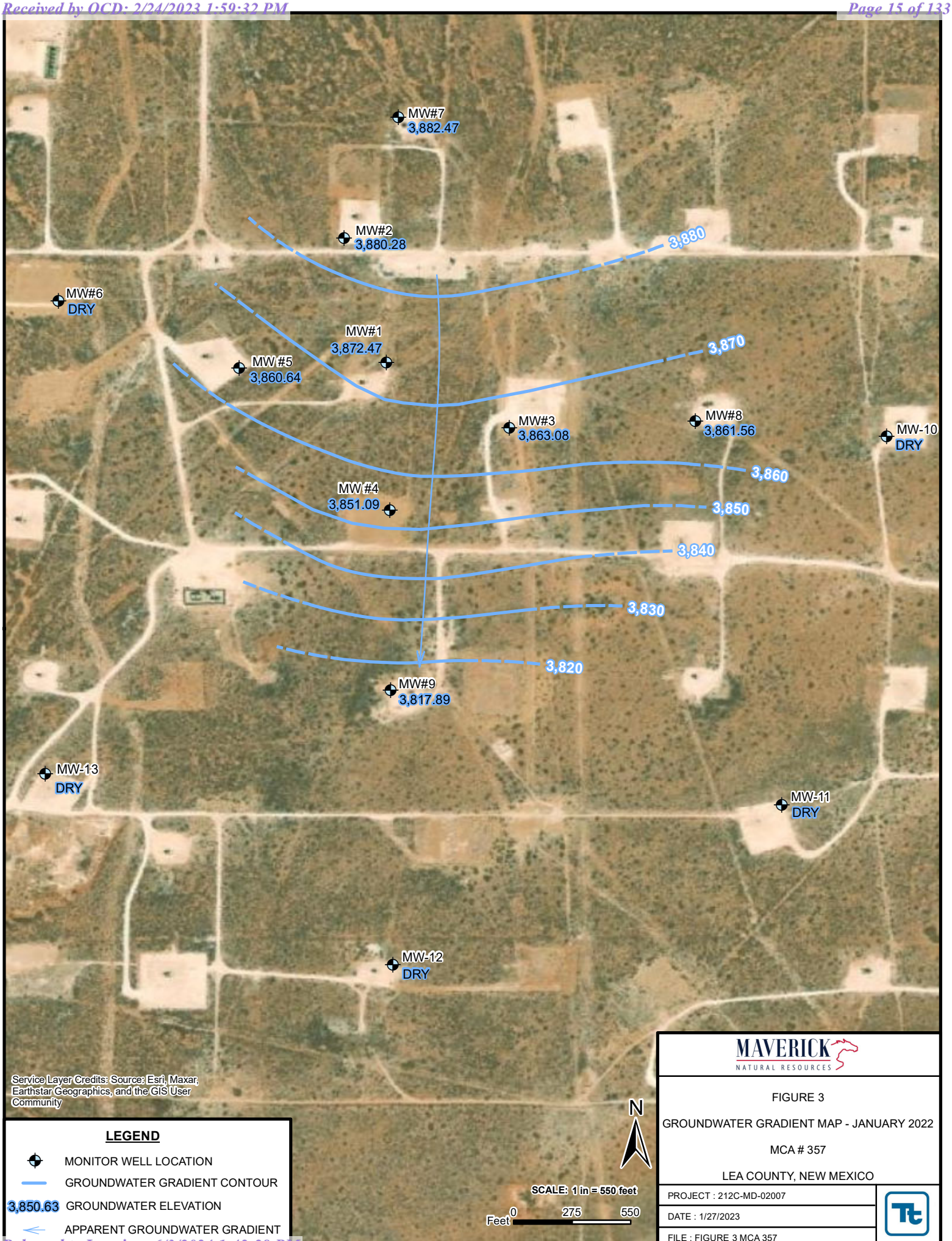
SITE LOCATION MAP

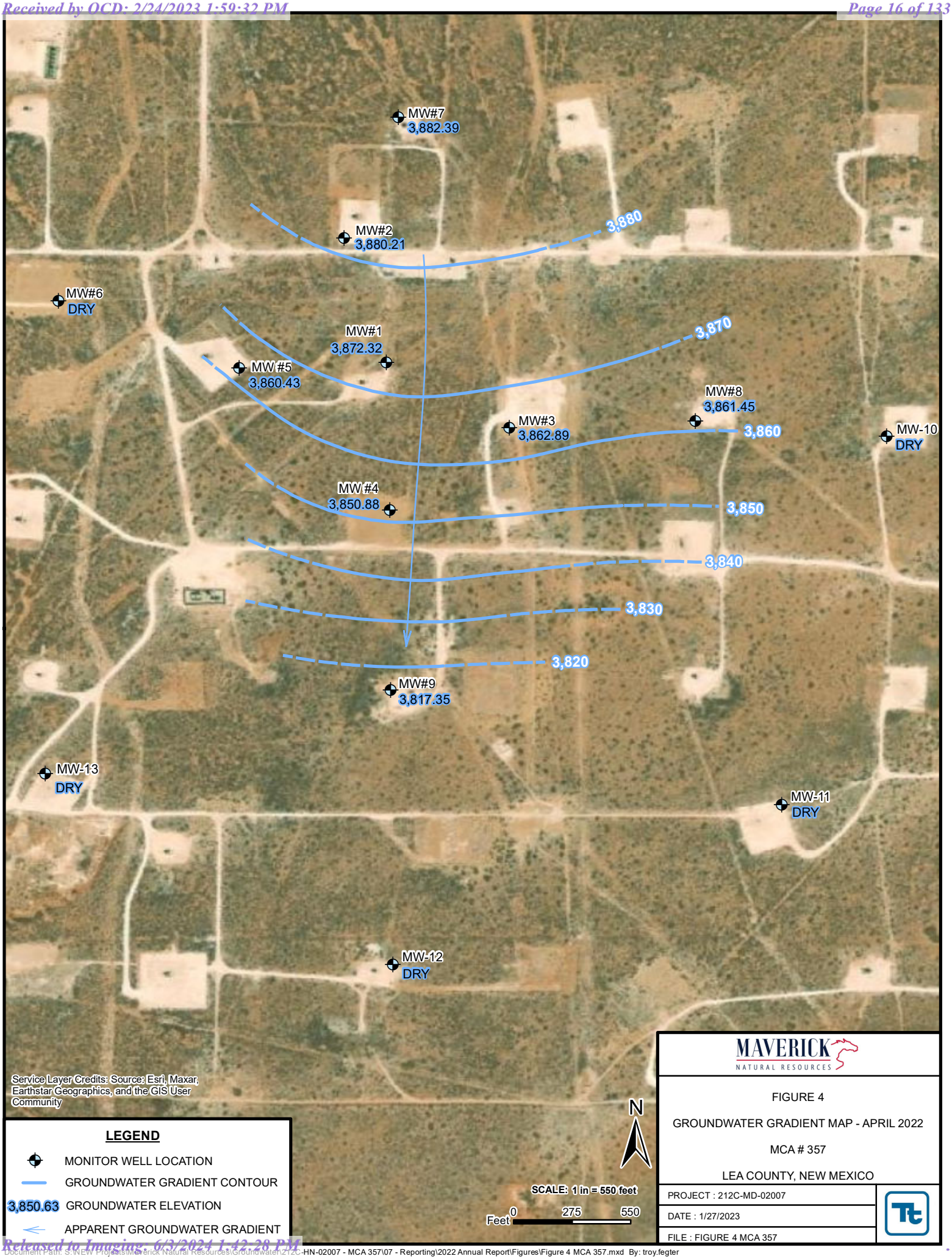
MCA # 357
(32.8019°,-103.7713°)

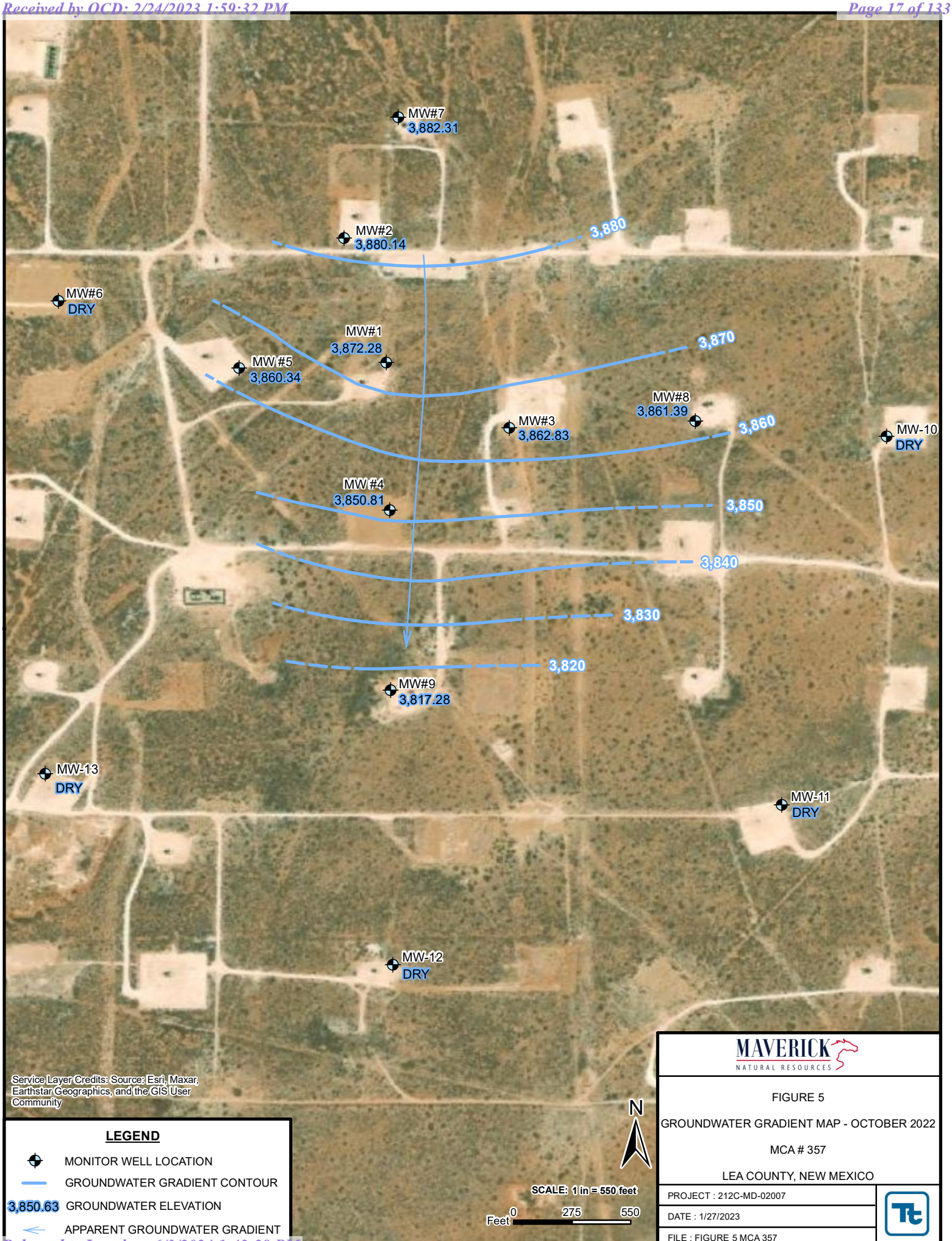
LEA COUNTY, NEW MEXICO

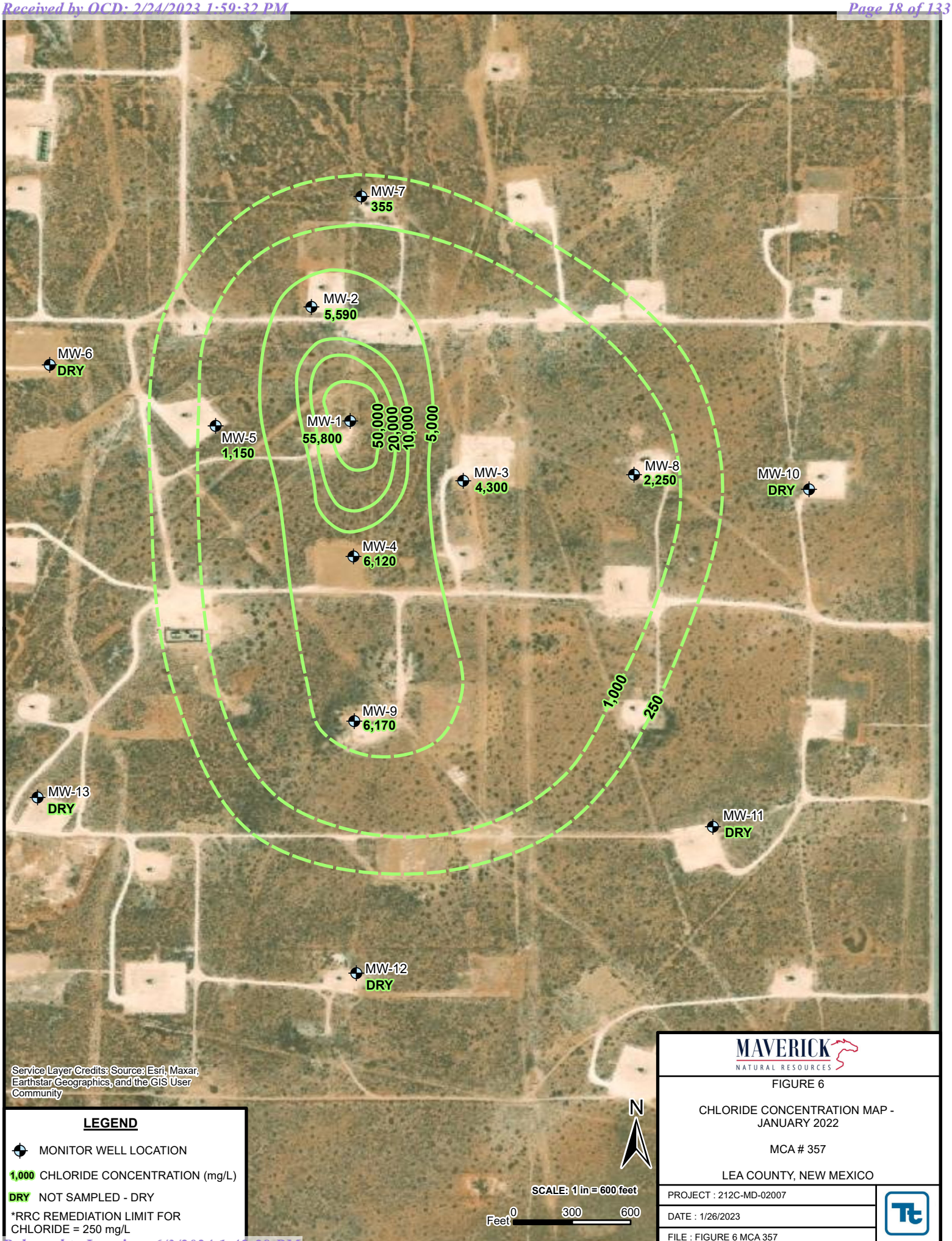
PROJECT : 212C-MD-02007	
DATE : 1/26/2023	
FILE : FIGURE 1 MCA 357	











LEGEND

- MONITOR WELL LOCATION
- 1,000 CHLORIDE CONCENTRATION (mg/L)
- DRY NOT SAMPLED - DRY
- *RRC REMEDIATION LIMIT FOR CHLORIDE = 250 mg/L

MAVERICK NATURAL RESOURCES

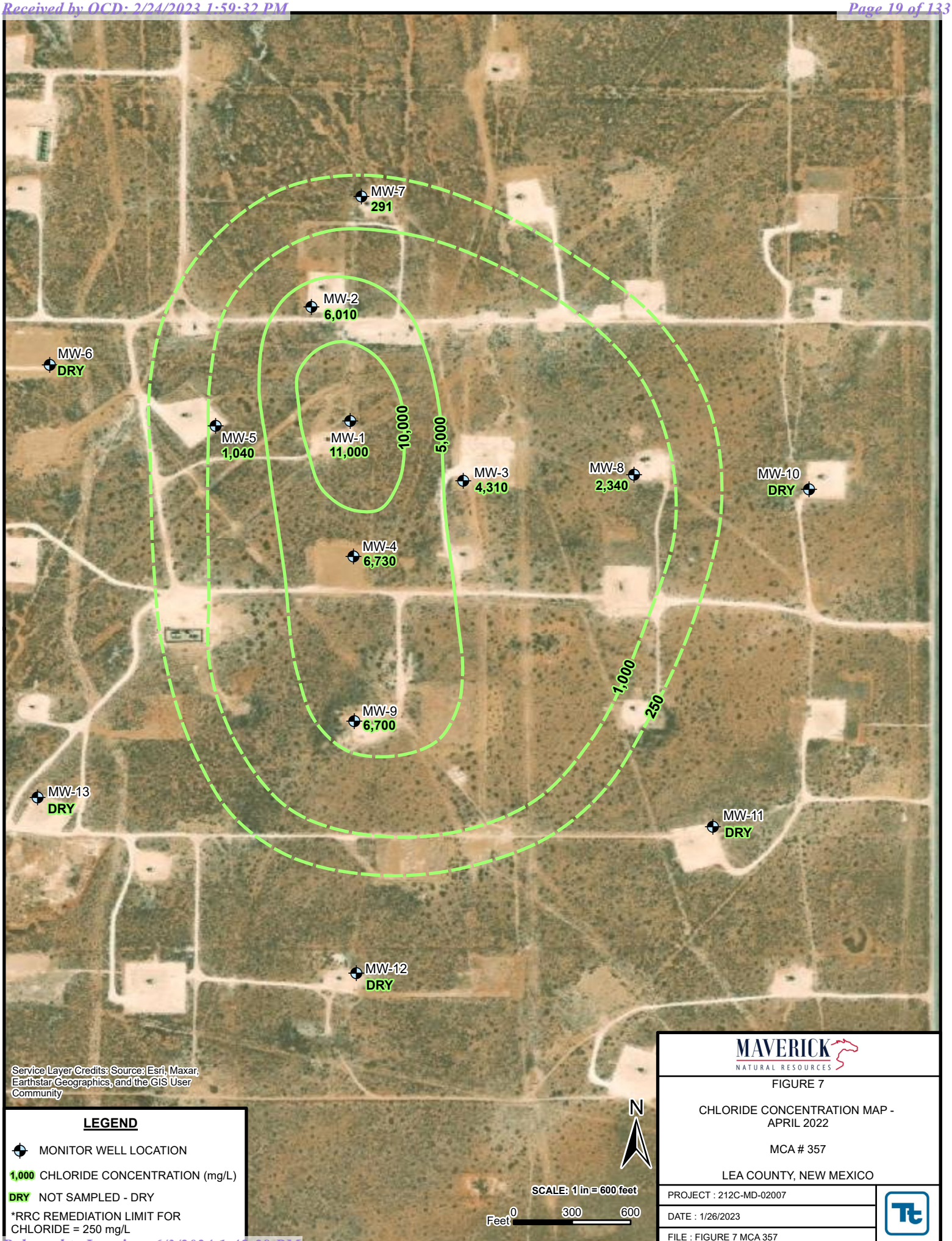
FIGURE 6

CHLORIDE CONCENTRATION MAP - JANUARY 2022

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02007	
DATE : 1/26/2023	
FILE : FIGURE 6 MCA 357	



LEGEND

- MONITOR WELL LOCATION
- 1,000 CHLORIDE CONCENTRATION (mg/L)
- DRY NOT SAMPLED - DRY
- *RRC REMEDIATION LIMIT FOR CHLORIDE = 250 mg/L

MAVERICK NATURAL RESOURCES

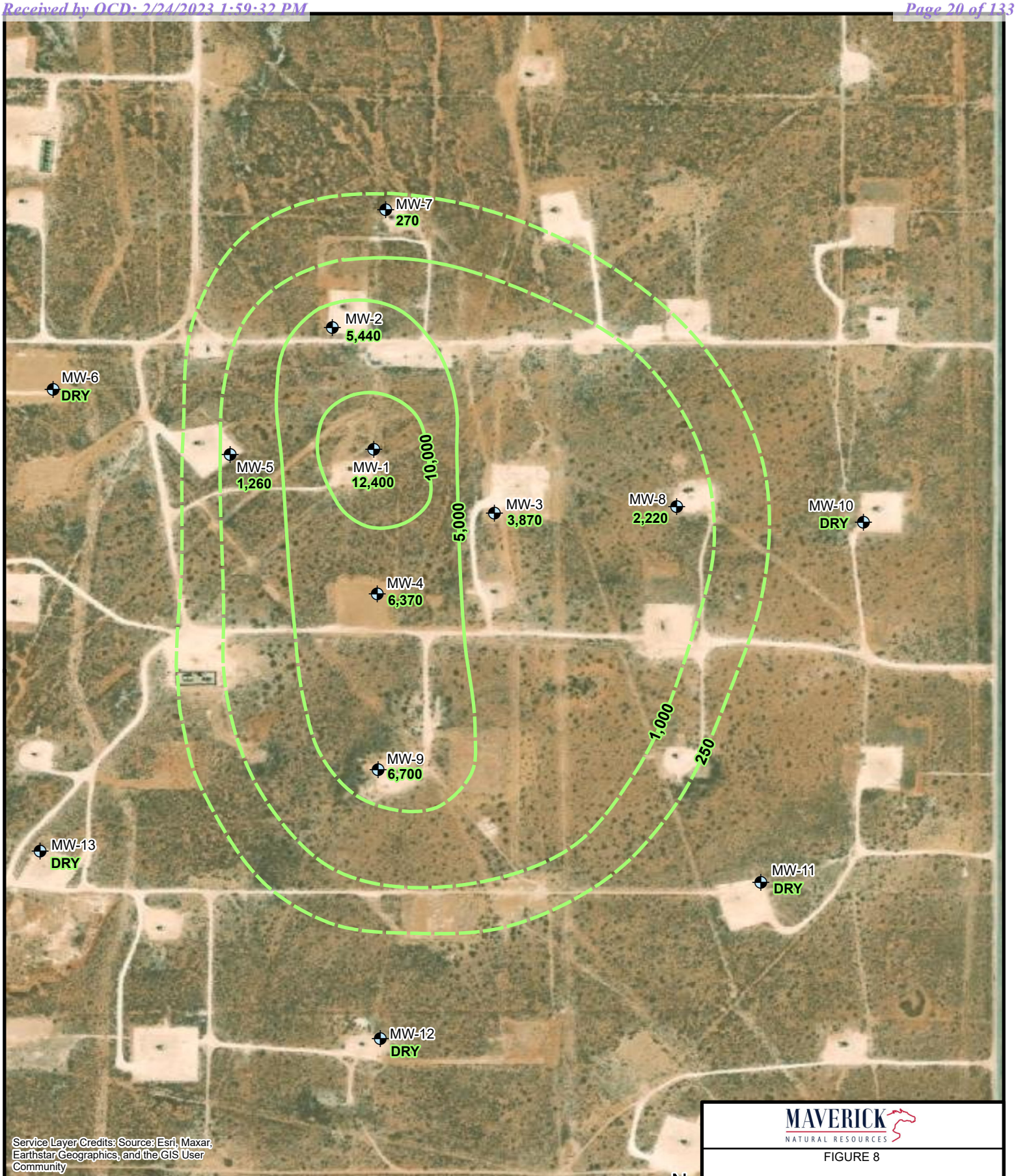
FIGURE 7

CHLORIDE CONCENTRATION MAP - APRIL 2022

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02007	
DATE : 1/26/2023	
FILE : FIGURE 7 MCA 357	



LEGEND

- MONITOR WELL LOCATION
- 1,000 CHLORIDE CONCENTRATION (mg/L)
- DRY NOT SAMPLED - DRY
- *RRC REMEDIATION LIMIT FOR CHLORIDE = 250 mg/L

MAVERICK NATURAL RESOURCES

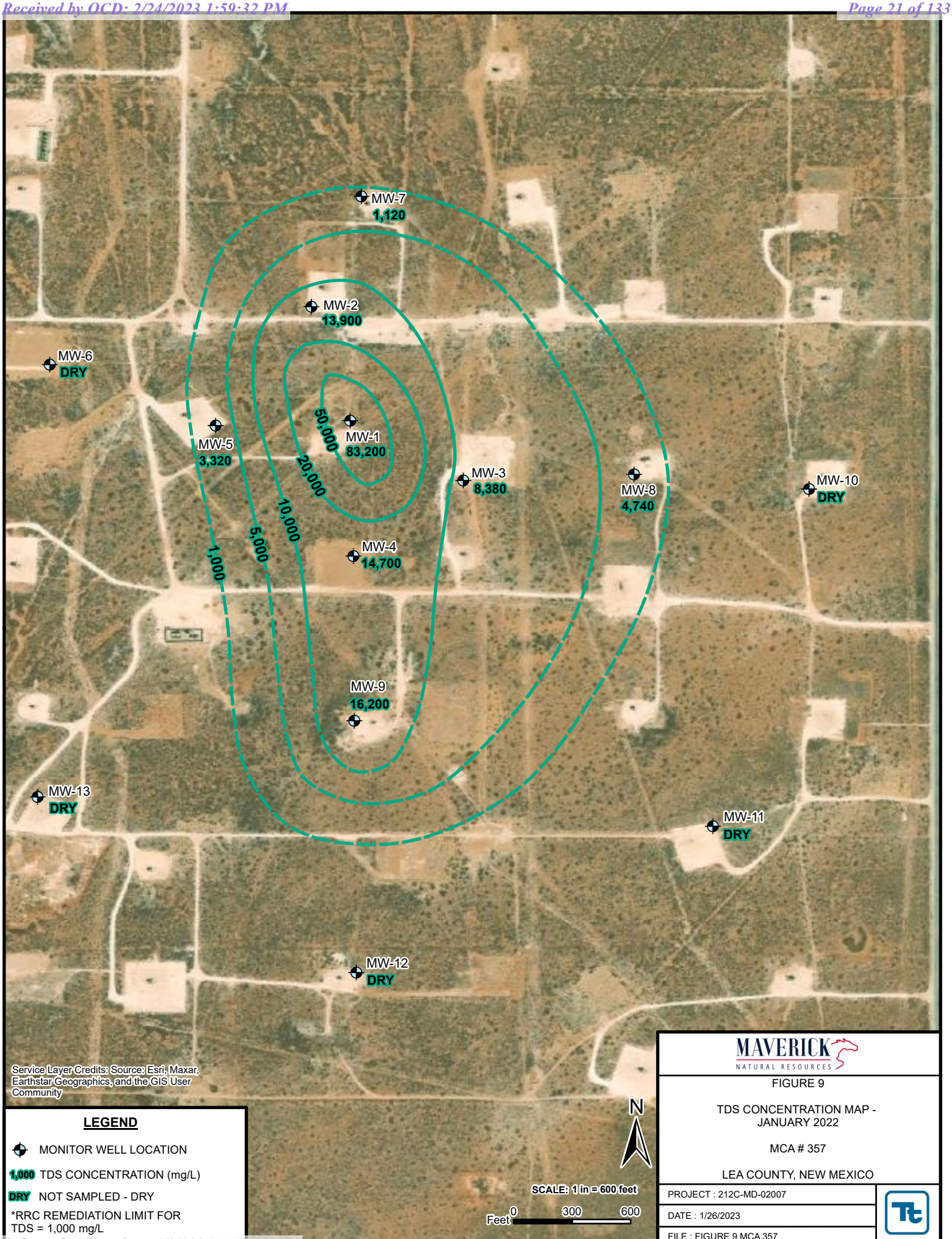
FIGURE 8

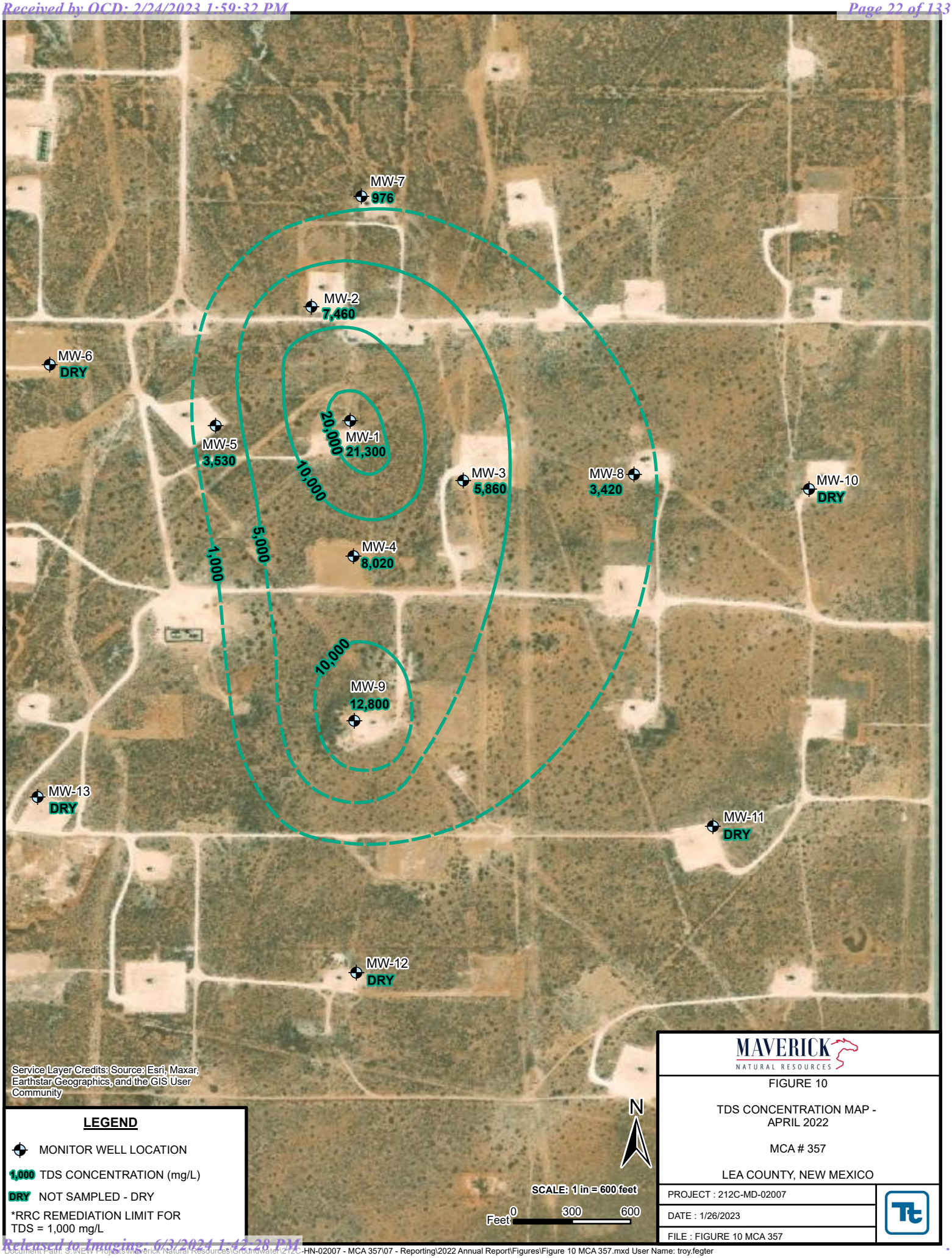
CHLORIDE CONCENTRATION MAP - OCTOBER 2022

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02007	
DATE : 1/26/2023	
FILE : FIGURE 8 MCA 357	





LEGEND

- MONITOR WELL LOCATION
- 1,000 TDS CONCENTRATION (mg/L)
- DRY NOT SAMPLED - DRY
- *RRC REMEDIATION LIMIT FOR TDS = 1,000 mg/L

MAVERICK NATURAL RESOURCES

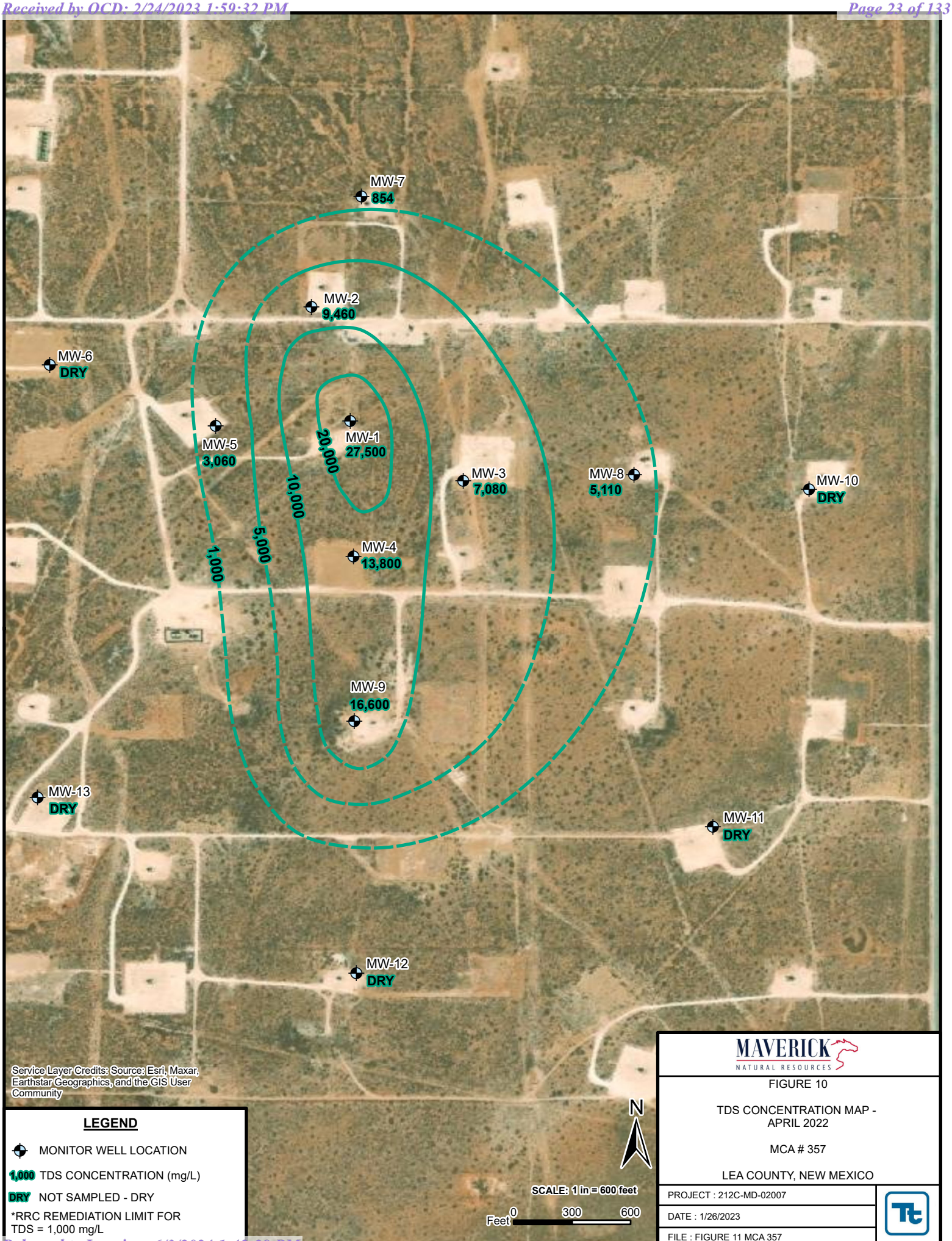
FIGURE 10

TDS CONCENTRATION MAP - APRIL 2022

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02007	
DATE : 1/26/2023	
FILE : FIGURE 10 MCA 357	



TABLES

TETRA TECH

Table 1
Groundwater Elevation Summary
Maljamar E&P
Lea County, New Mexico

Well ID	Gauging Date	Well Total Depth (feet)	Depth to Water (feet BTOC)	Top of Casing Elevation (feet AMSL)	Groundwater Elevation (feet)
MW-1	1/11/2022	102.70	84.31	3,956.78	**3,872.47**
	4/4/2022	102.70	84.46	3,956.78	**3,872.32**
	10/18/2022	102.70	84.50	3,956.78	**3,872.28**
MW-2	1/11/2022	107.80	83.30	3,963.58	**3,880.28**
	4/4/2022	107.80	83.37	3,963.58	**3,880.21**
	10/18/2022	107.80	83.44	3,963.58	**3,880.14**
MW-3	1/11/2022	117.30	88.26	3,951.34	**3,863.08**
	4/4/2022	117.30	88.45	3,951.34	**3,862.89**
	10/18/2022	117.30	88.51	3,951.34	**3,862.83**
MW-4	1/11/2022	103.20	94.30	3,945.39	**3,851.09**
	4/4/2022	103.20	94.51	3,945.39	**3,850.88**
	10/18/2022	103.20	94.58	3,945.39	**3,850.81**
MW-5	1/11/2022	113.00	89.73	3,950.37	**3,860.64**
	4/4/2022	113.00	89.94	3,950.37	**3,860.43**
	10/18/2022	113.00	90.03	3,950.37	**3,860.34**
MW-6	1/11/2022	128.10	Dry	3,952.96	**Dry**
	4/4/2022	128.10	Dry	3,952.96	**Dry**
	10/18/2022	128.10	Dry	3,952.96	**Dry**
MW-7	1/11/2022	127.30	89.64	3,972.11	**3,882.47**
	4/4/2022	127.30	89.72	3,972.11	**3,882.39**
	10/18/2022	127.30	89.80	3,972.11	**3,882.31**
MW-8	1/11/2022	118.00	95.27	3,956.83	**3,861.56**
	4/4/2022	118.00	95.38	3,956.83	**3,861.45**
	10/18/2022	118.00	95.44	3,956.83	**3,861.39**
MW-9	1/11/2022	133.50	118.64	3,936.53	**3,817.89**
	4/4/2022	133.50	119.18	3,936.53	**3,817.35**
	10/18/2022	133.50	119.25	3,936.53	**3,817.28**
MW-10	1/11/2022	132.51	Dry	3,963.20	**Dry**
	4/4/2022	132.51	Dry	3,963.20	**Dry**
	10/18/2022	132.51	Dry	3,963.20	**Dry**
MW-11	1/11/2022	132.88	Dry	3,948.30	**Dry**
	4/4/2022	132.88	Dry	3,948.30	**Dry**
	10/18/2022	132.88	Dry	3,948.30	**Dry**
MW-12	1/11/2022	132.30	Dry	3,930.91	**Dry**
	4/4/2022	132.30	Dry	3,930.91	**Dry**
	10/18/2022	132.30	Dry	3,930.91	**Dry**
MW-13	1/11/2022	132.25	Dry	3,931.32	**Dry**
	4/4/2022	132.25	Dry	3,931.32	**Dry**
	10/18/2022	132.25	Dry	3,931.32	**Dry**

Notes:

BTOC: Below Top of Casing

AMSL: Above Mean Sea Level

NG: Not gauged

TETRA TECH

Table 2
Monitor Wells
Groundwater Analytical Summary
MCA 357
Lea County, New Mexico

Well ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards		**NE**	**250**	**600**	**1,000**
MW-1	1/13/2022	167	55,800	756	83,200
	4/7/2022	18.4	11,000	194	21,300
	10/13/2022	21.7	12,400	222	27,500
MW-2	1/12/2022	7.04 J	5,590	269	13,900
	4/6/2022	10.2	6,010	306	7,460
	10/13/2022	10.4	5,440	270	9,460
MW-3	1/12/2022	8.81 J	4,300	180	8,380
	4/5/2022	8.7	4,310	185	5,860
	10/12/2022	11.5	3,870	159	7,080
MW-4	1/12/2022	7.82 J	6,120	181	14,700
	4/6/2022	8.35	6,730	198	8,020
	10/12/2022	11	6,370	174	13,800
MW-5	1/12/2022	2.04	1,150	136	3,320
	4/7/2022	4.49 J	1,040	152	3,530
	10/13/2022	2.95	1,260	124	3,060
MW-6	Not Sampled - Dry				
MW-7	1/11/2022	1.57	355	81.3	1,120
	4/6/2022	1.58	291	85.5	976
	10/13/2022	2.55	270	87.1	854
MW-8	1/13/2022	4.8 J	2,250	95.7	4,740
	4/5/2022	5.18	2,340	99.3	3,420
	10/12/2022	8.99	2,220	86.9	5,110
MW-9	1/12/2022	8.85 J	6,170	472	16,200
	4/6/2022	11.3	6,700	526	12,800
	10/12/2022	11	6,040	470	15,600
MW-10	Not Sampled - Dry				
MW-11	Not Sampled - Dry				
MW-12	Not Sampled - Dry				
MW-13	Not Sampled - Dry				

Notes:

NMWQCC: New Mexico Water Quality Control Commission

Exceeds regulatory standards

NE: Not Established

TDS: Total Dissolved Solids

J: The identification of the analyte is acceptable; the reported value is an estimate

TETRA TECH

Table 3
Quality Assurance/Quality Control Summary
MCA 357
Lea County, New Mexico

Well ID	Sample Date	Analyte	Primary Sample Result (mg/L)	Duplicate Sample Result (mg/L)	RPD	Within DQOs
MW-1	**1/13/2022**	Bromide	167	91	58.8%	Yes*
		Chloride	55,800	31,300	56.3%	**No**
		Sulfate	756	435	53.9%	Yes*
		TDS	83,200	58,800	34.4%	**No**
MW-1	**4/7/2022**	Bromide	18.4	20	8.3%	Yes
		Chloride	11,000	11,000	0.0%	Yes
		Sulfate	194	202	4.0%	Yes
		TDS	21,300	22,300	4.6%	Yes
MW-1	**10/13/2022**	Bromide	21.7	17.7	20.3%	Yes
		Chloride	12,400	10,200	19.5%	Yes
		Sulfate	222	184	18.7%	Yes
		TDS	27,500	21,700	23.6%	Yes

Notes:

RPD: Relative Percent Difference calculated as = (SR-DR)*200/(SR+DR)

DQO: Data Quality Objectives

ND: Not Detected above the laboratory method detection limit

N/A: Not Applicable

* Analytical results are at an estimated concentration for the primary sample and DQOs are adjusted to reflect

APPENDIX A: LABORATORY ANALYTICAL DATA

Pace Analytical®

ANALYTICAL REPORT

January 24, 2022

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1451914
Samples Received:	01/17/2022
Project Number:	212C-MD-02396
Description:	Conoco MCA 357

Report To: Julie Evans
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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MW-7 L1451914-01 GW

Collected by: Matthew Castrejan | Collected date/time: 01/11/22 15:00 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	1	01/18/22 17:13	01/18/22 17:13	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 17:26	01/18/22 17:26	RAF	Mt. Juliet, TN

MW-2 L1451914-02 GW

Collected by: Matthew Castrejan | Collected date/time: 01/12/22 11:00 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 17:39	01/18/22 17:39	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 17:52	01/18/22 17:52	RAF	Mt. Juliet, TN

MW-5 L1451914-03 GW

Collected by: Matthew Castrejan | Collected date/time: 01/12/22 12:05 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	1	01/18/22 18:31	01/18/22 18:31	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	20	01/18/22 18:44	01/18/22 18:44	RAF	Mt. Juliet, TN

MW-9 L1451914-04 GW

Collected by: Matthew Castrejan | Collected date/time: 01/12/22 13:15 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 18:57	01/18/22 18:57	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 19:10	01/18/22 19:10	RAF	Mt. Juliet, TN

MW-4 L1451914-05 GW

Collected by: Matthew Castrejan | Collected date/time: 01/12/22 14:25 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 19:23	01/18/22 19:23	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 19:36	01/18/22 19:36	RAF	Mt. Juliet, TN

MW-3 L1451914-06 GW

Collected by: Matthew Castrejan | Collected date/time: 01/12/22 15:30 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1804103	1	01/18/22 16:27	01/18/22 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 19:49	01/18/22 19:49	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 20:02	01/18/22 20:02	RAF	Mt. Juliet, TN

MW-8 L1451914-07 GW

Collected by: Matthew Castrejan | Collected date/time: 01/13/22 11:20 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1804103	1	01/18/22 16:27	01/18/22 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	10	01/18/22 20:15	01/18/22 20:15	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 20:28	01/18/22 20:28	RAF	Mt. Juliet, TN

MW-1 L1451914-08 GW

Collected by: Matthew Castrejan | Collected date/time: 01/13/22 14:55 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1805349	1	01/20/22 12:35	01/20/22 13:50	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 21:07	01/18/22 21:07	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	1000	01/18/22 21:20	01/18/22 21:20	RAF	Mt. Juliet, TN

DUP-1 L1451914-09 GW

Collected by: Matthew Castrejan | Collected date/time: 01/11/22 00:00 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 21:33	01/18/22 21:33	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	1000	01/18/22 21:46	01/18/22 21:46	RAF	Mt. Juliet, TN

DUP-2 L1451914-10 GW

Collected by: Matthew Castrejan | Collected date/time: 01/11/22 00:00 | Received date/time: 01/17/22 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1803990	1	01/18/22 12:42	01/18/22 14:38	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	100	01/18/22 21:59	01/18/22 21:59	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1803829	1000	01/18/22 22:12	01/18/22 22:12	RAF	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1120		20.0	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.57		0.353	1.00	1	01/18/2022 17:13	WG1803829
Chloride	355		3.79	10.0	10	01/18/2022 17:26	WG1803829
Sulfate	81.3		0.594	5.00	1	01/18/2022 17:13	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13900		200	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.04	J	3.53	10.0	10	01/18/2022 17:39	WG1803829
Chloride	5590		37.9	100	100	01/18/2022 17:52	WG1803829
Sulfate	269		5.94	50.0	10	01/18/2022 17:39	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3320		50.0	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.04		0.353	1.00	1	01/18/2022 18:31	WG1803829
Chloride	1150		7.58	20.0	20	01/18/2022 18:44	WG1803829
Sulfate	136		11.9	100	20	01/18/2022 18:44	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	16200		200	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.85	J	3.53	10.0	10	01/18/2022 18:57	WG1803829
Chloride	6170		37.9	100	100	01/18/2022 19:10	WG1803829
Sulfate	472		5.94	50.0	10	01/18/2022 18:57	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	14700		200	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.82	J	3.53	10.0	10	01/18/2022 19:23	WG1803829
Chloride	6120		37.9	100	100	01/18/2022 19:36	WG1803829
Sulfate	181		5.94	50.0	10	01/18/2022 19:23	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	8380		200	1	01/18/2022 17:39	WG1804103

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.81	J	3.53	10.0	10	01/18/2022 19:49	WG1803829
Chloride	4300		37.9	100	100	01/18/2022 20:02	WG1803829
Sulfate	180		5.94	50.0	10	01/18/2022 19:49	WG1803829

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4740		100	1	01/18/2022 17:39	WG1804103

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	4.80	J	3.53	10.0	10	01/18/2022 20:15	WG1803829
Chloride	2250		37.9	100	100	01/18/2022 20:28	WG1803829
Sulfate	95.7		5.94	50.0	10	01/18/2022 20:15	WG1803829

MW-1
Collected date/time: 01/13/22 14:55
L1451914

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	83200		1000	1	01/20/2022 13:50	WG1805349

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	167		35.3	100	100	01/18/2022 21:07	WG1803829
Chloride	55800		379	1000	1000	01/18/2022 21:20	WG1803829
Sulfate	756		59.4	500	100	01/18/2022 21:07	WG1803829

DUP-1
Collected date/time: 01/11/22 00:00
L1451914

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	58800		1000	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	91.1	J	35.3	100	100	01/18/2022 21:33	WG1803829
Chloride	31300		379	1000	1000	01/18/2022 21:46	WG1803829
Sulfate	435	J	59.4	500	100	01/18/2022 21:33	WG1803829

DUP-2
Collected date/time: 01/11/22 00:00
L1451914

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	44000		1000	1	01/18/2022 14:38	WG1803990

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	65.6	J	35.3	100	100	01/18/2022 21:59	WG1803829
Chloride	19700		379	1000	1000	01/18/2022 22:12	WG1803829
Sulfate	352	J	59.4	500	100	01/18/2022 21:59	WG1803829

Method Blank (MB)

(MB) R3752026-1 01/18/22 14:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1450541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1450541-01 01/18/22 14:38 • (DUP) R3752026-3 01/18/22 14:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	880	879	1	0.151		5

L1450541-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1450541-02 01/18/22 14:38 • (DUP) R3752026-4 01/18/22 14:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	919	921	1	0.289		5

Laboratory Control Sample (LCS)

(LCS) R3752026-2 01/18/22 14:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8670	98.5	77.4-123	

Method Blank (MB)

(MB) R3752022-1 01/18/22 17:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1451612-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1451612-01 01/18/22 17:39 • (DUP) R3752022-3 01/18/22 17:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	995	1000	1	0.534		5

L1451614-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1451614-01 01/18/22 17:39 • (DUP) R3752022-4 01/18/22 17:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	795	798	1	0.377		5

Laboratory Control Sample (LCS)

(LCS) R3752022-2 01/18/22 17:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8640	98.2	77.4-123	

Method Blank (MB)

(MB) R3752589-1 01/20/22 13:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1451692-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1451692-01 01/20/22 13:50 • (DUP) R3752589-3 01/20/22 13:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1140	1140	1	0.175		5

L1451692-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1451692-03 01/20/22 13:50 • (DUP) R3752589-4 01/20/22 13:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1080	1080	1	0.370		5

Laboratory Control Sample (LCS)

(LCS) R3752589-2 01/20/22 13:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8430	95.8	77.4-123	

Method Blank (MB)

(MB) R3751707-1 01/18/22 11:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

L1451696-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1451696-04 01/18/22 13:48 • (DUP) R3751707-3 01/18/22 14:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	5	0.000		15
Chloride	74.1	73.4	5	0.913		15
Sulfate	144	142	5	1.52		15

L1452247-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1452247-01 01/18/22 22:25 • (DUP) R3751707-6 01/18/22 22:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	100	0.000		15
Sulfate	411	406	100	1.02	J	15

L1452247-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1452247-01 01/18/22 23:04 • (DUP) R3751707-8 01/18/22 23:43

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	42500	42300	1000	0.535		15

Laboratory Control Sample (LCS)

(LCS) R3751707-2 01/18/22 11:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	41.0	102	80.0-120	
Chloride	40.0	40.9	102	80.0-120	
Sulfate	40.0	41.4	104	80.0-120	

L1451777-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1451777-21 01/18/22 16:07 • (MS) R3751707-4 01/18/22 16:21 • (MSD) R3751707-5 01/18/22 16:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	16.9	67.3	67.2	101	101	1	80.0-120			0.143	15
Sulfate	50.0	4.06	54.4	54.2	101	100	1	80.0-120			0.394	15

L1452247-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1452247-01 01/18/22 22:25 • (MS) R3751707-7 01/18/22 22:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	70.9	142	100	80.0-120	J5
Chloride	50.0	40700	37100	0.000	100	80.0-120	E V
Sulfate	50.0	411	419	16.8	100	80.0-120	V

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

ConocoPhillips - Tetra Tech

Billing Information:
901 West Wall St
Suite 100
Midland, TX 79701

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# LV51914

C099

Report to: Julie Evans

Email To: Julie.evans@tetratech.com

Project Description: Conoco MCA 357

City/State Collected:

Phone: 432-687-8137
Fax:

Client Project # 212C-MD-02396

Lab Project # COPTETRA

Collected by (print): Matthew Castrejon

Site/Facility ID #

P.O. #

Collected by (signature): Matthew Castrejon

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Acctnum: COPTETRA
Template:
Prelogin:
TSR: 526 - Chris McCord
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-7	G	GW		01/11/22	1500	1	X	X		-01
MW-2	G	GW		1/12/22	1100	1	X	X		02
MW-5	G	GW		1/12/22	1205	1	X	X		03
MW-9	G	GW		1/12/22	1315	1	X	X		04
MW-4	G	GW		1/12/22	1425	1	X	X		05
MW-3	G	GW		1/12/22	1530	1	X	X		06
MW-8	G	GW		1/13/22	1120	1	X	X		07
MW-1	G	GW		1/13/22	1455	1	X	X		08
Dup-1	G	GW		—	—	1	X	X		09
Dup-2	G	GW		—	—	1	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Matthew Castrejon	1/14/22	12:00	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	1-14-22	16:00	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 2.9 2.2 2.4 °C

Bottles Received: 10

Date: 1/18/22 Time: 8:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

April 21, 2022

ConocoPhillips - Tetra Tech

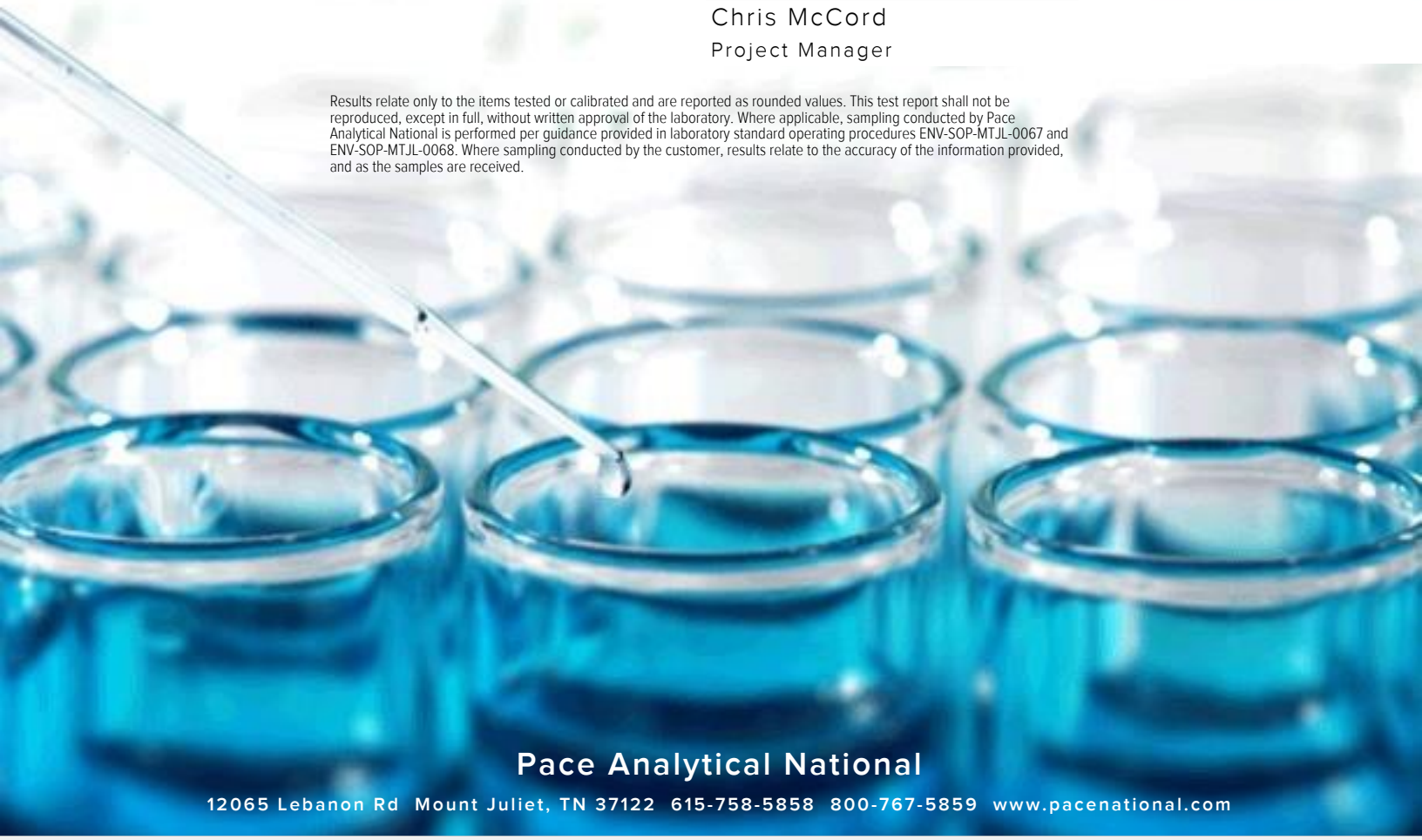
Sample Delivery Group:	L1480590
Samples Received:	04/09/2022
Project Number:	212C-MD-02396
Description:	Conoco MCA 357

Report To: Julie Evans
4001 N. Big Spring St., Ste. 401
Midland, TX 79705

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY

MW-8 L1480590-01 GW

Collected by: Matthew Castrejan | Collected date/time: 04/05/22 13:55 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 03:37	04/13/22 03:37	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 03:21	04/13/22 03:21	LBR	Mt. Juliet, TN

MW-3 L1480590-02 GW

Collected by: Matthew Castrejan | Collected date/time: 04/05/22 15:25 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 04:43	04/13/22 04:43	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 04:26	04/13/22 04:26	LBR	Mt. Juliet, TN

MW-9 L1480590-03 GW

Collected by: Matthew Castrejan | Collected date/time: 04/06/22 10:55 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	10	04/13/22 04:59	04/13/22 04:59	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 05:16	04/13/22 05:16	LBR	Mt. Juliet, TN

MW-4 L1480590-04 GW

Collected by: Matthew Castrejan | Collected date/time: 04/06/22 12:10 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 05:48	04/13/22 05:48	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 05:32	04/13/22 05:32	LBR	Mt. Juliet, TN

MW-7 L1480590-05 GW

Collected by: Matthew Castrejan | Collected date/time: 04/06/22 13:20 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	1	04/13/22 06:05	04/13/22 06:05	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 06:54	04/13/22 06:54	LBR	Mt. Juliet, TN

MW-2 L1480590-06 GW

Collected by: Matthew Castrejan | Collected date/time: 04/06/22 15:20 | Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	10	04/13/22 08:00	04/13/22 08:00	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 08:16	04/13/22 08:16	LBR	Mt. Juliet, TN

MW-5 L1480590-07 GW

Collected by: Matthew Castrejan
Collected date/time: 04/07/22 11:00
Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1847255	1	04/12/22 14:25	04/12/22 16:08	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 08:32	04/13/22 08:32	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	50	04/13/22 08:49	04/13/22 08:49	LBR	Mt. Juliet, TN

MW-1 L1480590-08 GW

Collected by: Matthew Castrejan
Collected date/time: 04/07/22 14:10
Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1847101	1	04/12/22 16:44	04/12/22 18:00	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 09:05	04/13/22 09:05	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	500	04/13/22 09:22	04/13/22 09:22	LBR	Mt. Juliet, TN

DUP-1 L1480590-09 GW

Collected by: Matthew Castrejan
Collected date/time: 04/06/22 00:00
Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846183	1	04/10/22 16:52	04/10/22 17:49	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	5	04/13/22 09:38	04/13/22 09:38	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	500	04/13/22 09:55	04/13/22 09:55	LBR	Mt. Juliet, TN

DUP-2 L1480590-10 GW

Collected by: Matthew Castrejan
Collected date/time: 04/06/22 00:00
Received date/time: 04/09/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1846171	1	04/10/22 15:44	04/10/22 16:48	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	1	04/13/22 10:11	04/13/22 10:11	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1847421	100	04/13/22 11:00	04/13/22 11:00	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1848158	20	04/14/22 04:39	04/14/22 04:39	LBR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3420		100	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	5.18		1.76	5.00	5	04/13/2022 03:21	WG1847421
Chloride	2340		37.9	100	100	04/13/2022 03:37	WG1847421
Sulfate	99.3		2.97	25.0	5	04/13/2022 03:21	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5860		200	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.70		1.76	5.00	5	04/13/2022 04:26	WG1847421
Chloride	4310		37.9	100	100	04/13/2022 04:43	WG1847421
Sulfate	185		2.97	25.0	5	04/13/2022 04:26	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	12800		200	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	11.3		3.53	10.0	10	04/13/2022 04:59	WG1847421
Chloride	6700		37.9	100	100	04/13/2022 05:16	WG1847421
Sulfate	526		5.94	50.0	10	04/13/2022 04:59	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	8020		200	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.35		1.76	5.00	5	04/13/2022 05:32	WG1847421
Chloride	6730		37.9	100	100	04/13/2022 05:48	WG1847421
Sulfate	198		2.97	25.0	5	04/13/2022 05:32	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	976		20.0	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.58		0.353	1.00	1	04/13/2022 06:05	WG1847421
Chloride	291		1.90	5.00	5	04/13/2022 06:54	WG1847421
Sulfate	85.5		0.594	5.00	1	04/13/2022 06:05	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	7460		200	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.2		3.53	10.0	10	04/13/2022 08:00	WG1847421
Chloride	6010		37.9	100	100	04/13/2022 08:16	WG1847421
Sulfate	306		5.94	50.0	10	04/13/2022 08:00	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3530		50.0	1	04/12/2022 16:08	WG1847255

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	4.49	J	1.76	5.00	5	04/13/2022 08:32	WG1847421
Chloride	1040		19.0	50.0	50	04/13/2022 08:49	WG1847421
Sulfate	152		2.97	25.0	5	04/13/2022 08:32	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	21300		400	1	04/12/2022 18:00	WG1847101

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	18.4		1.76	5.00	5	04/13/2022 09:05	WG1847421
Chloride	11000		190	500	500	04/13/2022 09:22	WG1847421
Sulfate	194		2.97	25.0	5	04/13/2022 09:05	WG1847421

DUP-1
Collected date/time: 04/06/22 00:00
L1480590

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	22300		400	1	04/10/2022 17:49	WG1846183

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	20.0		1.76	5.00	5	04/13/2022 09:38	WG1847421
Chloride	11000		190	500	500	04/13/2022 09:55	WG1847421
Sulfate	202		2.97	25.0	5	04/13/2022 09:38	WG1847421

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	11900		200	1	04/10/2022 16:48	WG1846171

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	11.1		0.353	1.00	1	04/13/2022 10:11	WG1847421
Chloride	9620		37.9	100	100	04/13/2022 11:00	WG1847421
Sulfate	172		11.9	100	20	04/14/2022 04:39	WG1848158

Method Blank (MB)

(MB) R3780062-1 04/10/22 16:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1479870-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1479870-04 04/10/22 16:48 • (DUP) R3780062-3 04/10/22 16:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1620	1660	1	2.74		5

L1480590-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1480590-05 04/10/22 16:48 • (DUP) R3780062-4 04/10/22 16:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	976	940	1	3.76		5

Laboratory Control Sample (LCS)

(LCS) R3780062-2 04/10/22 16:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8330	94.7	77.4-123	

Method Blank (MB)

(MB) R3780493-1 04/10/22 17:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1478817-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1478817-18 04/10/22 17:49 • (DUP) R3780493-3 04/10/22 17:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	584	601	1	2.92		5

L1478817-26 Original Sample (OS) • Duplicate (DUP)

(OS) L1478817-26 04/10/22 17:49 • (DUP) R3780493-4 04/10/22 17:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	913	932	1	2.02		5

Laboratory Control Sample (LCS)

(LCS) R3780493-2 04/10/22 17:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8250	93.8	77.4-123	

Method Blank (MB)

(MB) R3781192-1 04/12/22 18:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1480147-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1480147-04 04/12/22 18:00 • (DUP) R3781192-3 04/12/22 18:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1000	1090	1	8.41	J3	5

L1480528-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1480528-04 04/12/22 18:00 • (DUP) R3781192-4 04/12/22 18:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	572	579	1	1.16		5

Laboratory Control Sample (LCS)

(LCS) R3781192-2 04/12/22 18:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8320	94.5	77.4-123	

Method Blank (MB)

(MB) R3780743-1 04/12/22 16:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1480147-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1480147-09 04/12/22 16:08 • (DUP) R3780743-3 04/12/22 16:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	638	630	1	1.18		5

L1480221-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1480221-03 04/12/22 16:08 • (DUP) R3780743-4 04/12/22 16:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	711	705	1	0.754		5

Laboratory Control Sample (LCS)

(LCS) R3780743-2 04/12/22 16:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8630	98.1	77.4-123	

Method Blank (MB)

(MB) R3780732-1 04/12/22 21:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

L1480557-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1480557-02 04/12/22 22:57 • (DUP) R3780732-3 04/12/22 23:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	161	163	5	1.46		15

L1480590-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1480590-05 04/13/22 06:05 • (DUP) R3780732-6 04/13/22 06:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.58	1.56	1	1.03		15
Sulfate	85.5	84.9	1	0.717		15

L1480590-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1480590-05 04/13/22 06:54 • (DUP) R3780732-8 04/13/22 07:43

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	291	292	5	0.430		15

L1480557-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1480557-02 04/13/22 11:17 • (DUP) R3780732-9 04/13/22 11:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Sulfate	18.8	18.6	1	0.682		15

Laboratory Control Sample (LCS)

(LCS) R3780732-2 04/12/22 22:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	41.6	104	80.0-120	
Chloride	40.0	39.3	98.4	80.0-120	
Sulfate	40.0	42.0	105	80.0-120	

L1480557-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1480557-07 04/13/22 01:08 • (MS) R3780732-4 04/13/22 01:25 • (MSD) R3780732-5 04/13/22 01:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	0.669	48.4	49.2	95.5	97.1	1	80.0-120			1.72	15
Chloride	50.0	110	152	153	85.5	85.9	1	80.0-120	E	E	0.105	15
Sulfate	50.0	26.0	74.7	75.7	97.4	99.4	1	80.0-120			1.33	15

L1480590-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1480590-05 04/13/22 06:05 • (MS) R3780732-7 04/13/22 06:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	1.58	49.1	95.1	1	80.0-120	
Chloride	50.0	281	317	71.8	1	80.0-120	E V
Sulfate	50.0	85.5	131	90.4	1	80.0-120	E

Method Blank (MB)

(MB) R3781235-1 04/13/22 21:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U		0.594	5.00

L1482080-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1482080-02 04/14/22 00:38 • (DUP) R3781235-3 04/14/22 00:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	U	U	1	0.000		15

L1479769-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1479769-01 04/14/22 02:52 • (DUP) R3781235-5 04/14/22 03:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	63.6	62.9	1	1.04		15

Laboratory Control Sample (LCS)

(LCS) R3781235-2 04/13/22 21:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	40.3	101	80.0-120	

L1482080-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1482080-02 04/14/22 00:38 • (MS) R3781235-4 04/14/22 01:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50.0	U	48.7	97.5	1	80.0-120	

L1479769-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1479769-01 04/14/22 02:52 • (MS) R3781235-6 04/14/22 03:19 • (MSD) R3781235-7 04/14/22 03:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50.0	63.6	110	113	92.5	98.2	1	80.0-120	E	E	2.53	15

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

ConocoPhillips - Tetra Tech

Billing Information:
901 West Wall St
Suite 100
Midland, TX 79701

Report to: Julie Evans

Email To: Julie.evans@tetratech.com

Project Description: ~~Maljamar E&P Groundwater~~ ConocoMCA 357

City/State Collected:

Phone: 432-687-8137
Fax:

Client Project # 212C-MD-~~02403~~ 02396

Lab Project # COPTETRA-MALJAMAR

Collected by (print): Matthew Castrejon

Site/Facility ID #

P.O. #

Collected by (signature): Matthew Castrejon

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# LH80590

E068

Acctnum: COPTETRA

Template:

Prelogin:

TSR: 526 - Chris McCord

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-8	G	GW		4/5/22	1355	2	X	X		-01
MW-3	G	GW		4/5/22	1525					-02
MW-9	G	GW		4/6/22	1055					-03
MW-4	G	GW		4/6/22	1210					-04
MW-7	G	GW		4/6/22	1320					-05
MW-2	G	GW		4/6/22	1520					-06
MW-5	G	GW		4/7/22	1100					-07
MW-1	G	GW		4/7/22	1310					-08
Dup-1	G	GW								-09
Dup2	G	GW								-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Matthew Castrejon	4/8/22	4/0/22		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
	4/8/22	1700	SWA	JAA 2.3+0=2.3 20
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Verona Sistrunk	4/9/22 0830

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

November 07, 2022

Tetra Tech EMI - Houston, TX

Sample Delivery Group:	L1547089
Samples Received:	10/15/2022
Project Number:	
Description:	Maverick MCA 357
Site:	LEA COUNTY, NEW MEXICO
Report To:	Chuck Terhune
	1500 CityWest Boulevard
	Suite 1000
	Houston, TX 77042

Entire Report Reviewed By:

Chad A Upchurch
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-8 L1547089-01 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/12/22 11:35	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945498	1	10/19/22 15:38	10/19/22 16:54	SLP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 01:34	10/21/22 01:34	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 01:48	10/21/22 01:48	LBR	Mt. Juliet, TN

MW-3 L1547089-02 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/12/22 12:50	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945482	1	10/19/22 15:17	10/19/22 16:53	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 02:01	10/21/22 02:01	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 02:15	10/21/22 02:15	LBR	Mt. Juliet, TN

MW-9 L1547089-03 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/12/22 14:20	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945489	1	10/19/22 17:09	10/20/22 11:46	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 02:28	10/21/22 02:28	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 03:09	10/21/22 03:09	LBR	Mt. Juliet, TN

MW-4 L1547089-04 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/12/22 15:35	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945482	1	10/19/22 15:17	10/19/22 16:53	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 03:22	10/21/22 03:22	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 03:36	10/21/22 03:36	LBR	Mt. Juliet, TN

MW-7 L1547089-05 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/13/22 11:50	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945498	1	10/19/22 15:38	10/19/22 16:54	SLP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	1	10/21/22 03:49	10/21/22 03:49	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 04:03	10/21/22 04:03	LBR	Mt. Juliet, TN

MW-2 L1547089-06 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/13/22 13:10	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945482	1	10/19/22 15:17	10/19/22 16:53	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 04:16	10/21/22 04:16	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 04:30	10/21/22 04:30	LBR	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE SUMMARY

MW-5 L1547089-07 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/13/22 14:25	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945489	1	10/19/22 17:09	10/20/22 11:46	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	1	10/21/22 04:43	10/21/22 04:43	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 04:57	10/21/22 04:57	LBR	Mt. Juliet, TN

MW-1 L1547089-08 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/13/22 15:50	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945489	1	10/19/22 17:09	10/20/22 11:46	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 05:10	10/21/22 05:10	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 05:51	10/21/22 05:51	LBR	Mt. Juliet, TN

DUP L1547089-09 GW

Collected by	Collected date/time	Received date/time
MATTHEW CASTREJON	10/12/22 00:00	10/15/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1945489	1	10/19/22 17:09	10/20/22 11:46	JD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	10	10/21/22 06:04	10/21/22 06:04	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1944567	100	10/21/22 06:18	10/21/22 06:18	LBR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chad A Upchurch
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5110		100	1	10/19/2022 16:54	WG1945498

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.99	J	3.53	10.0	10	10/21/2022 01:34	WG1944567
Chloride	2220		37.9	100	100	10/21/2022 01:48	WG1944567
Sulfate	86.9		5.94	50.0	10	10/21/2022 01:34	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	7080		200	1	10/19/2022 16:53	WG1945482

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	11.5		3.53	10.0	10	10/21/2022 02:01	WG1944567
Chloride	3870		37.9	100	100	10/21/2022 02:15	WG1944567
Sulfate	159		5.94	50.0	10	10/21/2022 02:01	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	15600		400	1	10/20/2022 11:46	WG1945489

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	11.0		3.53	10.0	10	10/21/2022 02:28	WG1944567
Chloride	6040		37.9	100	100	10/21/2022 03:09	WG1944567
Sulfate	470		5.94	50.0	10	10/21/2022 02:28	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13800		400	1	10/19/2022 16:53	WG1945482

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	11.0		3.53	10.0	10	10/21/2022 03:22	WG1944567
Chloride	6370		37.9	100	100	10/21/2022 03:36	WG1944567
Sulfate	174		5.94	50.0	10	10/21/2022 03:22	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	854		20.0	1	10/19/2022 16:54	WG1945498

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.55		0.353	1.00	1	10/21/2022 03:49	WG1944567
Chloride	270		3.79	10.0	10	10/21/2022 04:03	WG1944567
Sulfate	87.1		0.594	5.00	1	10/21/2022 03:49	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	9460		200	1	10/19/2022 16:53	WG1945482

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.4		3.53	10.0	10	10/21/2022 04:16	WG1944567
Chloride	5440		37.9	100	100	10/21/2022 04:30	WG1944567
Sulfate	270		5.94	50.0	10	10/21/2022 04:16	WG1944567

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3060		50.0	1	10/20/2022 11:46	WG1945489

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.95		0.353	1.00	1	10/21/2022 04:43	WG1944567
Chloride	1260		3.79	10.0	10	10/21/2022 04:57	WG1944567
Sulfate	124		0.594	5.00	1	10/21/2022 04:43	WG1944567

MW-1
Collected date/time: 10/13/22 15:50
L1547089

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	27500		400	1	10/20/2022 11:46	WG1945489

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	21.7		3.53	10.0	10	10/21/2022 05:10	WG1944567
Chloride	12400		37.9	100	100	10/21/2022 05:51	WG1944567
Sulfate	222		5.94	50.0	10	10/21/2022 05:10	WG1944567

DUP
Collected date/time: 10/12/22 00:00
L1547089

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	21700		10.0	1	10/20/2022 11:46	WG1945489

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	17.7		3.53	10.0	10	10/21/2022 06:04	WG1944567
Chloride	10200		37.9	100	100	10/21/2022 06:18	WG1944567
Sulfate	184		5.94	50.0	10	10/21/2022 06:04	WG1944567

Method Blank (MB)

(MB) R3855115-1 10/19/22 16:53

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1545556-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1545556-02 10/19/22 16:53 • (DUP) R3855115-3 10/19/22 16:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1710	1880	1	9.76	J3	5

L1545556-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1545556-04 10/19/22 16:53 • (DUP) R3855115-4 10/19/22 16:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1500	1680	1	11.7	J3	5

Laboratory Control Sample (LCS)

(LCS) R3855115-2 10/19/22 16:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8420	95.7	77.3-123	

Method Blank (MB)

(MB) R3853304-1 10/20/22 11:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1545556-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1545556-05 10/20/22 11:46 • (DUP) R3853304-3 10/20/22 11:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1560	1640	1	5.47	J3	5

L1545818-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1545818-02 10/20/22 11:46 • (DUP) R3853304-4 10/20/22 11:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1350	1480	1	9.56	J3	5

Laboratory Control Sample (LCS)

(LCS) R3853304-2 10/20/22 11:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8480	96.4	77.3-123	

Method Blank (MB)

(MB) R3852938-1 10/19/22 16:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1545935-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1545935-01 10/19/22 16:54 • (DUP) R3852938-3 10/19/22 16:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	456	437	1	4.18		5

L1545935-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1545935-02 10/19/22 16:54 • (DUP) R3852938-4 10/19/22 16:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	618	602	1	2.62		5

Laboratory Control Sample (LCS)

(LCS) R3852938-2 10/19/22 16:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7960	90.5	77.3-123	

Method Blank (MB)

(MB) R3851693-1 10/20/22 21:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	0.384	J	0.379	1.00
Sulfate	U		0.594	5.00

L1547052-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1547052-01 10/21/22 00:40 • (DUP) R3851693-3 10/21/22 00:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	2.02	2.15	1	6.44		15
Chloride	94.4	94.4	1	0.0322		15
Sulfate	101	101	1	0.163		15

L1547316-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1547316-01 10/21/22 06:31 • (DUP) R3851693-6 10/21/22 06:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.73	1.62	1	6.27		15
Chloride	7.94	7.74	1	2.58		15
Sulfate	1.52	1.49	1	1.42	J	15

Laboratory Control Sample (LCS)

(LCS) R3851693-2 10/20/22 21:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.9	99.7	80.0-120	
Chloride	40.0	40.5	101	80.0-120	
Sulfate	40.0	40.1	100	80.0-120	

L1547052-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1547052-01 10/21/22 00:40 • (MS) R3851693-4 10/21/22 01:07 • (MSD) R3851693-5 10/21/22 01:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	2.02	49.8	50.3	95.6	96.6	1	80.0-120			0.985	15
Chloride	50.0	94.4	140	139	92.1	89.8	1	80.0-120			0.807	15
Sulfate	50.0	101	145	146	88.1	89.6	1	80.0-120			0.499	15

L1547316-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1547316-01 10/21/22 06:31 • (MS) R3851693-7 10/21/22 06:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	1.73	50.2	96.9	1	80.0-120	
Chloride	50.0	7.94	58.1	100	1	80.0-120	
Sulfate	50.0	1.52	51.4	99.7	1	80.0-120	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Tetra Tech EMI - Houston, TX
1500 CityWest Boulevard
Suite 1000
Houston, TX 77042

Billing Information:
Accounts Payable
901 West Wall
Suite 100
Midland, TX 79701

Pres Chk

Report to: Chuck Terhune

Email To: chuck.terhune@tetratech.com

Project Description: Maverick MCA 357

City/State Collected:

Please Circle: PT MT CT ET

Phone: 832-251-5160

Client Project #

Lab Project #: TETRAHTX-MCA357

Collected by (print): Matthew Castrejon

Collected by (signature):

Site/Facility ID #: LEA COUNTY, NEW MEXICO

P.O. #

Quote #

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BROMIDE, CHLORIDE 250mlHDPE-NoPres	SULFATE 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	Remarks	Sample # (lab only)
MW-8	G	GW		10/12/22	1135	5	X	X	X		-01
MW-3		GW		10/12/22	1250						-02
MW-9		GW		10/12/22	1420						-03
MW-4		GW		10/12/22	1535						-04
MW-7		GW		10/13/22	1150						-05
MW-2		GW		10/13/22	1310						-06
MW-5		GW		10/13/22	1425						-07
MW-1		GW		10/13/22	1550						-08
Dup	↓	GW		-	-	↓	↓	↓	↓		-09
		GW									

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1547089
G162

Acctnum: TETRAHTX
Template: T217803
Prelogin: P956136
PM: 3564 - Chad A Upchurch
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

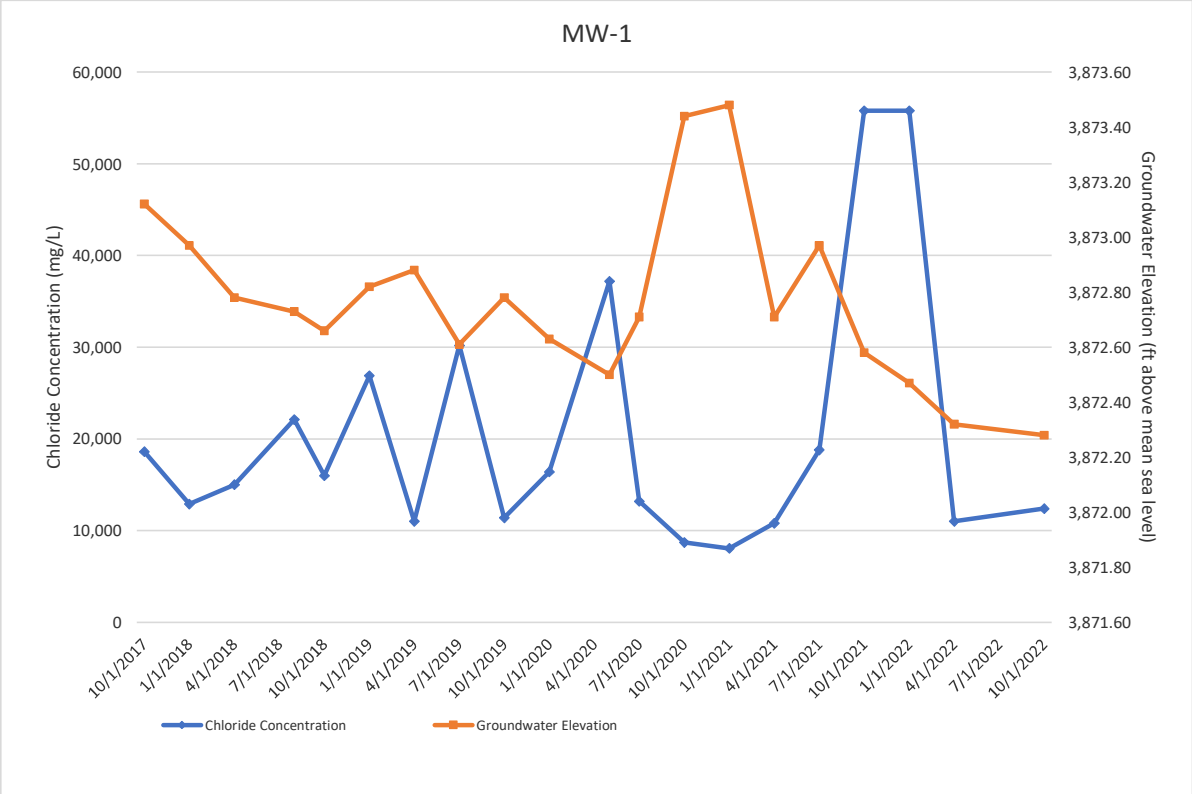
Tracking # 5913 5719 6177 8775

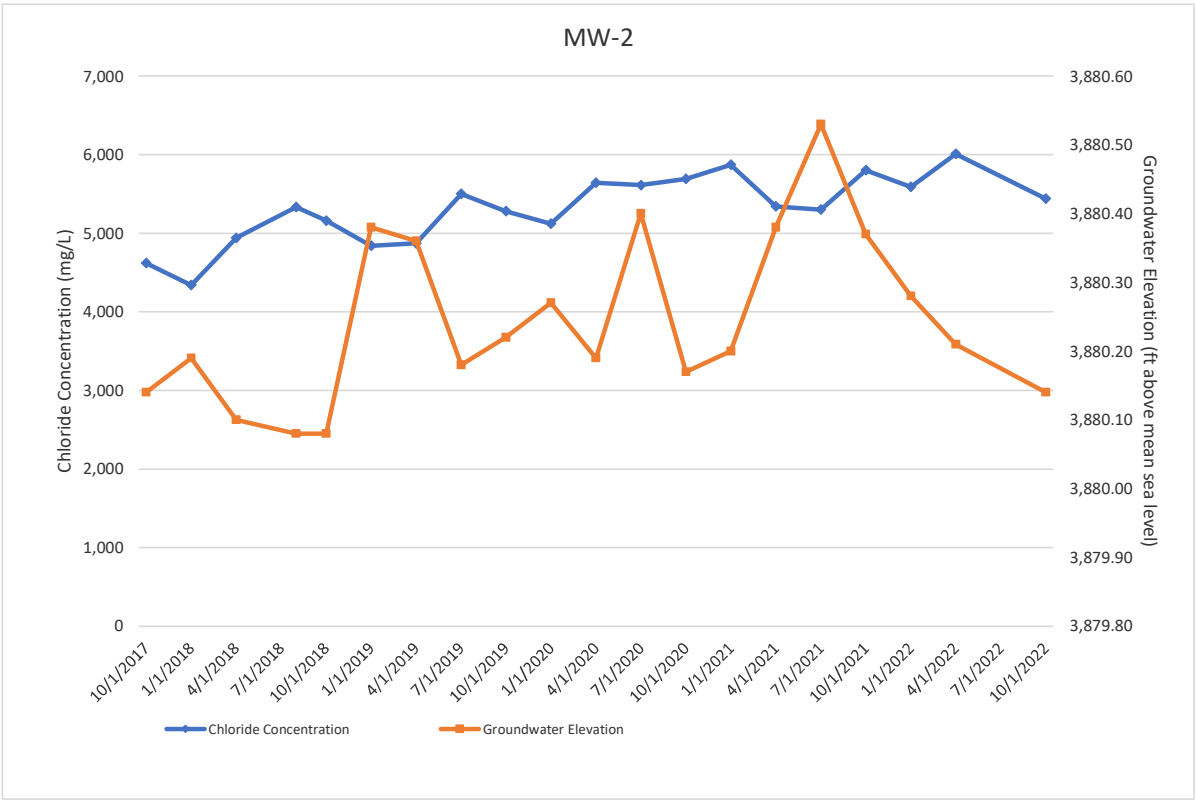
Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y X N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	Temp:	Bottles Received:	If preservation required by Login: Date/Time
Matthew Castrejon	10/14/22	1245					
Relinquished by : (Signature)	Date: 10/14/22	Time: 1700	Received by: (Signature) FedEx		DF 1.7 °C .5+0=.5	45	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/15/22	Time: 0950	Hold:	Conditions: NCF / OK

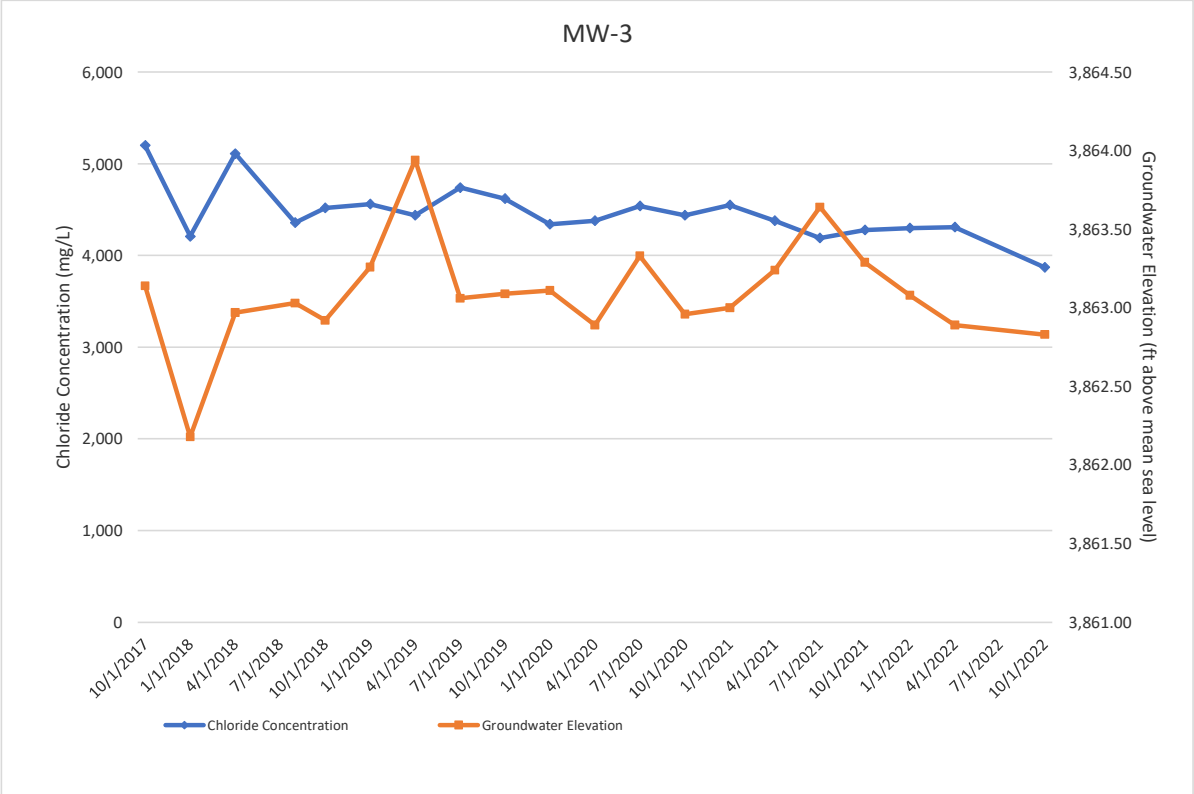
APPENDIX B: CHLORIDE CONCENTRATION GRAPHS

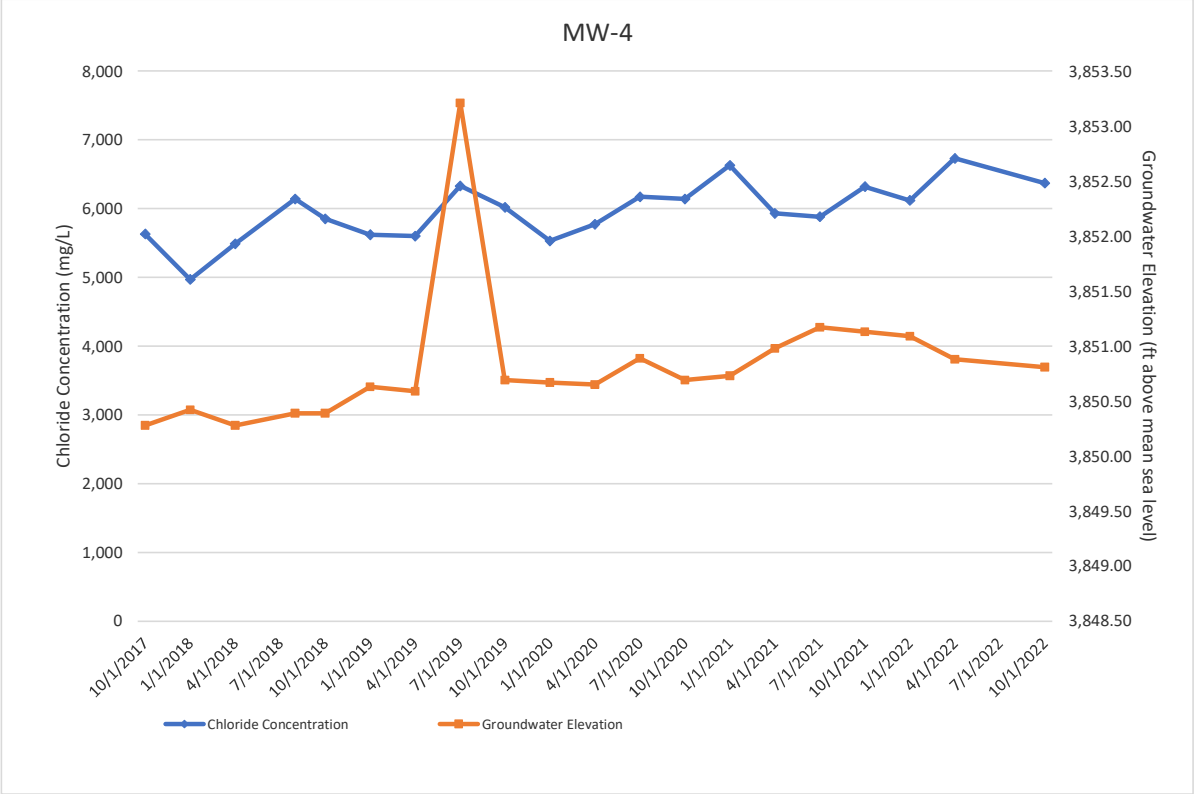
Chloride Concentration Graphs
Maverick Natural Resources - MCA #357
Lea County, New Mexico



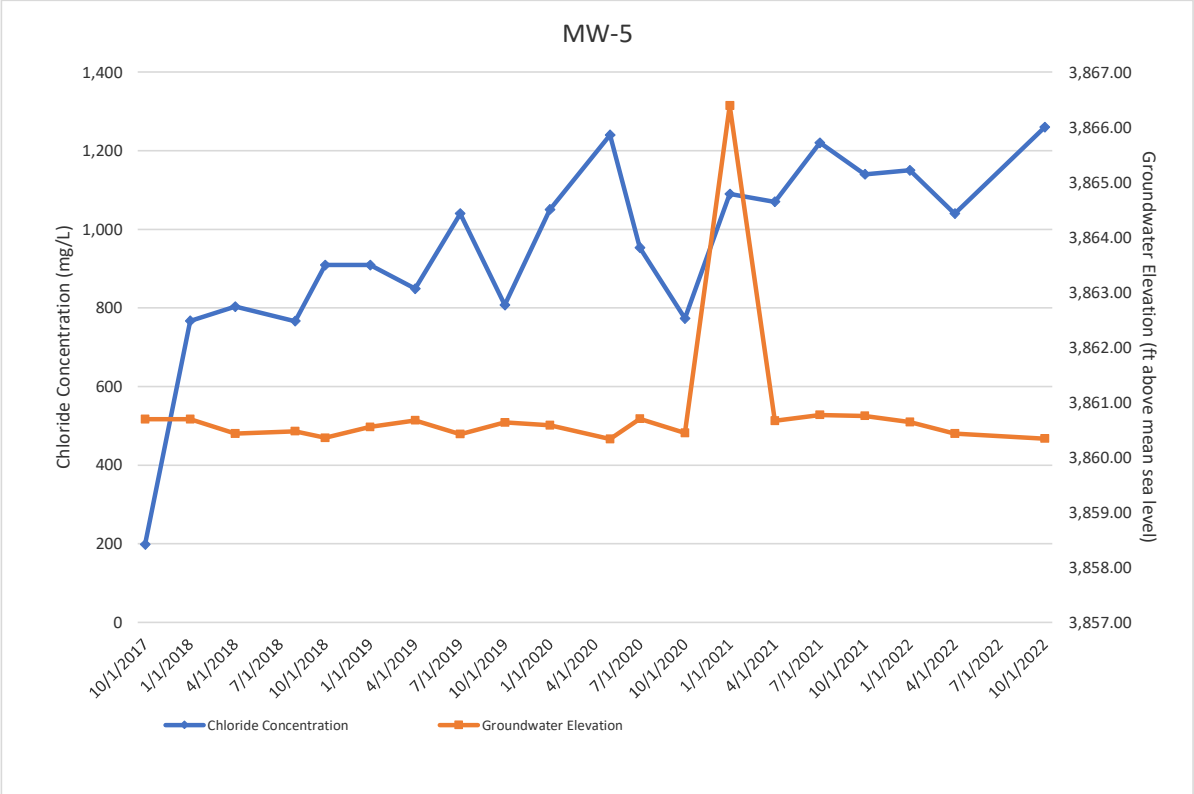


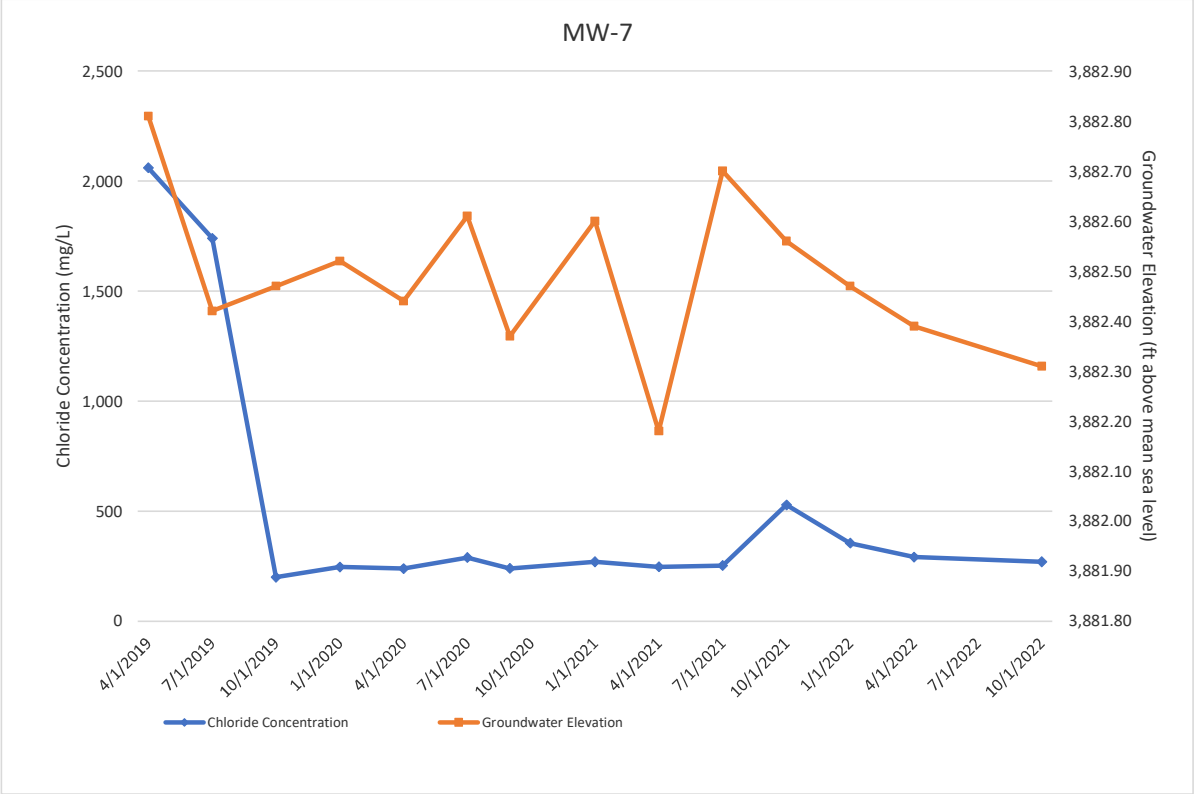
Chloride Concentration Graphs
Maverick Natural Resources - MCA #357
Lea County, New Mexico



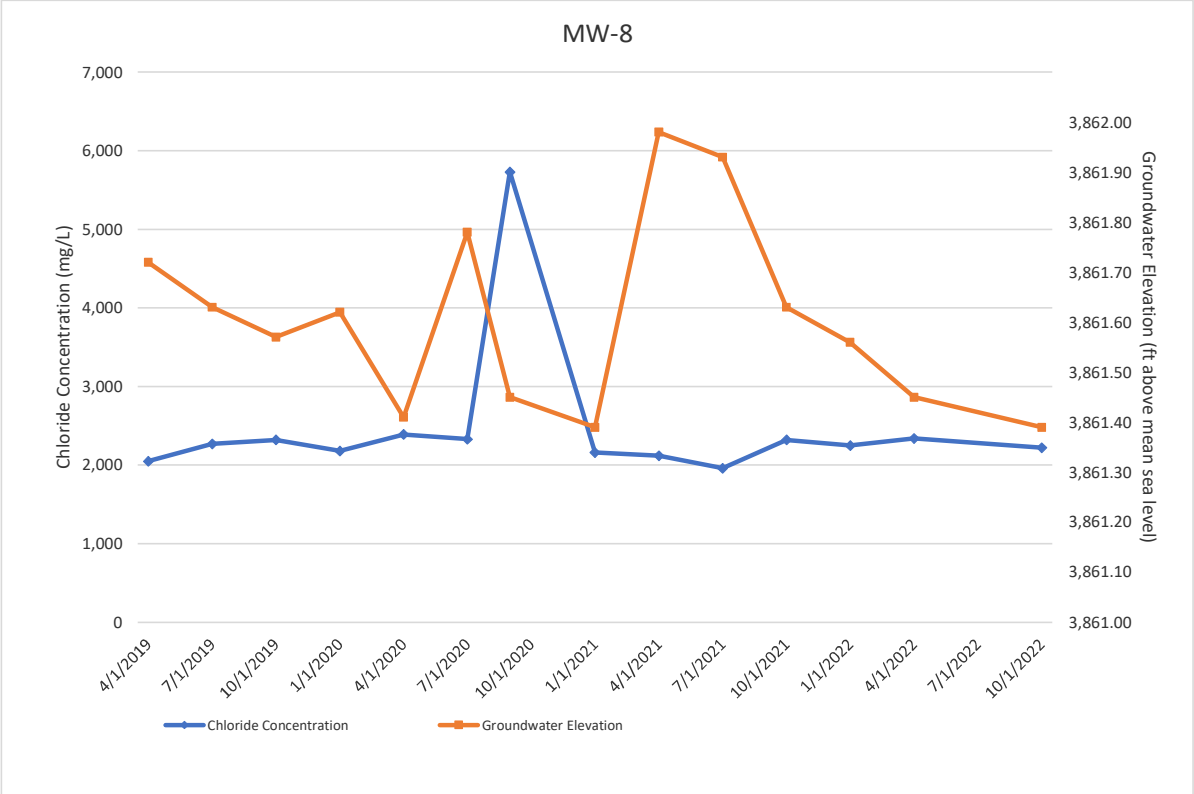


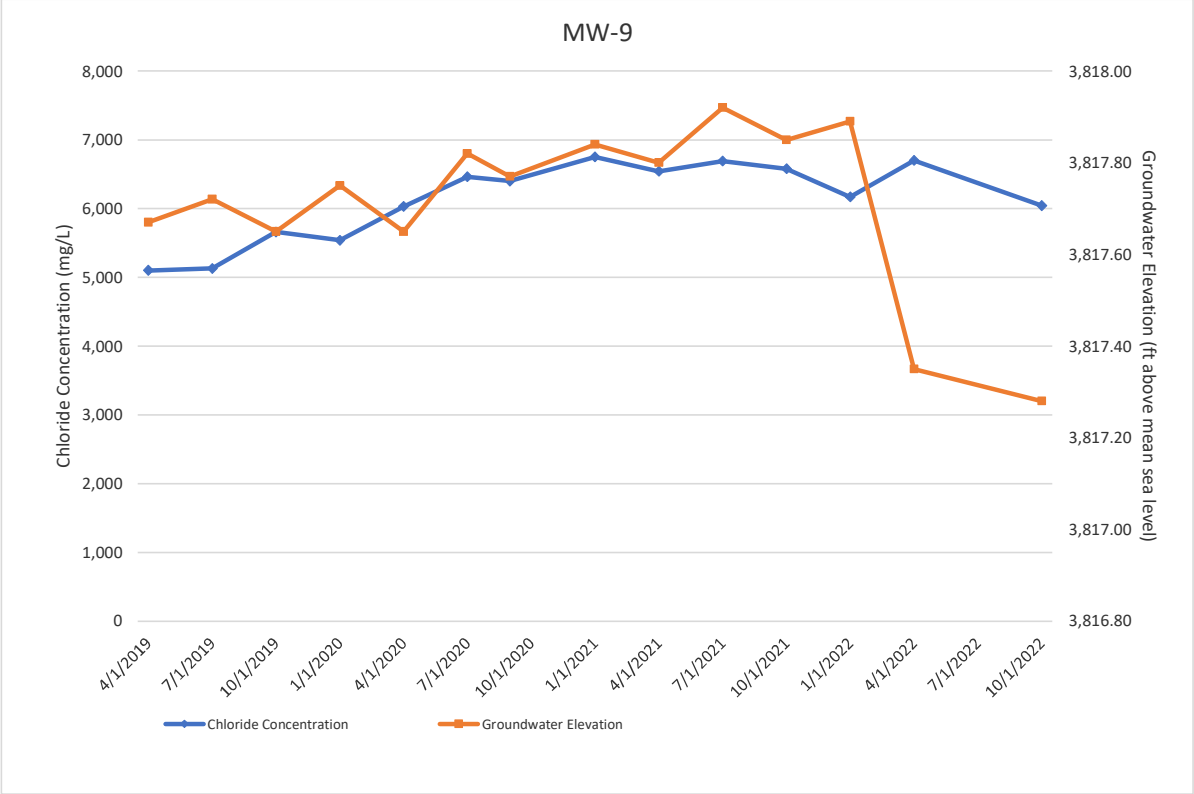
Chloride Concentration Graphs
Maverick Natural Resources - MCA #357
Lea County, New Mexico



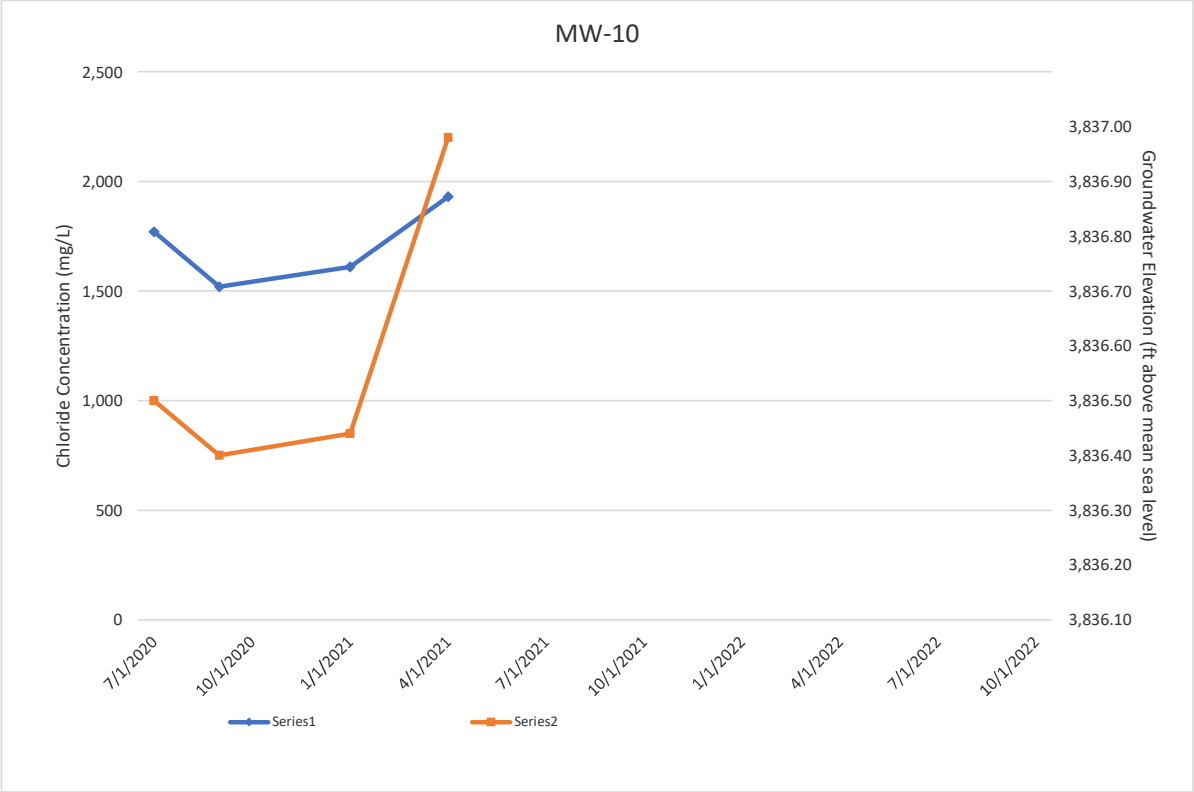


Chloride Concentration Graphs
Maverick Natural Resources - MCA #357
Lea County, New Mexico





Chloride Concentration Graphs
Maverick Natural Resources - MCA #357
Lea County, New Mexico



APPENDIX C: HISTORICAL GROUNDWATER GAUGING DATA

APPENDIX C
Historical Groundwater Gauging Data
MW-1
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	102.27	-	83.66	-	-	3,956.78	**3,873.12**
1/30/2018	-	-	83.81	-	-	3,956.78	**3,872.97**
4/10/2018	102.27	-	84.00	-	-	3,956.78	**3,872.78**
8/17/2018	-	-	84.05	-	-	3,956.78	**3,872.73**
10/18/2018	102.86	-	84.12	-	-	3,956.78	**3,872.66**
1/23/2019	103.05	-	83.96	-	-	3,956.78	**3,872.82**
4/25/2019	102.90	-	83.90	-	-	3,956.78	**3,872.88**
7/10/2019	102.90	-	84.17	-	-	3,956.78	**3,872.61**
10/9/2019	102.90	-	84.00	-	-	3,956.78	**3,872.78**
1/15/2020	102.90	-	84.15	-	-	3,956.78	**3,872.63**
4/28/2020	102.88	-	84.28	-	-	3,956.78	**3,872.50**
7/7/2020	102.70	-	84.07	-	-	3,956.78	**3,872.71**
10/1/2020	102.70	-	83.34	-	-	3,956.78	**3,873.44**
1/14/2021	102.70	-	83.30	-	-	3,956.78	**3,873.48**
4/6/2021	102.7	-	84.07	-	-	3,956.78	**3,872.71**
7/13/2021	102.7	-	83.81	-	-	3,956.78	**3,872.97**
10/8/2021	102.7	-	84.20	-	-	3,956.78	**3,872.58**
1/11/2022	102.7	-	84.31	-	-	3,956.78	**3,872.47**
4/4/2022	102.7	-	84.46	-	-	3,956.78	**3,872.32**
10/18/2022	102.7	-	84.50	-	-	3,956.78	**3,872.28**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-2
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	108.44	-	83.44	-	-	3,963.58	**3,880.14**
1/30/2018	-	-	83.39	-	-	3,963.58	**3,880.19**
4/10/2018	108.44	-	83.48	-	-	3,963.58	**3,880.10**
8/17/2018	-	-	83.50	-	-	3,963.58	**3,880.08**
10/18/2018	108.69	-	83.50	-	-	3,963.58	**3,880.08**
1/23/2019	108.76	-	83.20	-	-	3,963.58	**3,880.38**
4/25/2019	107.75	-	83.22	-	-	3,963.58	**3,880.36**
7/10/2019	107.75	-	83.40	-	-	3,963.58	**3,880.18**
10/9/2019	107.75	-	83.36	-	-	3,963.58	**3,880.22**
1/15/2020	107.75	-	83.31	-	-	3,963.58	**3,880.27**
4/28/2020	107.74	-	83.39	-	-	3,963.58	**3,880.19**
7/7/2020	107.80	-	83.18	-	-	3,963.58	**3,880.40**
10/1/2020	107.80	-	83.41	-	-	3,963.58	**3,880.17**
1/13/2021	107.80	-	83.38	-	-	3,963.58	**3,880.20**
4/6/2021	107.8	-	83.20	-	-	3,963.58	**3,880.38**
7/13/2021	107.8	-	83.05	-	-	3,963.58	**3,880.53**
10/7/2021	107.8	-	83.21	-	-	3,963.58	**3,880.37**
1/11/2022	107.8	-	83.30	-	-	3,963.58	**3,880.28**
4/4/2022	107.8	-	83.37	-	-	3,963.58	**3,880.21**
10/18/2022	107.8	-	83.44	-	-	3,963.58	**3,880.14**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-3
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	117.75	-	88.20	-	-	3,951.34	**3,863.14**
1/30/2018	-	-	89.16	-	-	3,951.34	**3,862.18**
4/10/2018	117.75	-	88.37	-	-	3,951.34	**3,862.97**
8/17/2018	-	-	88.31	-	-	3,951.34	**3,863.03**
10/18/2018	117.37	-	88.42	-	-	3,951.34	**3,862.92**
1/23/2019	117.29	-	88.08	-	-	3,951.34	**3,863.26**
4/24/2019	117.40	-	87.40	-	-	3,951.34	**3,863.94**
7/9/2019	117.40	-	88.28	-	-	3,951.34	**3,863.06**
10/8/2019	117.40	-	88.25	-	-	3,951.34	**3,863.09**
1/14/2020	117.40	-	88.23	-	-	3,951.34	**3,863.11**
4/28/2020	117.40	-	88.45	-	-	3,951.34	**3,862.89**
7/7/2020	117.30	-	88.01	-	-	3,951.34	**3,863.33**
10/1/2020	117.30	-	88.38	-	-	3,951.34	**3,862.96**
1/13/2021	117.30	-	88.34	-	-	3,951.34	**3,863.00**
4/6/2021	117.3	-	88.10	-	-	3,951.34	**3,863.24**
7/13/2021	117.3	-	87.70	-	-	3,951.34	**3,863.64**
10/7/2021	117.3	-	88.05	-	-	3,951.34	**3,863.29**
1/11/2022	117.3	-	88.26	-	-	3,951.34	**3,863.08**
4/4/2022	117.3	-	88.45	-	-	3,951.34	**3,862.89**
10/18/2022	117.3	-	88.51	-	-	3,951.34	**3,862.83**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-4
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	104.22	-	95.11	-	-	3,945.39	**3,850.28**
1/30/2018	-	-	94.97	-	-	3,945.39	**3,850.42**
4/10/2018	104.22	-	95.11	-	-	3,945.39	**3,850.28**
8/17/2018	-	-	95.00	-	-	3,945.39	**3,850.39**
10/18/2018	103.30	-	95.00	-	-	3,945.39	**3,850.39**
1/23/2019	102.80	-	94.76	-	-	3,945.39	**3,850.63**
4/25/2019	103.32	-	94.80	-	-	3,945.39	**3,850.59**
7/10/2019	103.32	-	92.18	-	-	3,945.39	**3,853.21**
10/9/2019	103.32	-	94.70	-	-	3,945.39	**3,850.69**
1/14/2020	103.32	-	94.72	-	-	3,945.39	**3,850.67**
4/28/2020	103.30	-	94.74	-	-	3,945.39	**3,850.65**
7/7/2020	103.20	-	94.50	-	-	3,945.39	**3,850.89**
10/1/2020	103.20	-	94.70	-	-	3,945.39	**3,850.69**
1/14/2021	103.20	-	94.66	-	-	3,945.39	**3,850.73**
4/6/2021	103.2	-	94.41	-	-	3,945.39	**3,850.98**
7/14/2021	103.2	-	94.22	-	-	3,945.39	**3,851.17**
10/7/2021	103.2	-	94.26	-	-	3,945.39	**3,851.13**
1/11/2022	103.2	-	94.30	-	-	3,945.39	**3,851.09**
4/4/2022	103.2	-	94.51	-	-	3,945.39	**3,850.88**
10/18/2022	103.2	-	94.58	-	-	3,945.39	**3,850.81**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-5
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	113.65	-	89.68	-	-	3,950.37	**3,860.69**
1/30/2018	-	-	89.68	-	-	3,950.37	**3,860.69**
4/10/2018	113.65	-	89.94	-	-	3,950.37	**3,860.43**
8/17/2018	-	-	89.90	-	-	3,950.37	**3,860.47**
10/18/2018	113.05	-	90.02	-	-	3,950.37	**3,860.35**
1/23/2019	113.05	-	89.82	-	-	3,950.37	**3,860.55**
4/25/2019	113.00	-	89.70	-	-	3,950.37	**3,860.67**
7/10/2019	113.00	-	89.95	-	-	3,950.37	**3,860.42**
10/9/2019	113.00	-	89.74	-	-	3,950.37	**3,860.63**
1/15/2020	113.00	-	89.79	-	-	3,950.37	**3,860.58**
4/28/2020	112.98	-	90.04	-	-	3,950.37	**3,860.33**
7/7/2020	113.00	-	89.67	-	-	3,950.37	**3,860.70**
10/1/2020	113.00	-	89.93	-	-	3,950.37	**3,860.44**
1/14/2021	113.00	-	83.98	-	-	3,950.37	**3,866.39**
4/6/2021	113	-	89.71	-	-	3,950.37	**3,860.66**
7/14/2021	113	-	89.60	-	-	3,950.37	**3,860.77**
10/8/2021	113	-	89.62	-	-	3,950.37	**3,860.75**
1/11/2022	113	-	89.73	-	-	3,950.37	**3,860.64**
4/4/2022	113	-	89.94	-	-	3,950.37	**3,860.43**
10/18/2022	113	-	90.03	-	-	3,950.37	**3,860.34**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-6
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	128.12	-	Dry	-	-	3,952.96	**Dry**
7/9/2019	128.12	-	Dry	-	-	3,952.96	**Dry**
10/8/2019	128.12	-	Dry	-	-	3,952.96	**Dry**
1/14/2020	128.12	-	Dry	-	-	3,952.96	**Dry**
4/28/2020	128.12	-	Dry	-	-	3,952.96	**Dry**
7/7/2020	128.10	-	Dry	-	-	3,952.96	**Dry**
9/30/2020	128.10	-	Dry	-	-	3,952.96	**Dry**
1/13/2021	128.10	-	Dry	-	-	3,952.96	**Dry**
4/6/2021	128.10	-	Dry	-	-	3,952.96	**Dry**
7/14/2021	128.10	-	Dry	-	-	3,952.96	**Dry**
10/8/2021	128.10	-	Dry	-	-	3,952.96	**Dry**
1/11/2022	128.10	-	Dry	-	-	3,952.96	**Dry**
4/4/2022	128.10	-	Dry	-	-	3,952.96	**Dry**
10/18/2022	128.10	-	Dry	-	-	3,952.96	**Dry**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-7
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	127.40	-	89.30	-	-	3,972.11	**3,882.81**
7/9/2019	127.40	-	89.69	-	-	3,972.11	**3,882.42**
10/8/2019	127.40	-	89.64	-	-	3,972.11	**3,882.47**
1/14/2020	127.40	-	89.59	-	-	3,972.11	**3,882.52**
4/28/2020	127.38	-	89.67	-	-	3,972.11	**3,882.44**
7/7/2020	127.30	-	89.50	-	-	3,972.11	**3,882.61**
9/30/2020	127.30	-	89.74	-	-	3,972.11	**3,882.37**
1/13/2021	127.30	-	89.51	-	-	3,972.11	**3,882.60**
4/6/2021	127.30	-	89.93	-	-	3,972.11	**3,882.18**
7/15/2021	127.30	-	89.41	-	-	3,972.11	**3,882.70**
10/8/2021	127.30	-	89.55	-	-	3,972.11	**3,882.56**
1/11/2022	127.30	-	89.64	-	-	3,972.11	**3,882.47**
4/4/2022	127.30	-	89.72	-	-	3,972.11	**3,882.39**
10/18/2022	127.30	-	89.80	-	-	3,972.11	**3,882.31**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-8
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	118.03	-	95.11	-	-	3,956.83	**3,861.72**
7/9/2019	118.03	-	95.20	-	-	3,956.83	**3,861.63**
10/8/2019	118.03	-	95.26	-	-	3,956.83	**3,861.57**
1/14/2020	118.03	-	95.21	-	-	3,956.83	**3,861.62**
4/28/2020	118.00	-	95.42	-	-	3,956.83	**3,861.41**
7/7/2020	118.02	-	95.05	-	-	3,956.83	**3,861.78**
9/30/2020	118.00	-	95.38	-	-	3,956.83	**3,861.45**
1/13/2021	118.00	-	95.44	-	-	3,956.83	**3,861.39**
4/6/2021	118.00	-	94.85	-	-	3,956.83	**3,861.98**
7/15/2021	118.00	-	94.90	-	-	3,956.83	**3,861.93**
10/8/2021	118.00	-	95.20	-	-	3,956.83	**3,861.63**
1/11/2022	118.00	-	95.27	-	-	3,956.83	**3,861.56**
4/4/2022	118.00	-	95.38	-	-	3,956.83	**3,861.45**
10/18/2022	118.00	-	95.44	-	-	3,956.83	**3,861.39**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-9
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	133.10	-	118.86	-	-	3,936.53	**3,817.67**
7/9/2019	133.10	-	118.81	-	-	3,936.53	**3,817.72**
10/8/2019	133.10	-	118.88	-	-	3,936.53	**3,817.65**
1/14/2020	133.10	-	118.78	-	-	3,936.53	**3,817.75**
4/28/2020	133.06	-	118.88	-	-	3,936.53	**3,817.65**
7/7/2020	133.50	-	118.71	-	-	3,936.53	**3,817.82**
9/30/2020	133.50	-	118.76	-	-	3,936.53	**3,817.77**
1/12/2021	133.50	-	118.69	-	-	3,936.53	**3,817.84**
4/6/2021	133.50	-	118.73	-	-	3,936.53	**3,817.80**
7/15/2021	133.50	-	118.61	-	-	3,936.53	**3,817.92**
10/8/2021	133.50	-	118.68	-	-	3,936.53	**3,817.85**
1/11/2022	133.50	-	118.64	-	-	3,936.53	**3,817.89**
4/4/2022	133.50	-	119.18	-	-	3,936.53	**3,817.35**
10/18/2022	133.50	-	119.25	-	-	3,936.53	**3,817.28**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-10
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	132.30	-	Dry	-	-	3,963.20	**Dry**
7/7/2020	132.53	-	126.70	-	-	3,963.20	**3,836.50**
9/30/2020	132.51	-	126.80	-	-	3,963.20	**3,836.40**
1/12/2021	132.51	-	126.76	-	-	3,963.20	**3,836.44**
4/6/2021	132.51	-	126.22	-	-	3,963.20	**3,836.98**
7/15/2021	132.51	-	Dry	-	-	3,963.20	**Dry**
10/8/2021	132.51	-	Dry	-	-	3,963.20	**Dry**
1/11/2022	132.51	-	Dry	-	-	3,963.20	**Dry**
4/4/2022	132.51	-	Dry	-	-	3,963.20	**Dry**
10/18/2022	132.51	-	Dry	-	-	3,963.20	**Dry**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-11
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	131.50	-	Dry	-	-	3,948.30	**Dry**
7/7/2020	132.88	-	Dry	-	-	3,948.30	**Dry**
9/30/2020	132.88	-	Dry	-	-	3,948.30	**Dry**
1/12/2021	132.88	-	Dry	-	-	3,948.30	**Dry**
4/6/2021	132.88	-	Dry	-	-	3,948.30	**Dry**
7/15/2021	132.88	-	Dry	-	-	3,948.30	**Dry**
10/8/2021	132.88	-	Dry	-	-	3,948.30	**Dry**
1/11/2022	132.88	-	Dry	-	-	3,948.30	**Dry**
4/4/2022	132.88	-	Dry	-	-	3,948.30	**Dry**
10/18/2022	132.88	-	Dry	-	-	3,948.30	**Dry**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-12
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	132.00	-	Dry	-	-	3,930.91	**Dry**
7/7/2020	132.03	-	Dry	-	-	3,930.91	**Dry**
9/30/2020	132.30	-	Dry	-	-	3,930.91	**Dry**
1/12/2021	132.30	-	Dry	-	-	3,930.91	**Dry**
4/6/2021	132.30	-	Dry	-	-	3,930.91	**Dry**
7/15/2021	132.30	-	Dry	-	-	3,930.91	**Dry**
10/8/2021	132.30	-	Dry	-	-	3,930.91	**Dry**
1/11/2022	132.30	-	Dry	-	-	3,930.91	**Dry**
4/4/2022	132.30	-	Dry	-	-	3,930.91	**Dry**
10/18/2022	132.30	-	Dry	-	-	3,930.91	**Dry**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX C
Historical Groundwater Gauging Data
MW-13
MCA 357
Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
9/30/2020	133.25	-	Dry	-	-	3,931.32	**Dry**
1/12/2021	133.25	-	Dry	-	-	3,931.32	**Dry**
4/6/2021	133.25	-	Dry	-	-	3,931.32	**Dry**
7/15/2021	133.25	-	Dry	-	-	3,931.32	**Dry**
10/8/2021	132.25	-	Dry	-	-	3,931.32	**Dry**
1/11/2022	132.25	-	Dry	-	-	3,931.32	**Dry**
4/4/2022	132.25	-	Dry	-	-	3,931.32	**Dry**
10/18/2022	132.25	-	Dry	-	-	3,931.32	**Dry**

Notes:

TOC	Top of Casing
AMSL	Above Mean Sea Level
BTOC	Below Top of Casing
-	No Measurement

APPENDIX D: HISTORICAL GROUNDWATER ANALYTICAL DATA

APPENDIX D
Historical Groundwater Analytical Data
MW-1
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
8/17/2018	27.1	22,100	211	27,400
10/18/2018	38.4	16,000	241	31,000
1/23/2019	65.8	26,900	404	47,500
4/25/2019	-	11,000	-	34,400
7/9/2019	79	30,200	459	78,900
10/9/2019	21.9	11,400	179	27,000
1/15/2020	37.3	16,400	283	29,200
5/1/2020	79.6	37,200	490	98,200
7/9/2020	26	13,200	232	30,600
10/1/2020	16.1	8,700	161	17,500
1/14/2021	23.8	12,300	221	28,100
4/8/2021	20.8	11,000	205	27,200
7/13/2021	14.5	8,050	138	19,600
7/13/2021	18.9	10,800	191	28,000
10/8/2021	40.1	18,800	305	37,000
1/13/2022	167	55,800	756	83,200
4/7/2022	18.4	11,000	194	21,300
10/13/2022	21.7	12,400	222	27,500

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-2
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
10/4/2017	4.6	4,620	198	7,080
1/30/2018	15.3	4,340	173	8,600
4/10/2018	16.3	4,940	227	12,100
8/17/2018	5.12	5,330	212	11,300
10/18/2018	5.13	5,160	213	10,500
1/23/2019	6.95	4,840	225	11,100
4/25/2019	-	4,870	-	14,800
7/9/2019	4.85 J	5,500	253	13,500 Q
10/9/2019	7.30 J	5,280	212	12,200
1/15/2020	9.76 J	5,120	243	9,300
4/30/2020	5.41	5,640	253	12,700
7/9/2020	8.24 J	5,610	252	13,600
10/1/2020	7.23 J	5,690	268	11,100
1/13/2021	7.42 J	5,870	263	11,900
4/7/2021	8.22 J	5,340	260	10,100
7/13/2021	8.52 J	5,300	242	13,600
10/7/2021	9.32 J	5,800	263	10,600
1/12/2022	7.04 J	5,590	269	13,900
4/6/2022	10.2	6,010	306	7,460
10/13/2022	10.4	5,440	270	9,460

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-3
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
10/4/2017	11.2	5,200	171	8,320
1/30/2018	19.6	4,210	171	8,800
4/10/2018	9.2	5,110	186	12,200
8/17/2018	9.4	4,360	170	10,400
10/18/2018	8.68	4,520	165	10,200
1/23/2019	10.3	4,560	175	11,000
4/24/2019	-	4,440	-	13,800
7/9/2019	8.42	4,740	183	12,800
10/8/2019	9.71 J	4,620	160	11,400
1/14/2020	11.9	4,340	172	9,200
4/30/2020	7.18	4,380	177	10,600
7/9/2020	10.3	4,540	178	11,000
10/1/2020	8.98 J	4,440	183	8,860
1/13/2021	9.20 J	4,550	182	9,320
4/7/2021	10.1	4,380	175	10,700
7/13/2021	10.2	4,190	162	11,100
10/7/2021	10.7	4,280	171	9,180
1/12/2022	8.81 J	4,300	180	8,380
4/5/2022	8.7	4,310	185	5,860
10/12/2022	11.5	3,870	159	7,080

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-4
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
10/4/2017	7.8	5,630	165	7,080
1/30/2018	<0.50	4,970	16	7,880
4/10/2018	2.52	5,490	187	12,100
8/17/2018	5.3	6,140	173	11,700
10/18/2018	4.55	5,850	171	11,600
1/23/2019	6.96	5,620	180	12,200
4/25/2019	-	5,600	-	15,700
7/9/2019	5.03	6,330	190	13,700 Q
10/9/2019	7.57 J	6,020	169	13,100
1/14/2020	9.70 J	5,530	176	9,040
4/30/2020	5.23	5,770	187	13,300
7/9/2020	8.55 J	6,170	184	13,700
10/1/2020	7.47 J	6,140	193	11,500
1/14/2021	7.42 J	6,630	195	12,900
4/8/2021	8.66 J	5,930	186	15,200
7/14/2021	8.93 J	5,880	163	15,200
10/7/2021	9.67 J	6,320	179	13,100
1/12/2022	7.82 J	6,120	181	14,700
4/6/2022	8.35	6,730	198	8,020
10/12/2022	11	6,370	174	13,800

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-5
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
10/4/2017	2.3	198	125	1,820
1/30/2018	2.3	767	136	1,640
4/10/2018	0.985 J	803	149	2,160
8/17/2018	2.29	766	142	2,240
10/18/2018	2.23	909	117	2,310
1/23/2019	2.28	909	114	2,470
4/25/2019	-	849	-	3,290
7/9/2019	1.82	1,040	138	3,000
10/9/2019	1.71	807	130	2,300 J3
1/15/2020	2.22	1,050	118	1,580 J3
5/1/2020	3.04 J	1,240	130	2,740
7/9/2020	3.63 J	953	142	3,260
10/1/2020	2.94 J	773	164	2,200
1/14/2021	2.05	1,090	133	2,700
4/8/2021	1.99	1,070	109	3,630
7/14/2021	2.19	1,220	101	3,530
10/8/2021	2.28	1,140	122	2,910
1/12/2022	2.04	1,150	136	3,320
4/7/2022	4.49	1,040	152	3,530
10/13/2022	2.95	1,260	124	3,060

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-6
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/24/2019	Not Sampled - Dry			
7/9/2019	Not Sampled - Dry			
10/8/2019	Not Sampled - Dry			
1/14/2020	Not Sampled - Dry			
4/28/2020	Not Sampled - Dry			
7/7/2020	Not Sampled - Dry			
9/30/2020	Not Sampled - Dry			
1/13/2021	Not Sampled - Dry			
4/6/2021	Not Sampled - Dry			
7/14/2021	Not Sampled - Dry			
10/7/2021	Not Sampled - Dry			
1/11/2022	Not Sampled - Dry			
4/7/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-7
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/24/2019	-	2,060	-	6,020
7/9/2019	2.60 J	1,740	211	4,630
10/8/2019	1.08	200	97	763
1/14/2020	1.62	246	97	853
4/30/2020	1.18	239	98	846
7/8/2020	1.47	289	95	880
9/30/2020	1.08	240	111	866
1/13/2021	1.23	270	97	834
4/7/2021	1.33	247	93	858
7/15/2021	1.38	253	90	902
10/8/2021	1.6	528	100	1,460
1/11/2022	1.57	355	81	1,120
4/6/2022	1.58	291	86	976
10/13/2022	2.55	270	87	854

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-8
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/24/2019	-	2,050	-	6,530
7/9/2019	2.74	2,270	104	6,620
10/8/2019	2.5	2,320	89	5,740
1/14/2020	2.95	2,180	100	4,870
4/30/2020	3.95 J	2,390	95	5,580
7/8/2020	6.43 J	2,330	99	5,750
9/30/2020	7.03 J	5,730	156	5,880
1/13/2021	4.05 J	2,160	93	4,890
4/7/2021	6.53 J	2,120	89	5,810 J3
7/15/2021	6.73 J	1,960	54	6,150
10/8/2021	7.59 J	2,320	93	5,100
1/13/2022	4.80 J	2,250	96	4,740
4/5/2022	5.18	2,340	99	3,420
10/12/2022	8.99	2,220	87	5,110

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-9
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/24/2019	-	5,100	-	15,800
7/9/2019	7.09	5,130	376	17,100
10/8/2019	9.26 J	5,660	353	13,200
1/14/2020	11.4	5,540	388	12,700
4/30/2020	8.51 J	6,030	423	14,500
7/8/2020	10.3	6,460	438	16,000
9/30/2020	9.03 J	6,400	461	16,900
1/12/2021	8.99 J	6,750	487	12,900
4/6/2021	9.70 J	6,540	477	14,100
7/15/2021	10.1	6,690	463	19,300
10/8/2021	11.4	6,580	495	14,300
1/12/2022	8.85 J	6,170	472	16,200
4/6/2022	11.3	6,700	526	12,800
10/12/2022	11	6,040	470	15,600

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-10
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/28/2020	Not Sampled - Dry			
7/8/2020	7.09	5,130	376	17,100
9/30/2020	9.26 J	5,660	353	13,200
1/12/2021	11.4	5,540	388	12,700
4/6/2021	8.51 J	6,030	423	14,500
7/15/2021	Not Sampled - Dry			
10/8/2021	Not Sampled - Dry			
1/11/2022	Not Sampled - Dry			
4/6/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-11
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/28/2020	Not Sampled - Dry			
7/7/2020	Not Sampled - Dry			
9/30/2020	Not Sampled - Dry			
1/12/2021	Not Sampled - Dry			
4/6/2021	Not Sampled - Dry			
7/15/2021	Not Sampled - Dry			
10/8/2021	Not Sampled - Dry			
1/11/2022	Not Sampled - Dry			
4/6/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-12
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
4/28/2020	Not Sampled - Dry			
7/7/2020	Not Sampled - Dry			
9/30/2020	Not Sampled - Dry			
1/12/2021	Not Sampled - Dry			
7/15/2021	Not Sampled - Dry			
10/8/2021	Not Sampled - Dry			
1/11/2022	Not Sampled - Dry			
4/6/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

APPENDIX D
Historical Groundwater Analytical Data
MW-13
MCA-357
Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	**NE**	**250**	**600**	**1000**
9/30/2020	Not Sampled - Dry			
1/12/2021	Not Sampled - Dry			
7/15/2021	Not Sampled - Dry			
10/8/2021	Not Sampled - Dry			
1/11/2022	Not Sampled - Dry			
4/6/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			

Notes:

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

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

CONDITIONS

Action 190477

CONDITIONS

Operator:	OGRID:
Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	331199
	Action Number: 190477
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2022 Annual Report for MCA 357: Content Satisfactory 1. Proceed with plans to change groundwater sampling frequencies at the site from annual to semi-annual. 2. Please submit the 2023 annual report (if it hasn't already been submitted to OCD) 3. Submit the 2024 Annual Monitoring Report to OCD by April 1, 2025.	6/3/2024