TETRA TECH

REVIEWED
By Mike Buchanan at 9:20 am, Jun 18, 2024

March 24, 2022

Review of the 2021 Annual Monitoring Remedial Activities Report for MCA Well Number 357, 1RP-3025: Content Satisfactory
1. Reduce groundwater sampling frequency to semi-annual until COCs are demonstrated below allowable concentrations per the WQCC.
2. ***To date 06/18/2024, Conoco Phillips has not proposed a groundwater abatement option for the clean-up of high TDS and chlorides. This was originally requested in the Corrective Action Plan dated 10/30/2014 for MCA Well #357, but has not been submitted. A follow up letter from the OCD may be issued if this is not proposed in 60 days from 06/18/2024***
3. Submit the 2024 Annual Groundwater Report by April 1, 2025.

Mr. Bradford Billings
State of New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2021 Annual Monitoring and Remedial Activities Report
ConocoPhillips – MCA Well Number 357, 1RP-3025
Lea County, New Mexico

Mr. Billings:

This report details the groundwater monitoring and monitor well installation at the ConocoPhillips Company (COP) MCA Well Number 357, 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 in western Lea County (Figure 1). The Site was assigned the identifier 1RP-3025 by the State of New Mexico Oil Conservation Division (NMOCD).

1.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

On December 7, 2013, COP submitted a Release Notification and Corrective Action Form C-141 to the NMOCD. The source of the release was recorded as being due to external corrosion of a flow line, which resulted in an approximate affected ground surface/pasture area of approximately 5,600 square feet. An estimated 24 barrels (bbls) of produced water was released of which no fluids were recovered.

Previous environmental assessment activities conducted by others included a drilling and soil sampling program, analytical laboratory analyses, and preliminary determinations of impacts to environmental media. Based on those preliminary determinations, a Corrective Action Plan (CAP) was submitted to the NMOCD on October 30, 2014. The CAP was approved in October 2014. Approved CAP activities were initiated in November 2014 and completed on December 5, 2014.

Following the CAP approval, monitor well MW-1 was installed at the Site in January 2015 to an approximate depth of 100 feet below ground surface (bgs). Groundwater samples from MW-1 (Rice Well #1) were collected on January 16, 2015. Laboratory analytical results indicated the concentration of chloride in MW-1 (39,500 milligrams per liter [mg/L]) exceeded New Mexico Water Quality Control Commission (NMWQCC) guidance levels of 250 mg/L.

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Houston, Texas 77042
www.tetratech.com

A review of the previous assessment activities conducted by others indicates that two downgradient monitor wells at the nearby Maljamar Gas Plant have been determined to be affected by a separate chloride plume unrelated to operations and/or historical releases associated with Maljamar Gas Plant and are no longer part of the groundwater monitoring program for the plant (MW-18 and MW-20).

On May 28, 2015, GHD collected groundwater samples from three monitor wells (MW-1, MW-18, and MW-20). Concentrations of chloride ranged from 6,300 mg/L to 37,400 mg/L, and concentrations of total dissolved solids (TDS) ranged from 18,900 mg/L to 27,800 mg/L. This data indicated a potential source may exist in the up or cross gradient direction between the monitor well network at the Maljamar Gas Plant and the Site.

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

2.0 HYDROGEOLOGY

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.

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 115 feet bgs with static groundwater water levels at approximately 83 to 98 feet bgs.

3.0 2021 GROUNDWATER MONITORING

3.1 Methodology

The quarterly groundwater monitoring events occurred in January, April, July, and October 2021. MW-6, MW-11, MW-12, and MW-13 were dry during all four quarterly groundwater monitoring events, and MW-10 was dry during the third and fourth quarter events (July and October). The water levels measurements are summarized in Table 1, and the groundwater gradient maps are included in Figures 3 through 6. Figure

7 through 9 depict the chloride concentrations at the Site, and Figure 10 through 14 depict the TDS concentrations at the Site.

Prior to purging the wells, each well was gauged to measure the depth to groundwater and PSH, if any. No PSH was detected in any of the monitor wells. Each sampled monitoring well was sampled utilizing low flow sampling techniques. All groundwater samples were collected and analyzed for bromide, sulfate, and chlorides by EPA Method 9056A, and TDS by SM Method 2540C and anions by EPA Method 9056A. All groundwater samples were transported to Pace Analytical Services, LLC, in Mount Juliet, Tennessee under chain-of-custody documentation. The laboratory analytical results are summarized in Table 2, and the analytical reports and chain-of-custody documentation are presented in Appendix A. Chloride concentration graphs are presented in Appendix B.

3.2 2021 Groundwater Gradient

Water table maps were generated for all four sampling events (January, April, July, and October 2021). The hydraulic gradient was generally to the south-southwest, consistent with historical data. The hydraulic gradient at the Site for the four events in 2021 ranged from approximately 0.025431 to 0.02417; the average hydraulic gradient was approximately 0.02427.

3.3 2021 Groundwater Analytical Results

During the 2021 sampling events, concentrations of chloride and TDS in wells MW-1 through MW-5 and MW-8 through MW-10 exceeded the applicable NMWQCC groundwater quality standards (250 mg/L for chloride and 1,000 mg/L for TDS) for all four sampling events. Additionally, the concentration of chloride in the samples collected from MW-7 in January, July, and October 2021, the concentration of TDS in MW-7 in October 2021, and the concentration of sulfate in the duplicate sample collected from MW-1 in January 2021 exceeded the applicable NMWQCC groundwater quality standards. No additional exceedances were reported.

The highest concentrations of chloride and TDS were reported in MW-1. Concentrations of chloride in MW-1 ranged from 8,050 mg/L in July 2021 to 18,800 mg/L in October 2021. Concentrations in the majority of monitor wells appear to be relatively stable. The October 2021 concentration of chlorides in MW-1 increased significantly and will continue to be monitored. Concentrations of TDS in MW-1 ranged from 19,600 in April 2021 to 37,000 in October 2021.

4.0 WORK PLAN

Based on the size of the monitor well network and data accumulated to date, Tetra Tech requests the groundwater sampling program be reduced to a semi-annual basis. Annual reporting to the NMOCD will continue.

If you have any questions, please call me at (832) 251-6026.

Sincerely,
Tetra Tech, Inc.

Julie Evans
Project Manager

Reviewed By:

Charles H. Terhune IV, P.G.
Senior Project Manager

cc: Ms. Jenni Fortunato – ConocoPhillips

Attachments:

Figure 1 Site Location Map
Figure 2 Site Map
Figure 3 Groundwater Gradient Map – January 2021
Figure 4 Groundwater Gradient Map – April 2021
Figure 5 Groundwater Gradient Map – July 2021
Figure 6 Groundwater Gradient Map – October 2021
Figure 7 Chloride Concentration Map – January 2021
Figure 8 Chloride Concentration Map – April 2021
Figure 9 Chloride Concentration Map – July 2021
Figure 10 Chloride Concentration Map – October 2021
Figure 11 TDS Concentration Map – January 2021
Figure 12 TDS Concentration Map – April 2021
Figure 13 TDS Concentration Map – July 2021
Figure 14 TDS Concentration Map – October 2021
Table 1 – Summary of Groundwater Elevations and PSH Thickness
Table 2 – Summary of Groundwater Analytical Data
Appendix A – Laboratory Analytical Data and Chain of Custody Documentation
Appendix B – Chloride Concentration Graphs

TETRA TECH

FIGURES

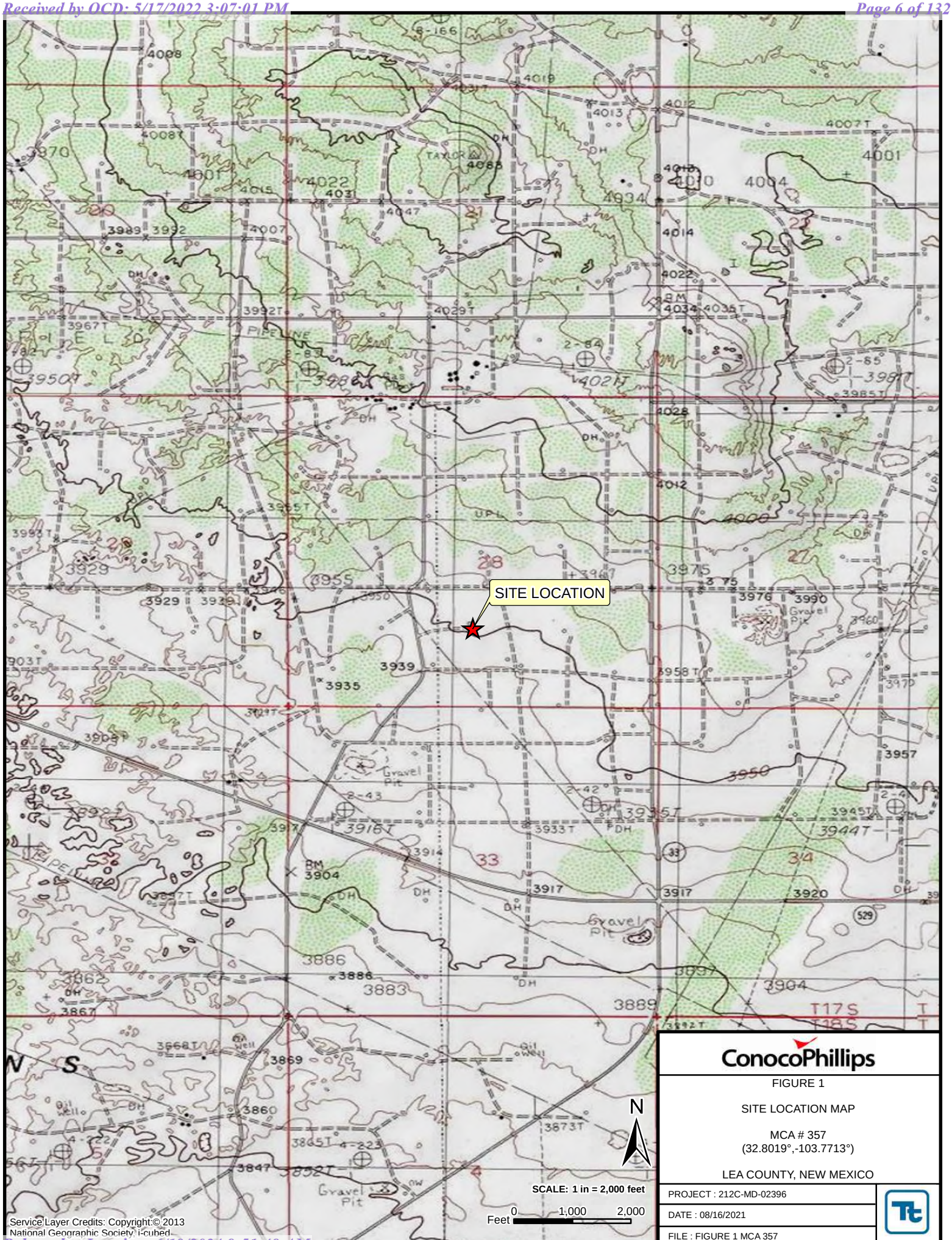

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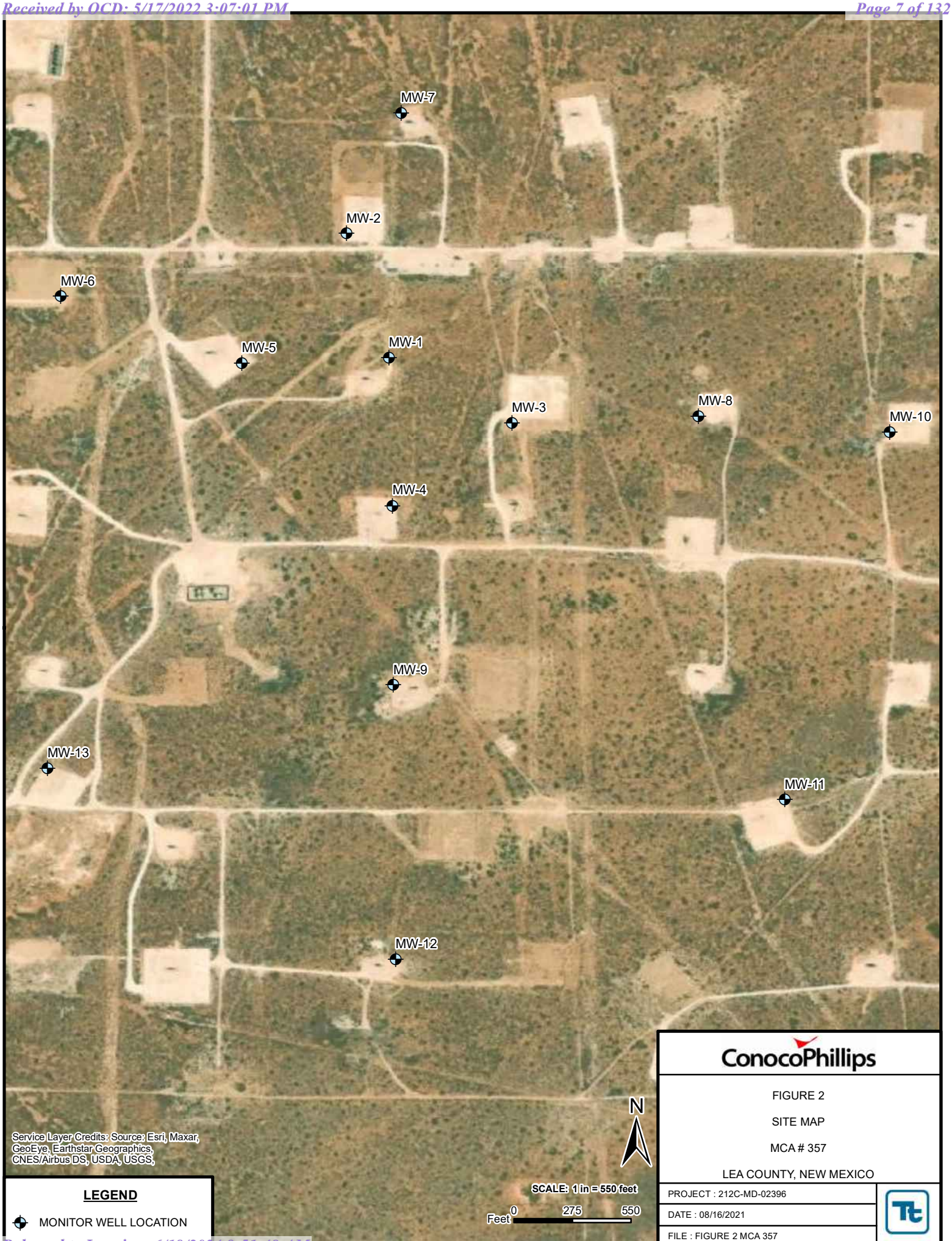
FIGURE 1

SITE LOCATION MAP

MCA # 357
(32.8019°,-103.7713°)

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 08/16/2021	
FILE : FIGURE 1 MCA 357	



ConocoPhillips

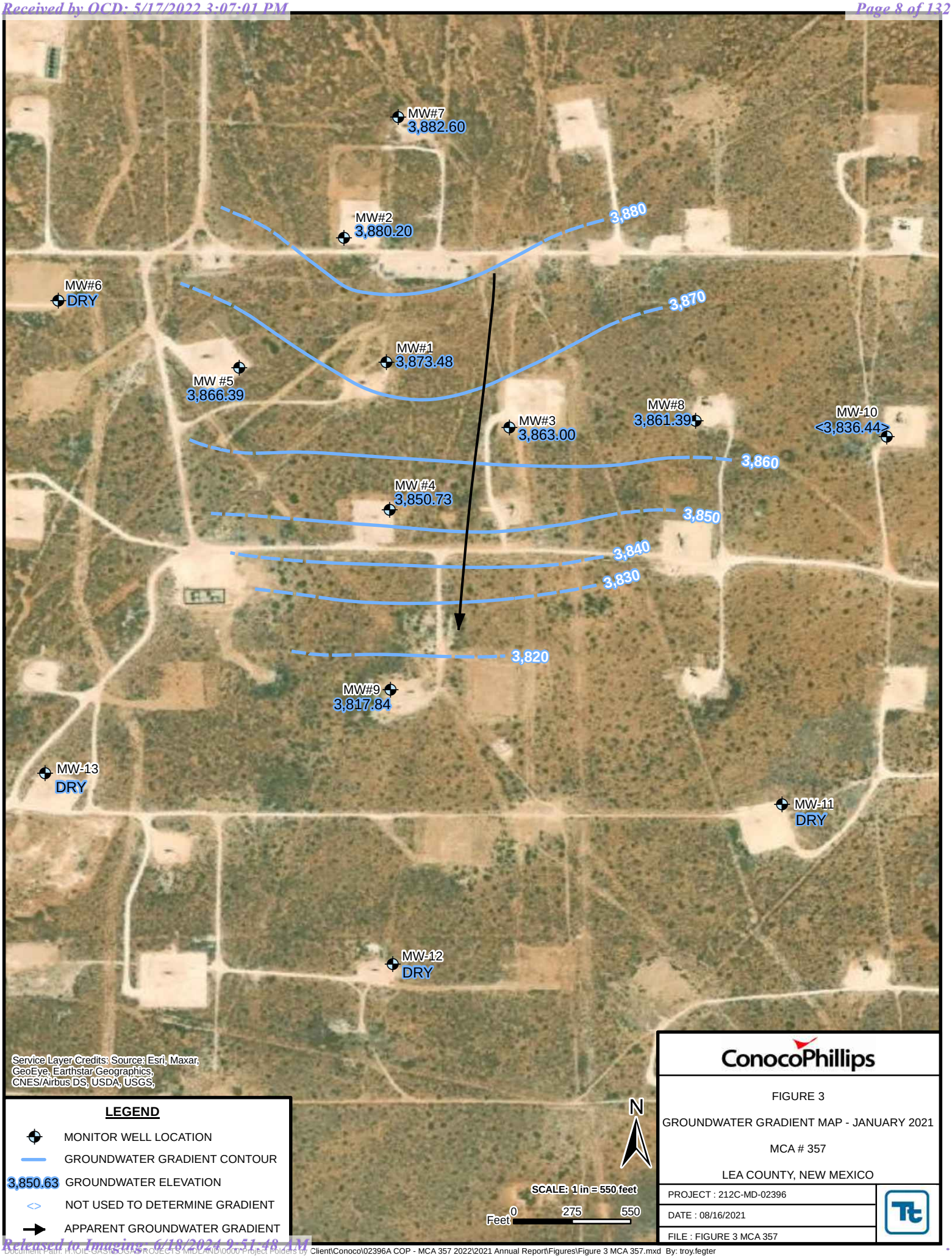
FIGURE 2

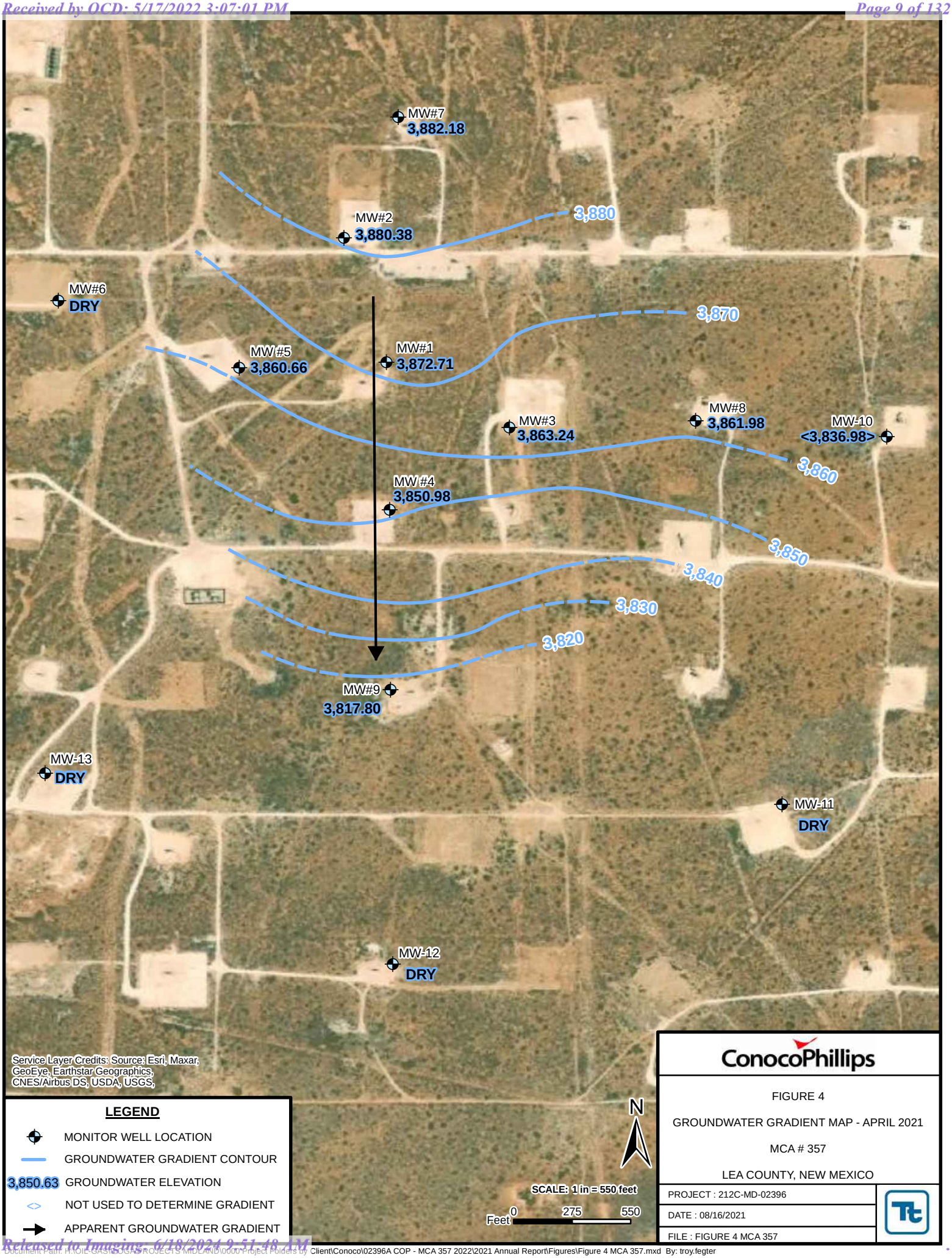
SITE MAP

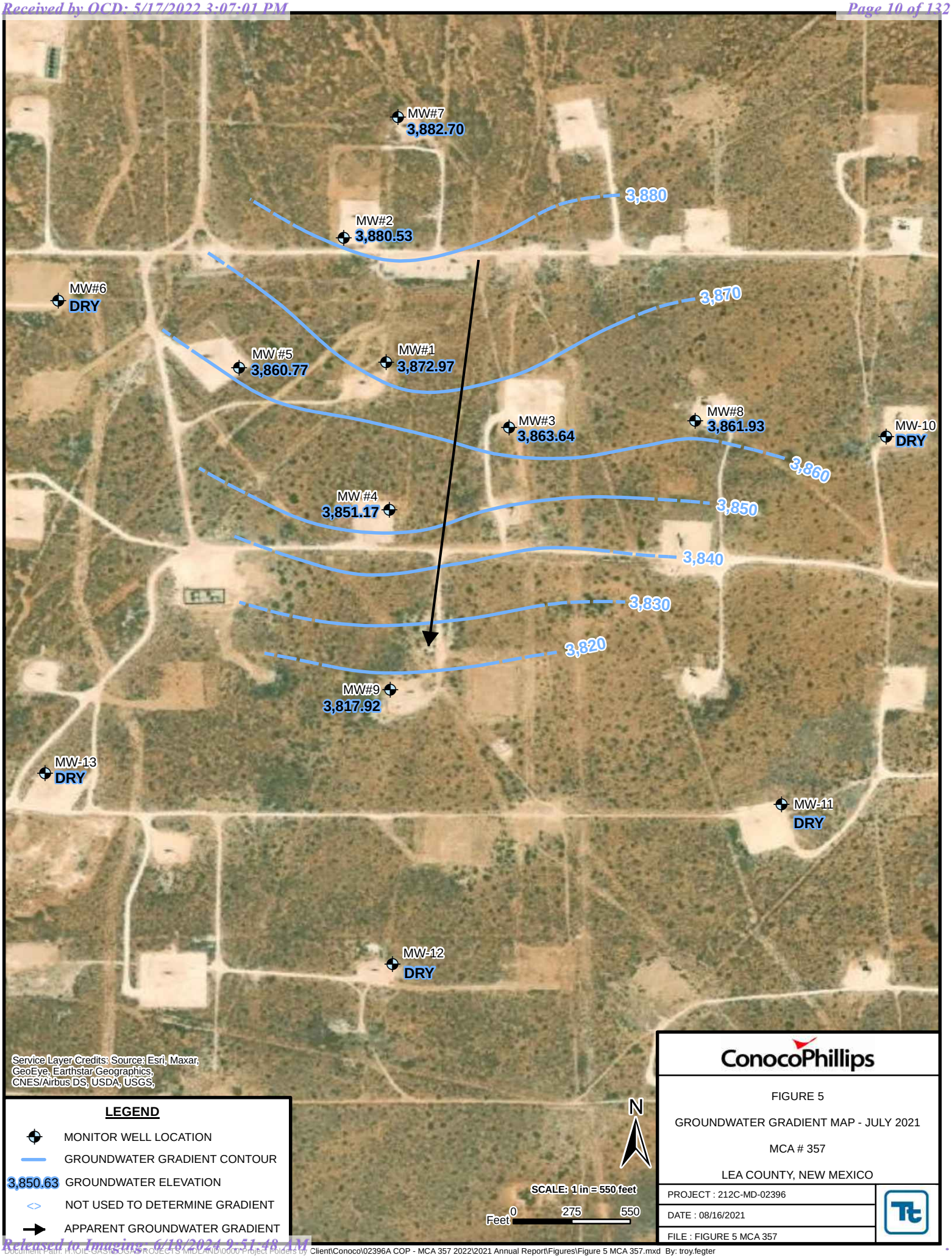
MCA # 357

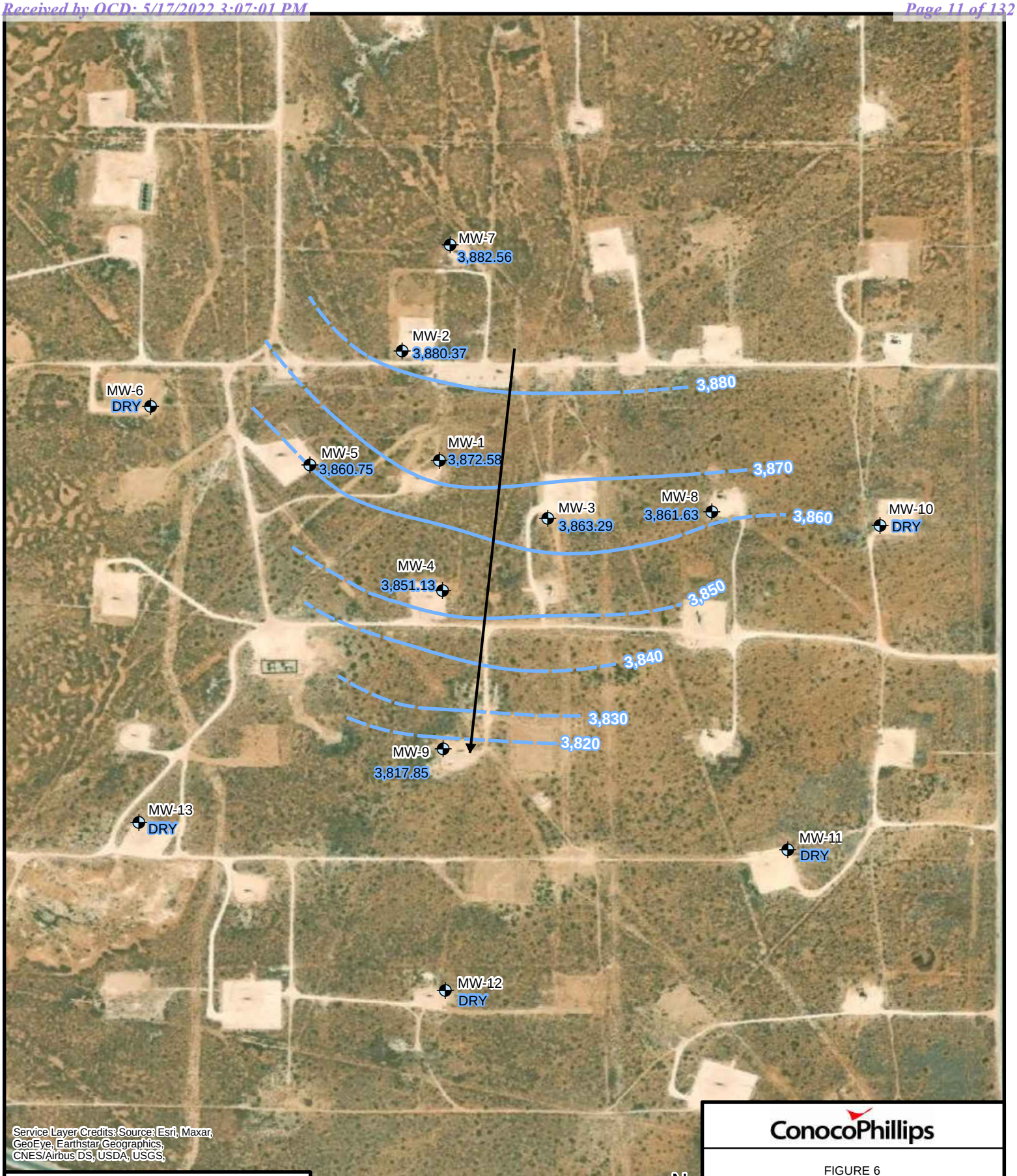
LEA COUNTY, NEW MEXICO

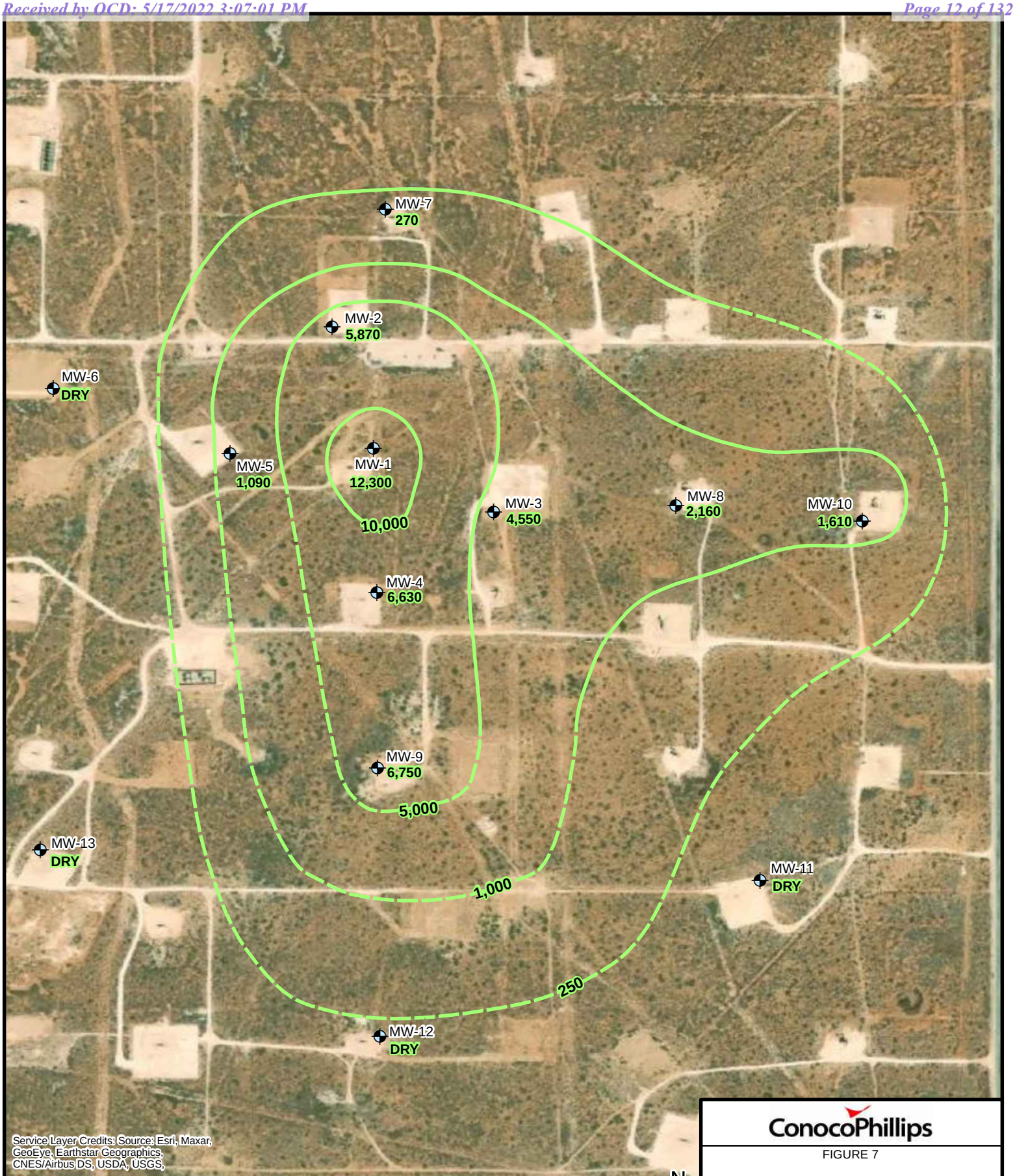
PROJECT : 212C-MD-02396	
DATE : 08/16/2021	
FILE : FIGURE 2 MCA 357	











LEGEND

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

ConocoPhillips

FIGURE 7

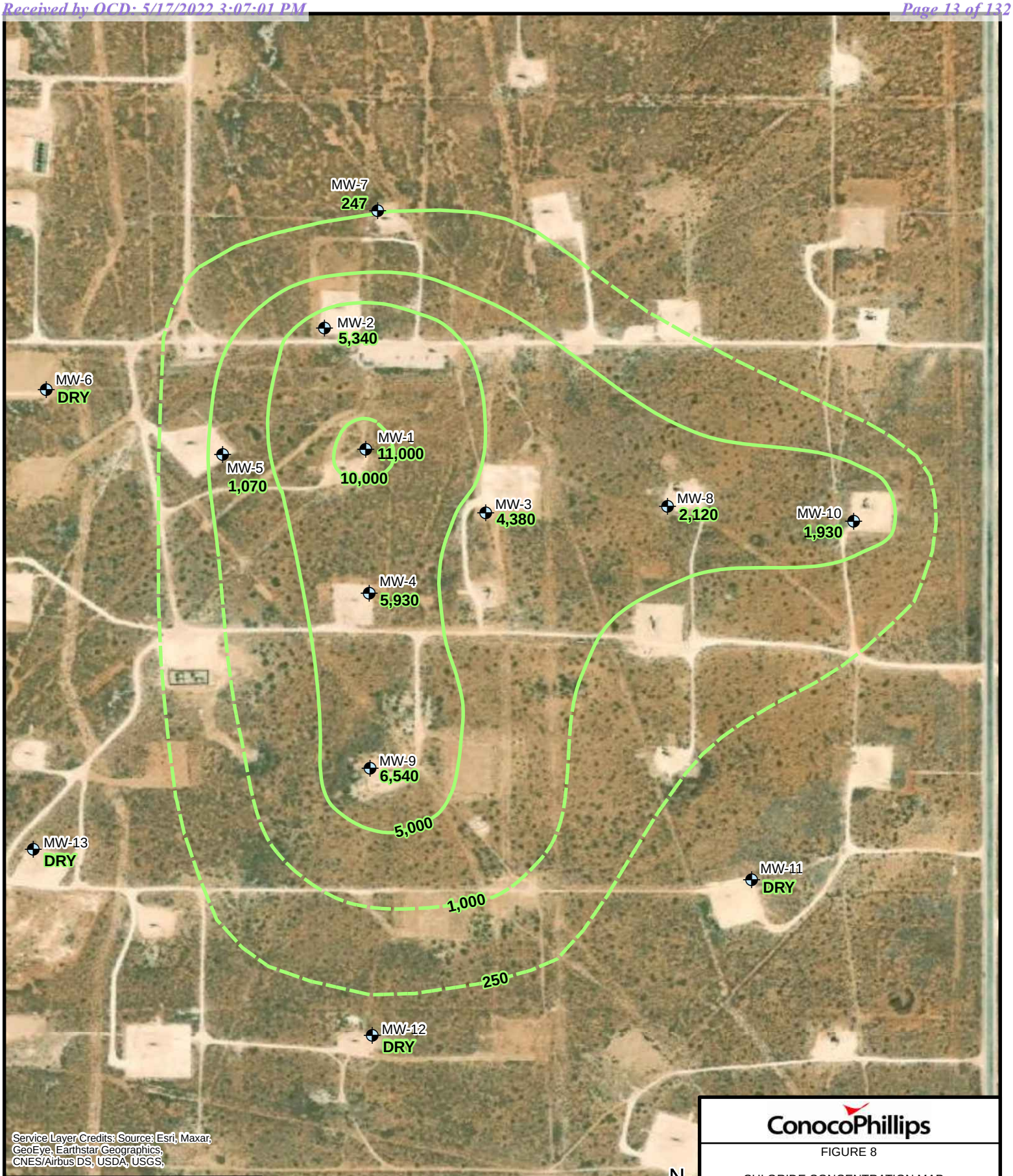
CHLORIDE CONCENTRATION MAP - JANUARY 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 08/31/2021	
FILE : FIGURE 7 MCA 357	

Document Path: H:\OIL GAS\GIS\PROJECTS\MIDLAND\0000 Project Folders by Client\Conoco\02396A COP - MCA 357 2022\2021 Annual Report\Figures\Figure 7 MCA 357.mxd User Name: troy.fegter



LEGEND

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

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FIGURE 8

CHLORIDE CONCENTRATION MAP - APRIL 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 09/01/2021	
FILE : FIGURE 8 MCA 357	

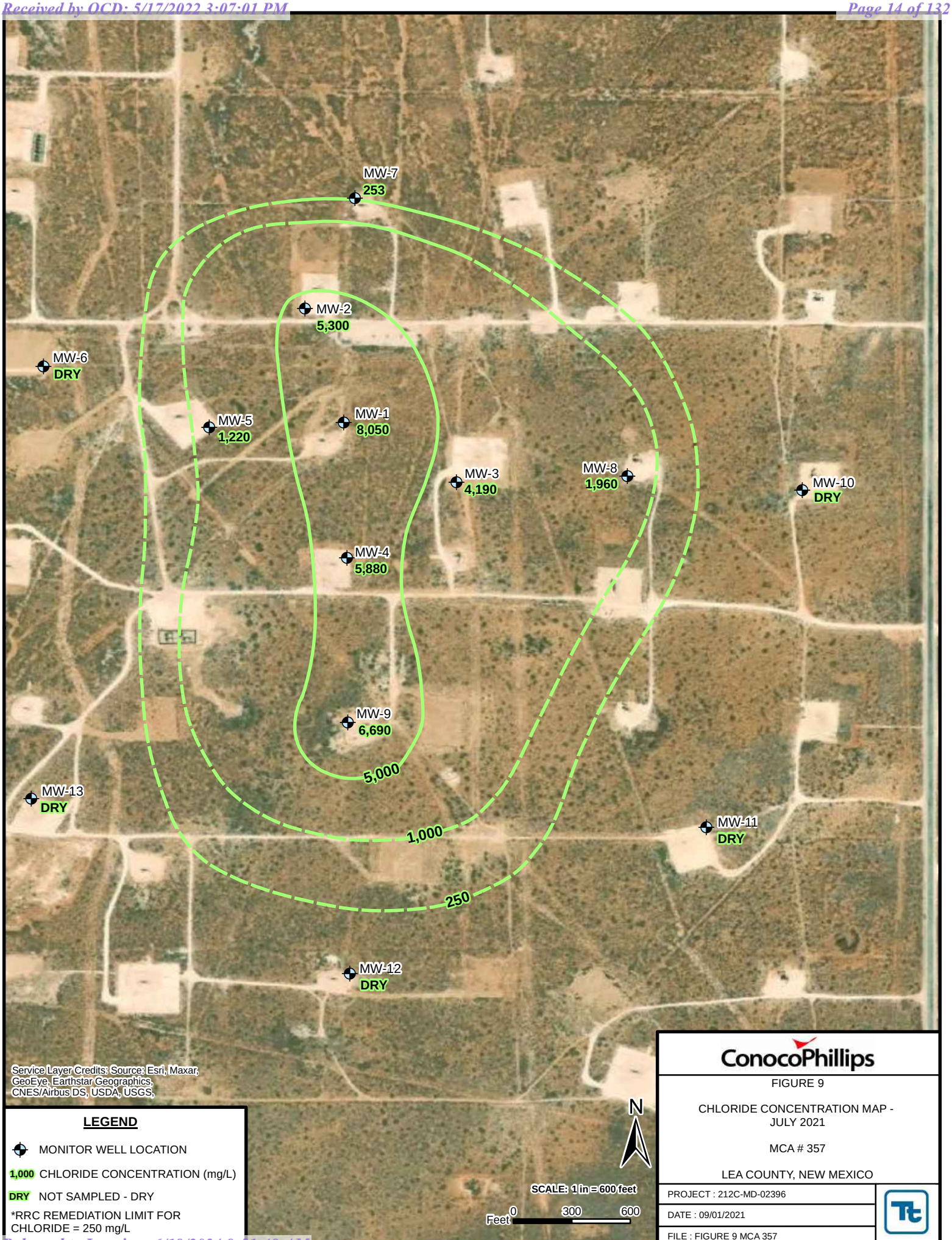

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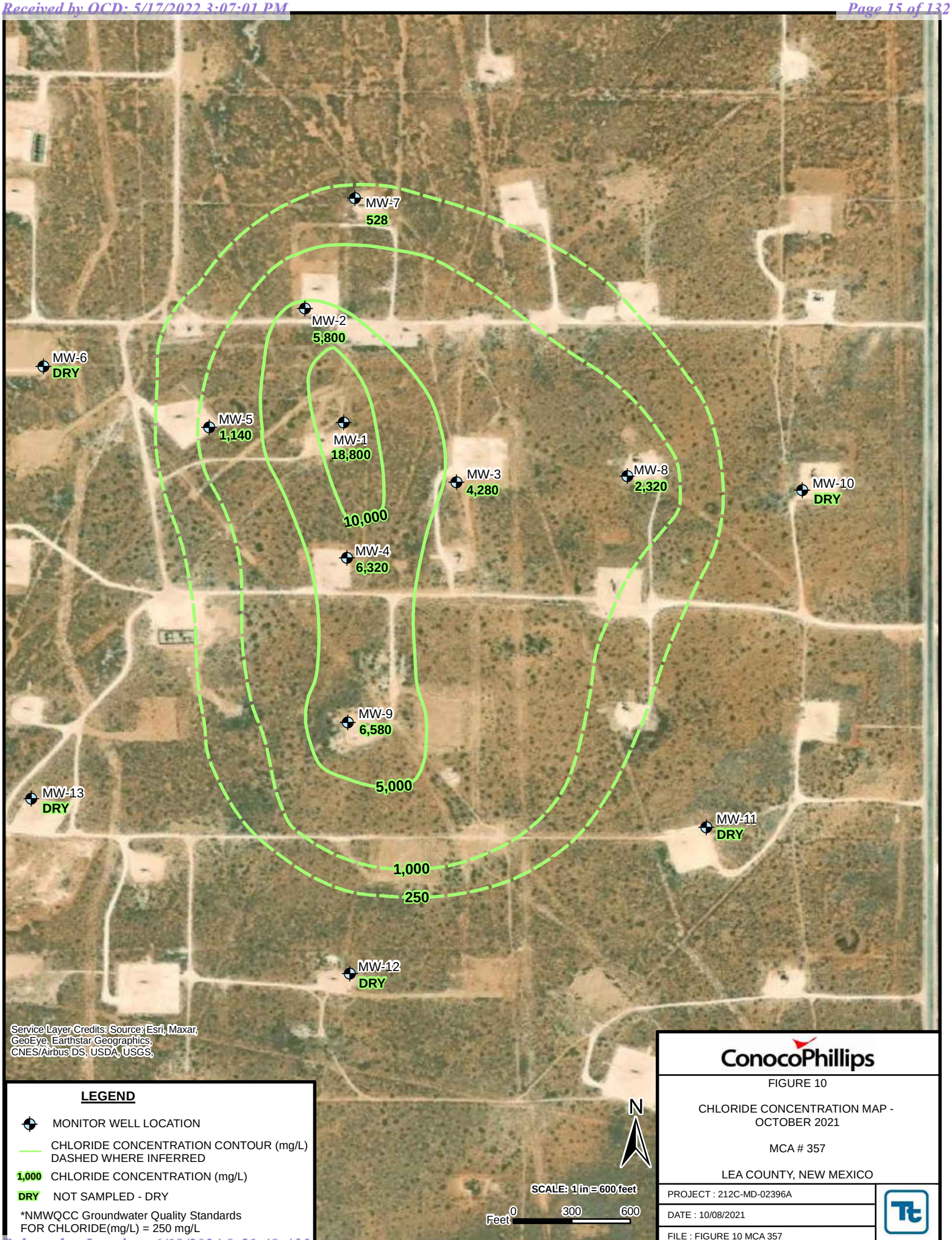
FIGURE 9

CHLORIDE CONCENTRATION MAP - JULY 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 09/01/2021	
FILE : FIGURE 9 MCA 357	



ConocoPhillips

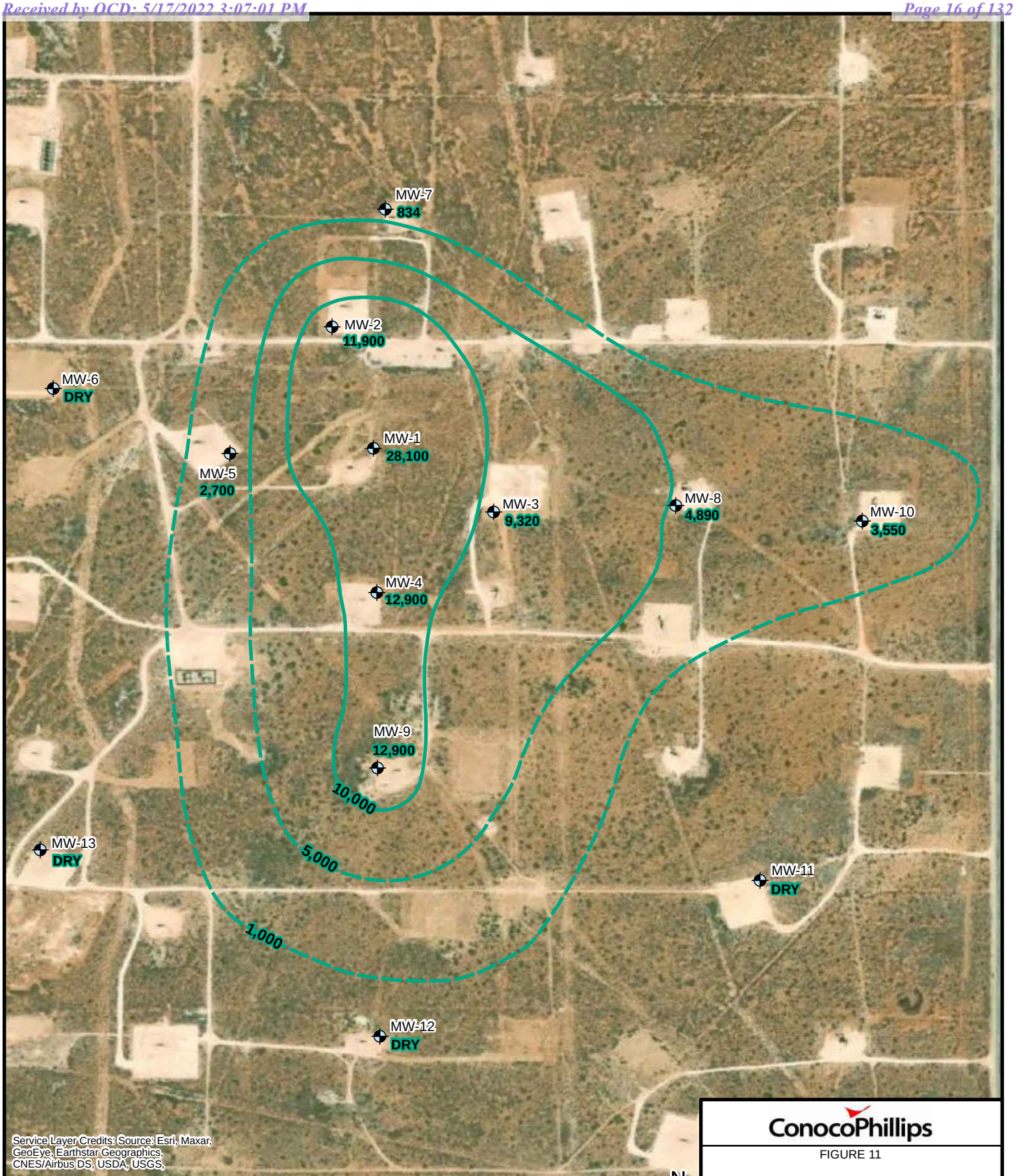
FIGURE 10

CHLORIDE CONCENTRATION MAP - OCTOBER 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396A	
DATE : 10/08/2021	
FILE : FIGURE 10 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

ConocoPhillips

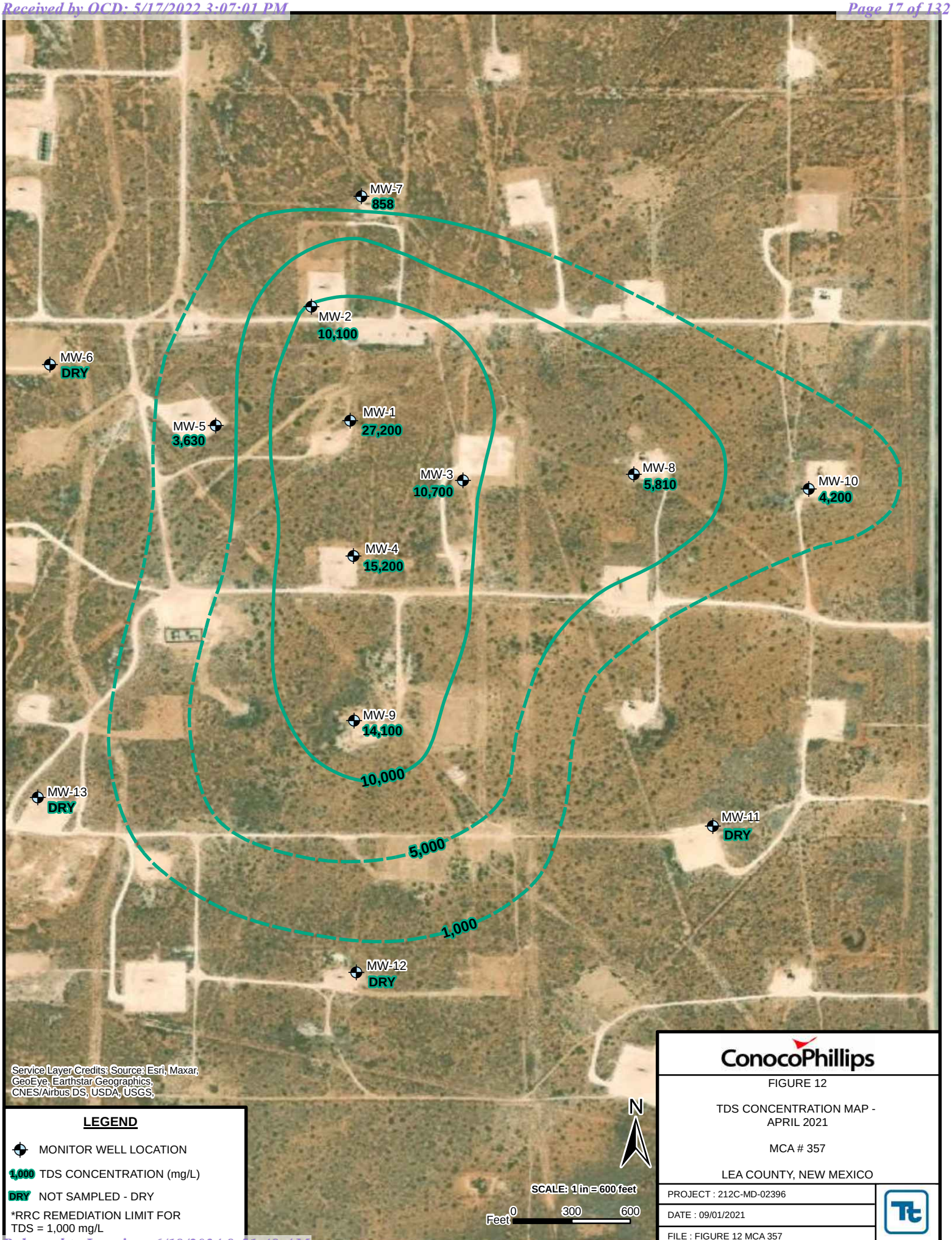
FIGURE 11

TDS CONCENTRATION MAP - JANUARY 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 09/01/2021	
FILE : FIGURE 11 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

ConocoPhillips

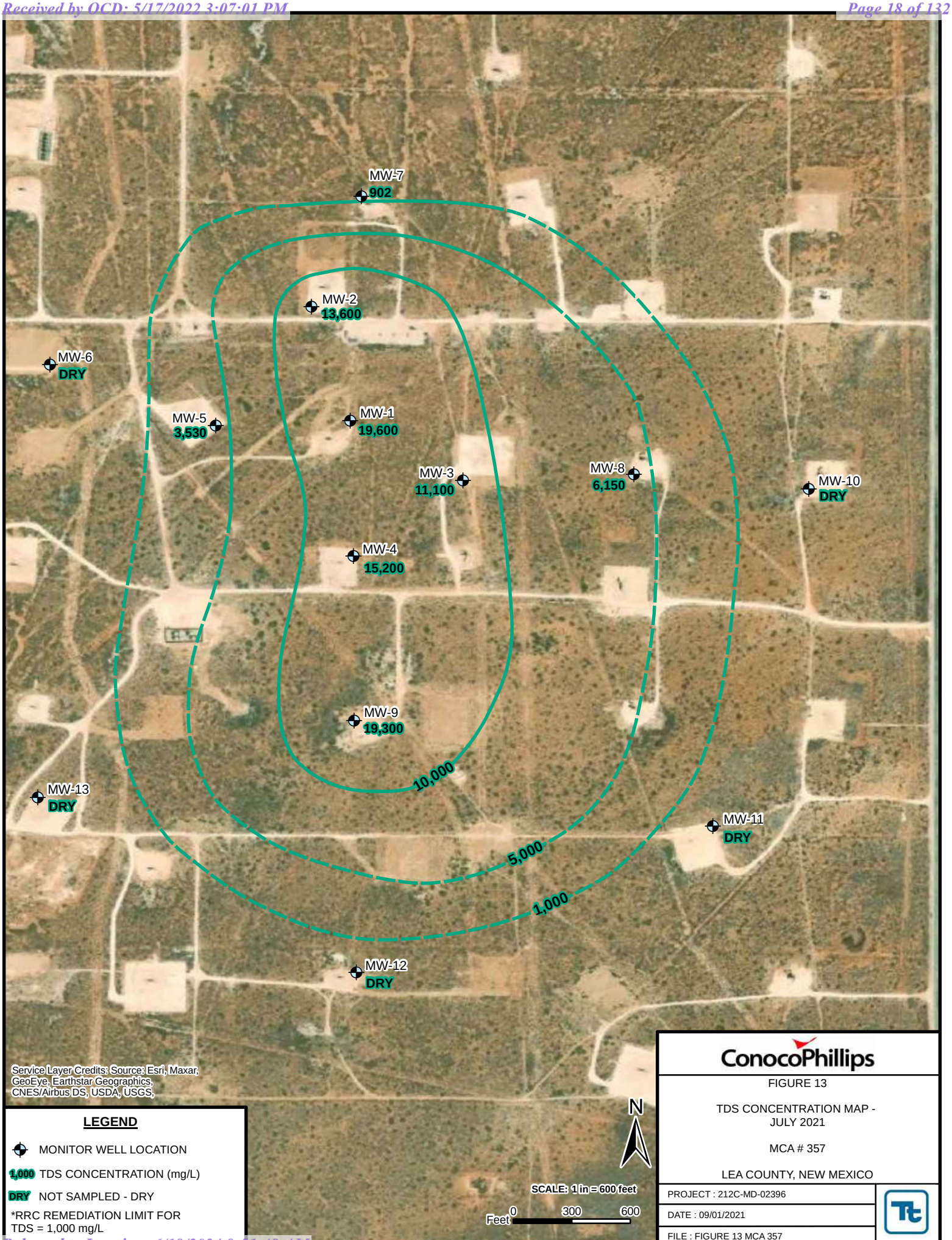
FIGURE 12

TDS CONCENTRATION MAP - APRIL 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 09/01/2021	
FILE : FIGURE 12 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

ConocoPhillips

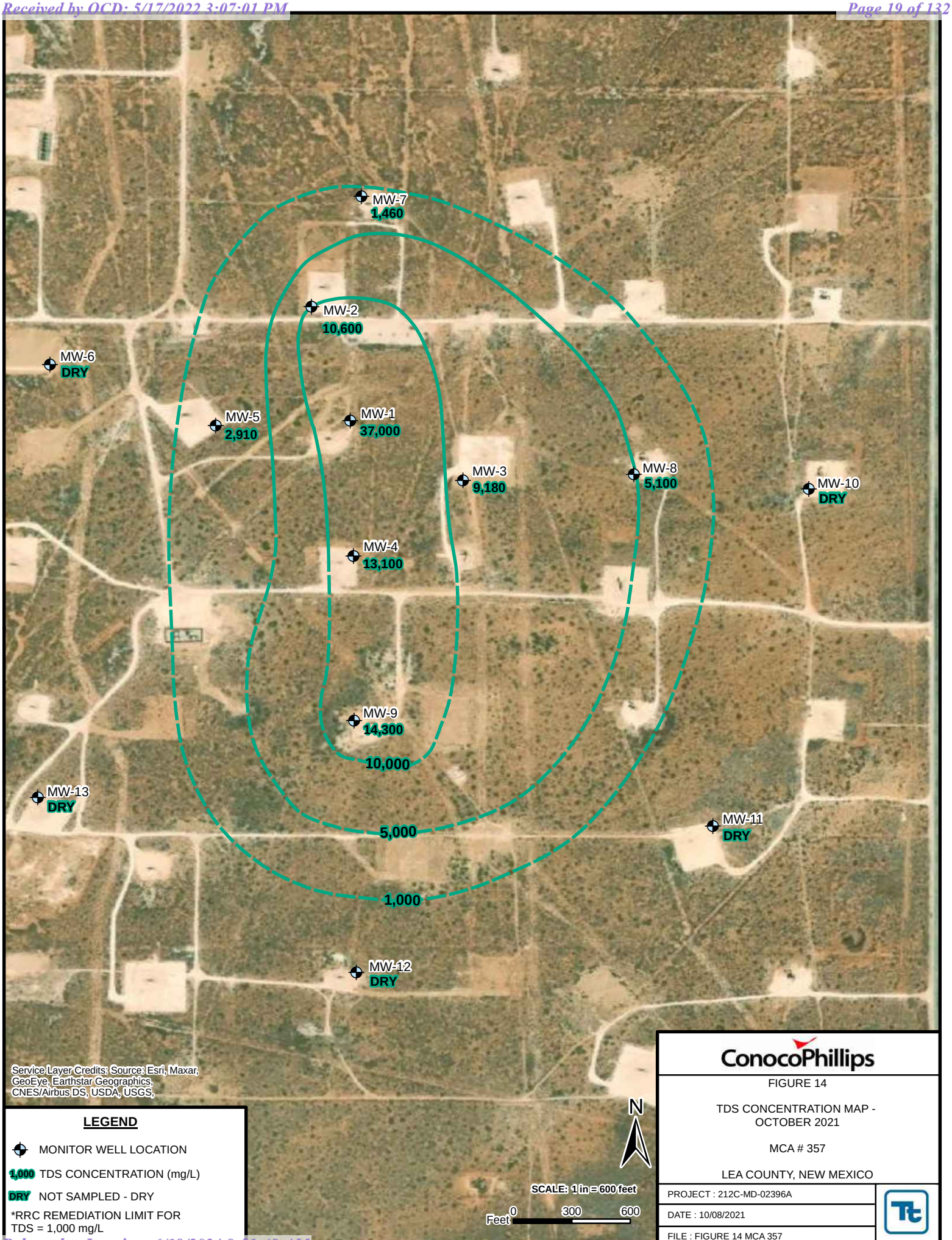
FIGURE 13

TDS CONCENTRATION MAP - JULY 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396	
DATE : 09/01/2021	
FILE : FIGURE 13 MCA 357	



ConocoPhillips

FIGURE 14

TDS CONCENTRATION MAP - OCTOBER 2021

MCA # 357

LEA COUNTY, NEW MEXICO

PROJECT : 212C-MD-02396A	
DATE : 10/08/2021	
FILE : FIGURE 14 MCA 357	

TETRA TECH

TABLES

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-1	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	102.70	-	84.07	3,956.78	**3,872.71**
	7/13/2021	102.70	-	83.81	3,956.78	**3,872.97**
	10/8/2021	102.70	-	84.20	3,956.78	**3,872.58**
MW-2	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	107.80	-	83.20	3,963.58	**3,880.38**
	7/13/2021	107.80	-	83.05	3,963.58	**3,880.53**
	10/7/2021	107.80	-	83.21	3,963.58	**3,880.37**
MW-3	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**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-3 continued	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	117.4	-	88.25	3,951.34	**3,863.09**
	1/14/2020	117.4	-	88.23	3,951.34	**3,863.11**
	4/28/2020	117.4	-	88.45	3,951.34	**3,862.89**
	7/7/2020	117.3	-	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	117.30	-	88.10	3,951.34	**3,863.24**
	7/13/2021	117.30	-	87.70	3,951.34	**3,863.64**
	10/7/2021	117.30	-	88.05	3,951.34	**3,863.29**
MW-4	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	103.3	-	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	103.3	-	94.74	3,945.39	**3,850.65**
	7/7/2020	103.2	-	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	103.20	-	94.41	3,945.39	**3,850.98**
	7/14/2021	103.20	-	94.22	3,945.39	**3,851.17**
	10/7/2021	103.20	-	94.26	3,945.39	**3,851.13**
MW-5	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**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-5 continued	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	113.00	-	89.71	3,950.37	**3,860.66**
	7/14/2021	113.00	-	89.60	3,950.37	**3,860.77**
	10/8/2021	113.00	-	89.62	3,950.37	**3,860.75**
MW-6	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**
MW-7	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**
MW-8	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**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-8 continued	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**
MW-9	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**
MW-10	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	-	-	Dry	3,963.20	**Dry**
	10/8/2021	132.51	-	Dry	3,963.20	**Dry**
MW-11	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	-	-	Dry	3,948.30	**Dry**
	10/8/2021	132.88	-	Dry	3,948.30	**Dry**
MW-12	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	-	-	Dry	3,930.91	**Dry**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-12 continued	10/8/2021	132.30	-	Dry	3,930.91	**Dry**
MW-13	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	-	-	Dry	3,931.32	**Dry**
	10/8/2021	132.25	-	Dry	3,931.32	**Dry**

Notes:

ft	feet
TOC	top of casing
AMSL	above mean sea level
-	no measurement

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**NE**	**250**	**600**	**1,000**
MW-1	10/4/2017	40.6	18,600	282	14,400
Dup	10/4/2017	40.4	18,500	260	8,950
	1/30/2018	85.9	12,900	256	32,800
Dup	1/30/2018	94.7	13,800	333	34,600
	4/10/2018	30.5	15,000	240	32,200
Dup	4/10/2018	30.2	13,600	234	29,800
	8/17/2018	27.1	22,100	211	27,400
Dup	8/17/2018	26.9	20,400	215	26,900
	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
Dup	4/25/2019	-	11,300	-	33,500
	7/9/2019	79.0	30,200	459	78,900
Dup	7/9/2019	77.3	27,800	458	80,500
	10/9/2019	21.9	11,400	179	27,000
Dup	10/9/2019	20.4	11,400	167	25,300
	1/15/2020	37.3	16,400	283	29,200
Dup	1/15/2020	26.1	11,700	210	20,800
	5/1/2020	79.6	37,200	490	98,200
Dup	5/1/2020	109	50,600	661	93,800
	7/9/2020	26.0	13,200	232	30,600
Dup	7/9/2020	22.7	11,800	195	26,000
	10/1/2020	16.1	8,700	161	17,500
Dup	10/1/2020	17.0	9,740	181	19,100
	1/14/2021	23.8	12,300	221	28,100
Dup	1/14/2021	115.0	43,500	654	72,500
	4/8/2021	20.8	11,000	205	27,200
Dup	4/8/2021	25.1	12,700	245	34,900
	7/13/2021	14.5	8,050	138	19,600
Dup 1	7/13/2021	14.1	8,030	133	21,200
	7/13/2021	18.9	10,800	191	28,000
Dup 2	7/13/2021	29.5	17,000	273	61,700
	10/8/2021	40.1	18,800	305	37,000
Dup	10/8/2021	28.5	15,200	256	30,700
Dup2	10/8/2021	58.5	27,500	397	51,800
MW-2	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

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		NE	250	600	1,000
MW-2 continued	8/17/2018	5.12	5,330	212	11,300
	10/18/2018	5.13	5,160	213	10,500
Dup	10/18/2018	5.21	5,220	214	11,000
	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	5.4	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
MW-3	10/4/2017	11.2	5,200	171	8,320
	1/30/2018	19.6	4,210	171	8,800
	4/10/2018	9.20	5,110	186	12,200
	8/17/2018	9.40	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
Dup	1/23/2019	10.3	4,680	175	11,000
	4/24/2019	-	4,440	-	13,800
	7/9/2019	8.4	4,740	183	12,800
	10/8/2019	9.71 J	4,620	160	11,400
	1/14/2020	11.90	4,340	172	9,200
	4/30/2020	7.18	4,380	177	10,600
	7/9/2020	10.30	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
MW-4	10/4/2017	7.8	5,630	165	7,080
	1/30/2018	<0.50	4,970	16.1	7,880
	4/10/2018	2.52	5,490	187	12,100
	8/17/2018	5.30	6,140	173	11,700

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		NE	250	600	1,000
MW-4 continued	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
MW-5	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	2.2	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	2.2	1,220	101	3,530
	10/8/2021	2.28	1,140	122	2,910
MW-6	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			

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		NE	250	600	1,000
MW-6 continued	1/13/2021	Not Sampled - Dry			
	4/6/2021	Not Sampled - Dry			
	7/14/2021	Not Sampled - Dry			
	10/7/2021	Not Sampled - Dry			
MW-7	4/24/2019	-	2,060	-	6,020
	7/9/2019	2.60 J	1,740	211	4,630
	10/8/2019	1.08	200	97.1	763
	1/14/2020	1.62	246	96.7	853
	4/30/2020	1.18	239	98.1	846
	7/8/2020	1.47	289	94.7	880
	9/30/2020	1.08	240	111	866
	1/13/2021	1.23	270	96.7	834
	4/7/2021	1.33	247	92.7	858
	7/15/2021	1.38	253	89.5	902
	10/8/2021	1.60	528	100	1,460
MW-8	4/24/2019	-	2,050	-	6,530
	7/9/2019	2.74	2,270	104	6,620
	10/8/2019	2.50	2,320	88.90	5,740
	1/14/2020	2.95	2,180	99.80	4,870
	4/30/2020	3.95 J	2,390	95.10	5,580
	7/8/2020	6.43 J	2,330	98.60	5,750
	9/30/2020	7.03 J	5,730	156	5,880
	1/13/2021	4.05 J	2,160	93.2	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	93.1	5,100
MW-9	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	10.10	6,690	463	19,300

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**NE**	**250**	**600**	**1,000**
MW-9 continued	10/8/2021	11.40	6,580	495	14,300
MW-10	4/28/2020	Not Sampled - Dry			
	7/8/2020	2.16	1,770	66.00	4,630
	9/30/2020	2.01	1,520	56.5	3,970
	1/12/2021	2.26	1,610	60.8	3,550
	4/6/2021	6.18 J	1,930	56.4	4,200
	7/15/2021	Not Sampled - Dry			
	10/8/2021	Not Sampled - Dry			
MW-11	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			
MW-12	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			
MW-13	9/30/2020	Not Sampled - Dry			
	1/12/2021	Not Sampled - Dry			
	7/15/2021	Not Sampled - Dry			

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**NE**	**250**	**600**	**1,000**
MW-13 continued	10/8/2021	Not Sampled - Dry			

Notes:

mg/L	milligrams per liter
TDS	total dissolved solides
NMWQCC	New Mexico Water Quality Control Comission
NE	not established
-	not analyzed
	result exceeds NMWQCC groundwater quality standards
DUP	duplicate sample
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
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

TETRA TECH

APPENDIX A
LABORATORY ANALYTICAL DATA

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 26, 2021

ConocoPhillips - Tetra Tech

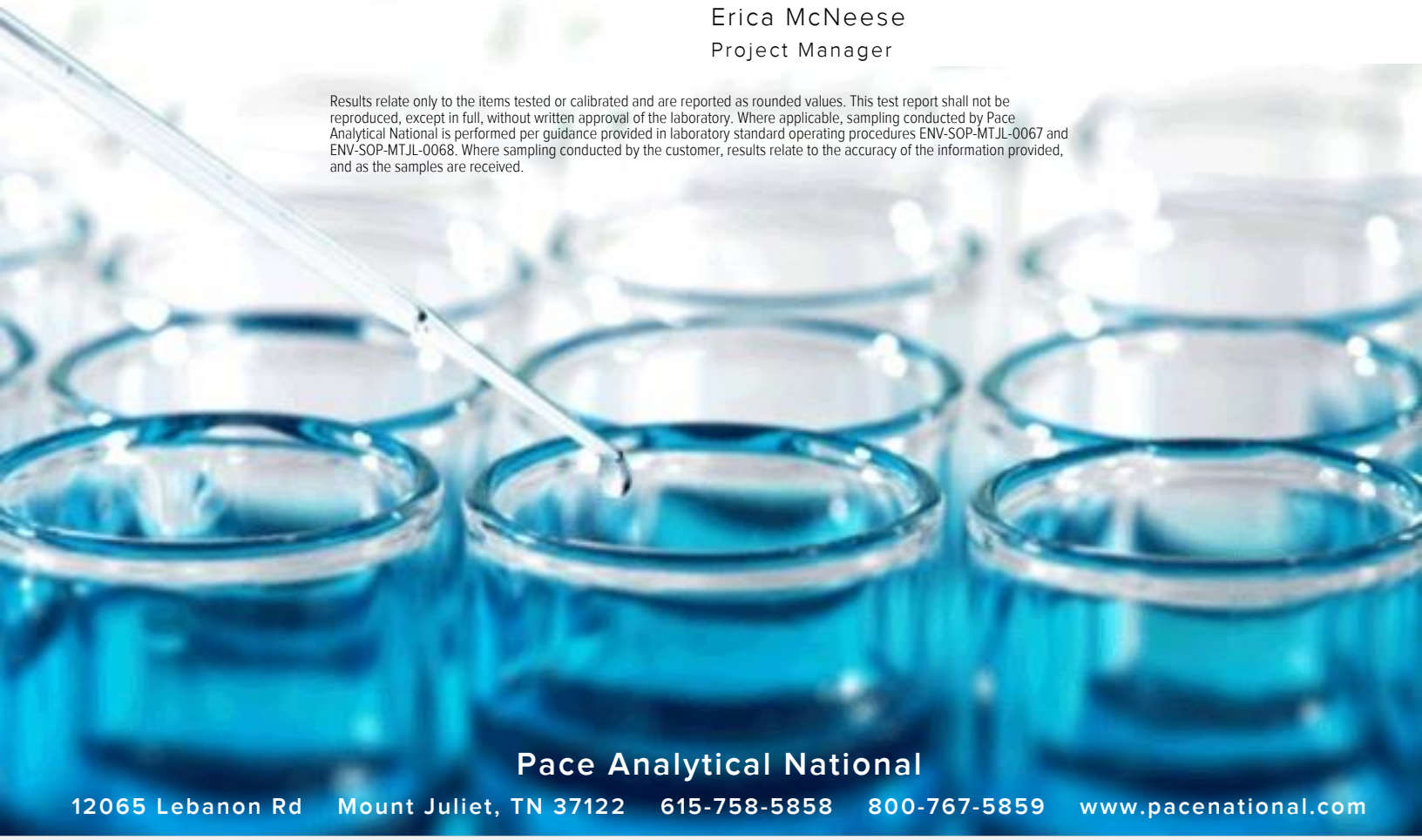
Sample Delivery Group:	L1307286
Samples Received:	01/16/2021
Project Number:	212C-MD-01645
Description:	Conoco MCA 357

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

Entire Report Reviewed By: Erica McNeese

Erica McNeese
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

TABLE OF CONTENTS

MW-10 L1307286-01 GW

Collected by: Preston Poitevint | Collected date/time: 01/12/21 12:50 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1607751	1	01/19/21 09:38	01/19/21 10:41	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	1	01/18/21 18:28	01/18/21 18:28	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 00:32	01/18/21 00:32	ST	Mt. Juliet, TN

MW-9 L1307286-02 GW

Collected by: Preston Poitevint | Collected date/time: 01/12/21 14:00 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1607751	1	01/19/21 09:38	01/19/21 10:41	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 00:48	01/18/21 00:48	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 01:04	01/18/21 01:04	ST	Mt. Juliet, TN

MW-8 L1307286-03 GW

Collected by: Preston Poitevint | Collected date/time: 01/13/21 11:25 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 01:35	01/18/21 01:35	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	5	01/18/21 01:20	01/18/21 01:20	ST	Mt. Juliet, TN

MW-7 L1307286-04 GW

Collected by: Preston Poitevint | Collected date/time: 01/13/21 12:35 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	1	01/18/21 01:51	01/18/21 01:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	5	01/18/21 03:27	01/18/21 03:27	ST	Mt. Juliet, TN

MW-3 L1307286-05 GW

Collected by: Preston Poitevint | Collected date/time: 01/13/21 13:25 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 03:59	01/18/21 03:59	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 04:15	01/18/21 04:15	ST	Mt. Juliet, TN

MW-2 L1307286-06 GW

Collected by: Preston Poitevint | Collected date/time: 01/13/21 14:20 | Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 04:31	01/18/21 04:31	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 04:46	01/18/21 04:46	ST	Mt. Juliet, TN

MW-4 L1307286-07 GW

Collected by: Preston Poitevint
Collected date/time: 01/14/21 11:50
Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 05:02	01/18/21 05:02	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	100	01/18/21 05:18	01/18/21 05:18	ST	Mt. Juliet, TN

MW-5 L1307286-08 GW

Collected by: Preston Poitevint
Collected date/time: 01/14/21 13:05
Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	1	01/18/21 06:06	01/18/21 06:06	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	5	01/18/21 18:43	01/18/21 18:43	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	50	01/18/21 06:22	01/18/21 06:22	ST	Mt. Juliet, TN

MW-1 L1307286-09 GW

Collected by: Preston Poitevint
Collected date/time: 01/14/21 14:10
Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1608285	1	01/20/21 01:04	01/20/21 05:48	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 06:38	01/18/21 06:38	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	500	01/18/21 06:54	01/18/21 06:54	ST	Mt. Juliet, TN

DUP L1307286-10 GW

Collected by: Preston Poitevint
Collected date/time: 01/12/21 00:00
Received date/time: 01/16/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1607751	1	01/19/21 09:38	01/19/21 10:41	MML	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	10	01/18/21 07:10	01/18/21 07:10	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1606955	1000	01/18/21 07:26	01/18/21 07:26	ST	Mt. Juliet, TN

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.

Erica McNeese
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	3550		28.2	100	1	01/19/2021 10:41	WG1607751

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	2.26		0.353	1.00	1	01/18/2021 18:28	WG1606955
Chloride	1610		37.9	100	100	01/18/2021 00:32	WG1606955
Sulfate	60.8		0.594	5.00	1	01/18/2021 18:28	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	12900		56.4	200	1	01/19/2021 10:41	WG1607751

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	01/18/2021 00:48	WG1606955
Chloride	6750		37.9	100	100	01/18/2021 01:04	WG1606955
Sulfate	487		5.94	50.0	10	01/18/2021 00:48	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4890		28.2	100	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	4.05	J	1.76	5.00	5	01/18/2021 01:20	WG1606955
Chloride	2160		37.9	100	100	01/18/2021 01:35	WG1606955
Sulfate	93.2		2.97	25.0	5	01/18/2021 01:20	WG1606955

MW-7
Collected date/time: 01/13/21 12:35

SAMPLE RESULTS - 04

L1307286

ONE LAB. NATIONWIDE.

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	834		5.64	20.0	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.23		0.353	1.00	1	01/18/2021 01:51	WG1606955
Chloride	270		1.90	5.00	5	01/18/2021 03:27	WG1606955
Sulfate	96.7		2.97	25.0	5	01/18/2021 03:27	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	9320		56.4	200	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	9.20	J	3.53	10.0	10	01/18/2021 03:59	WG1606955
Chloride	4550		37.9	100	100	01/18/2021 04:15	WG1606955
Sulfate	182		5.94	50.0	10	01/18/2021 03:59	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	11900		56.4	200	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.42	J	3.53	10.0	10	01/18/2021 04:31	WG1606955
Chloride	5870		37.9	100	100	01/18/2021 04:46	WG1606955
Sulfate	263		5.94	50.0	10	01/18/2021 04:31	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	12900		56.4	200	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.42	J	3.53	10.0	10	01/18/2021 05:02	WG1606955
Chloride	6630		37.9	100	100	01/18/2021 05:18	WG1606955
Sulfate	195		5.94	50.0	10	01/18/2021 05:02	WG1606955

MW-3
Collected date/time: 01/14/21 13:05

SAMPLE RESULTS - 08

L1307286

ONE LAB. NATIONWIDE.

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2700		11.3	40.0	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.05		0.353	1.00	1	01/18/2021 06:06	WG1606955
Chloride	1090		19.0	50.0	50	01/18/2021 06:22	WG1606955
Sulfate	133		2.97	25.0	5	01/18/2021 18:43	WG1606955

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	28100		282	1000	1	01/20/2021 05:48	WG1608285

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	23.8		3.53	10.0	10	01/18/2021 06:38	WG1606955
Chloride	12300		190	500	500	01/18/2021 06:54	WG1606955
Sulfate	221		5.94	50.0	10	01/18/2021 06:38	WG1606955

DUP
Collected date/time: 01/12/21 00:00

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	72500		282	1000	1	01/19/2021 10:41	WG1607751

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	115		3.53	10.0	10	01/18/2021 07:10	WG1606955
Chloride	43500		379	1000	1000	01/18/2021 07:26	WG1606955
Sulfate	654		5.94	50.0	10	01/18/2021 07:10	WG1606955

Method Blank (MB)

(MB) R3614490-1 01/19/21 10:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1305593-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1305593-02 01/19/21 10:41 • (DUP) R3614490-3 01/19/21 10:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	448	453	1	1.11		5

L1305989-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1305989-03 01/19/21 10:41 • (DUP) R3614490-4 01/19/21 10:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	340	331	1	2.68		5

Laboratory Control Sample (LCS)

(LCS) R3614490-2 01/19/21 10:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8820	100	77.4-123	

Method Blank (MB)

(MB) R3615255-1 01/20/21 05:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1306595-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1306595-01 01/20/21 05:48 • (DUP) R3615255-3 01/20/21 05:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	305	327	1	6.96	J3	5

L1307286-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1307286-03 01/20/21 05:48 • (DUP) R3615255-4 01/20/21 05:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	4890	5070	1	3.61		5

Laboratory Control Sample (LCS)

(LCS) R3615255-2 01/20/21 05:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8760	99.5	77.4-123	

Method Blank (MB)

(MB) R3613734-1 01/17/21 18:44

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

L1307286-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1307286-04 01/18/21 01:51 • (DUP) R3613734-3 01/18/21 02:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.23	1.21	1	1.51		15
Chloride	270	271	1	0.167	E	15
Sulfate	101	101	1	0.0315	E	15

L1307286-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1307286-04 01/18/21 03:27 • (DUP) R3613734-6 01/18/21 03:43

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	270	270	5	0.0832		15
Sulfate	96.7	96.9	5	0.206		15

Laboratory Control Sample (LCS)

(LCS) R3613734-2 01/17/21 18:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.8	99.4	80.0-120	
Chloride	40.0	41.1	103	80.0-120	
Sulfate	40.0	41.5	104	80.0-120	

L1307286-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1307286-04 01/18/21 01:51 • (MS) R3613734-4 01/18/21 02:55 • (MSD) R3613734-5 01/18/21 03:11

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	1.23	46.4	46.6	90.3	90.7	1	80.0-120			0.364	15
Chloride	50.0	270	309	309	77.5	77.0	1	80.0-120	E V	E V	0.0886	15

L1307286-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1307286-04 01/18/21 01:51 • (MS) R3613734-4 01/18/21 02:55 • (MSD) R3613734-5 01/18/21 03:11

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	101	146	146	89.2	89.0	1	80.0-120	E	E	0.0594	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.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* 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 National.

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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	LAO00356
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		

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Alabama	40160
ANSI National Accreditation Board	L2239

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Nevada	NV009412021-1

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

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

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

Report to: Julie Evans

Email To: Julie.evans@tetratech.com

Project Description: Conoco MCA 357

City/State Collected: Maljamar, NM

Phone: 432-687-8137
Fax:

Client Project # 212C-MD-01645

Lab Project # COPTETRA-212CMD02100

L# L1367286

C084

Collected by (print): Preston Pateviat

Site/Facility ID #

P.O. #

Acctnum: COPTETRA

Template:

Collected by (signature):

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

Quote #

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-10		GW		1-12-21	1250	1	X	X		-01
MW-9		GW		1-12-21	1400	1	X	X		02
MW-8		GW		1-13-21	1125	1	X	X		03
MW-7		GW		1-13-21	1235	1	X	X		04
MW-3		GW		1-13-21	1325	1	X	X		05
MW-2		GW		1-13-21	1420	1	X	X		06
MW-4		GW		1-14-21	1150	1	X	X		07
MW-5		GW		1-14-21	1305	1	X	X		08
MW-1		GW		1-14-21	1410	1	X	X		09
DUP		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:		✓	N
Bottles arrive intact:		✓	N
Correct bottles used:		✓	N
Sufficient volume sent:		✓	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	1-15-21	13:40	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	1-15-21	16:40	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 0.3 °C Bottles Received: 10
.5+0=.5

If preservation required by Login: Date/Time

Date: 1/16/21 Time: 9:45

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

April 19, 2021

ConocoPhillips - Tetra Tech

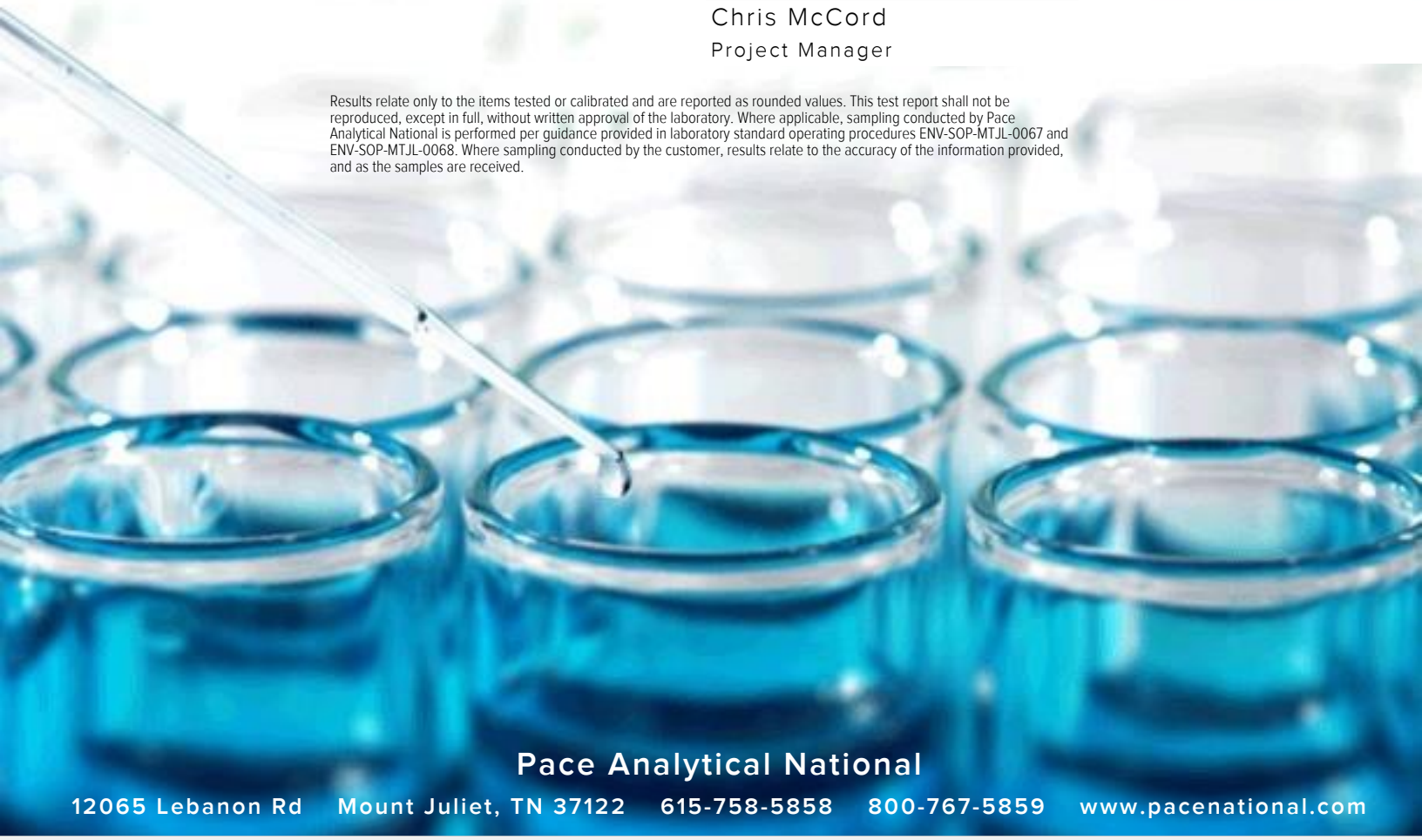
Sample Delivery Group:	L1336905
Samples Received:	04/10/2021
Project Number:	212C-MD-02396
Description:	Conoco MCA #357

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-10 L1336905-01 GW

Collected by: Preston Poitevint | Collected date/time: 04/06/21 12:55 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650136	1	04/12/21 16:10	04/12/21 17:25	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 00:11	04/19/21 00:11	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 00:26	04/19/21 00:26	MCG	Mt. Juliet, TN

MW-9 L1336905-02 GW

Collected by: Preston Poitevint | Collected date/time: 04/06/21 14:05 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650136	1	04/12/21 16:10	04/12/21 17:25	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 00:42	04/19/21 00:42	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 00:58	04/19/21 00:58	MCG	Mt. Juliet, TN

MW-8 L1336905-03 GW

Collected by: Preston Poitevint | Collected date/time: 04/07/21 11:25 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 01:14	04/19/21 01:14	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 01:30	04/19/21 01:30	MCG	Mt. Juliet, TN

MW-7 L1336905-04 GW

Collected by: Preston Poitevint | Collected date/time: 04/07/21 12:30 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	1	04/19/21 08:40	04/19/21 08:40	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 01:46	04/19/21 01:46	MCG	Mt. Juliet, TN

MW-3 L1336905-05 GW

Collected by: Preston Poitevint | Collected date/time: 04/07/21 13:25 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 02:02	04/19/21 02:02	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 02:18	04/19/21 02:18	MCG	Mt. Juliet, TN

MW-2 L1336905-06 GW

Collected by: Preston Poitevint | Collected date/time: 04/07/21 14:30 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650136	1	04/12/21 16:10	04/12/21 17:25	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 03:06	04/19/21 03:06	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 03:22	04/19/21 03:22	MCG	Mt. Juliet, TN

MW-4 L1336905-07 GW

Collected by: Preston Poitevint | Collected date/time: 04/08/21 11:35 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 03:37	04/19/21 03:37	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	100	04/19/21 03:53	04/19/21 03:53	MCG	Mt. Juliet, TN

MW-5 L1336905-08 GW

Collected by: Preston Poitevint | Collected date/time: 04/08/21 12:30 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	1	04/19/21 04:09	04/19/21 04:09	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	20	04/19/21 04:41	04/19/21 04:41	MCG	Mt. Juliet, TN

MW-1 L1336905-09 GW

Collected by: Preston Poitevint | Collected date/time: 04/08/21 13:20 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 04:57	04/19/21 04:57	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	500	04/19/21 05:13	04/19/21 05:13	MCG	Mt. Juliet, TN

DUP L1336905-10 GW

Collected by: Preston Poitevint | Collected date/time: 04/06/21 00:00 | Received date/time: 04/10/21 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1650307	1	04/13/21 02:23	04/13/21 05:17	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	10	04/19/21 05:29	04/19/21 05:29	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1653954	500	04/19/21 06:17	04/19/21 06:17	MCG	Mt. Juliet, TN

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	4200		100	1	04/12/2021 17:25	WG1650136

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	6.18	J	3.53	10.0	10	04/19/2021 00:11	WG1653954
Chloride	1930		37.9	100	100	04/19/2021 00:26	WG1653954
Sulfate	56.4		5.94	50.0	10	04/19/2021 00:11	WG1653954

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	14100		200	1	04/12/2021 17:25	WG1650136

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	9.70	J	3.53	10.0	10	04/19/2021 00:42	WG1653954
Chloride	6540		37.9	100	100	04/19/2021 00:58	WG1653954
Sulfate	477		5.94	50.0	10	04/19/2021 00:42	WG1653954

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5810	J3	40.0	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	6.53	J	3.53	10.0	10	04/19/2021 01:14	WG1653954
Chloride	2120		37.9	100	100	04/19/2021 01:30	WG1653954
Sulfate	88.5		5.94	50.0	10	04/19/2021 01:14	WG1653954

MW - 7
Collected date/time: 04/07/21 12:30
L1336905

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	858		20.0	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.33		0.353	1.00	1	04/19/2021 08:40	WG1653954
Chloride	247		3.79	10.0	10	04/19/2021 01:46	WG1653954
Sulfate	92.7		0.594	5.00	1	04/19/2021 08:40	WG1653954

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	10700		100	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.1		3.53	10.0	10	04/19/2021 02:02	WG1653954
Chloride	4380		37.9	100	100	04/19/2021 02:18	WG1653954
Sulfate	175		5.94	50.0	10	04/19/2021 02:02	WG1653954

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	10100		200	1	04/12/2021 17:25	WG1650136

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.22	J	3.53	10.0	10	04/19/2021 03:06	WG1653954
Chloride	5340		37.9	100	100	04/19/2021 03:22	WG1653954
Sulfate	260		5.94	50.0	10	04/19/2021 03:06	WG1653954

MW-4
Collected date/time: 04/08/21 11:35
L1336905

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	15200		100	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.66	J	3.53	10.0	10	04/19/2021 03:37	WG1653954
Chloride	5930		37.9	100	100	04/19/2021 03:53	WG1653954
Sulfate	186		5.94	50.0	10	04/19/2021 03:37	WG1653954

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3630		40.0	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.99		0.353	1.00	1	04/19/2021 04:09	WG1653954
Chloride	1070		7.58	20.0	20	04/19/2021 04:41	WG1653954
Sulfate	109		11.9	100	20	04/19/2021 04:41	WG1653954

MW-1
Collected date/time: 04/08/21 13:20
L1336905

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	27200		200	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	20.8		3.53	10.0	10	04/19/2021 04:57	WG1653954
Chloride	11000		190	500	500	04/19/2021 05:13	WG1653954
Sulfate	205		5.94	50.0	10	04/19/2021 04:57	WG1653954

DUP
Collected date/time: 04/06/21 00:00
L1336905

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	34900		200	1	04/13/2021 05:17	WG1650307

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	25.1		3.53	10.0	10	04/19/2021 05:29	WG1653954
Chloride	12700		190	500	500	04/19/2021 06:17	WG1653954
Sulfate	245		5.94	50.0	10	04/19/2021 05:29	WG1653954

Method Blank (MB)

(MB) R3641306-1 04/12/21 17:25

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

L1336389-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1336389-03 04/12/21 17:25 • (DUP) R3641306-3 04/12/21 17:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	707	704	1	0.379		5

L1336611-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1336611-03 04/12/21 17:25 • (DUP) R3641306-4 04/12/21 17:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1610	1740	1	7.47	J3	5

Laboratory Control Sample (LCS)

(LCS) R3641306-2 04/12/21 17:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8510	96.7	77.4-123	

Method Blank (MB)

(MB) R3641484-1 04/13/21 05:17

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

L1336615-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1336615-02 04/13/21 05:17 • (DUP) R3641484-3 04/13/21 05:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1030	1040	1	0.775		5

L1336905-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1336905-03 04/13/21 05:17 • (DUP) R3641484-4 04/13/21 05:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	5810	6250	1	7.36	J3	5

Laboratory Control Sample (LCS)

(LCS) R3641484-2 04/13/21 05:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8810	100	77.4-123	

Method Blank (MB)

(MB) R3643534-1 04/18/21 20:44

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

L1336961-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1336961-01 04/19/21 06:33 • (DUP) R3643534-7 04/19/21 06:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.684	0.664	1	2.97	J	15
Chloride	38.8	38.8	1	0.0425		15
Sulfate	9.19	9.19	1	0.0294		15

Laboratory Control Sample (LCS)

(LCS) R3643534-2 04/18/21 21:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	40.3	101	80.0-120	
Chloride	40.0	40.4	101	80.0-120	
Sulfate	40.0	40.7	102	80.0-120	

L1336905-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1336905-08 04/19/21 04:09 • (MS) R3643534-6 04/19/21 04:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	1.99	47.1	90.3	1	80.0-120	
Chloride	50.0	1160	1160	0.000	1	80.0-120	E V
Sulfate	50.0	136	176	79.9	1	80.0-120	E J6

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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
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	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.

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

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

L# 1376905

Table # E098

Collected by (print): Preston Peteet

Site/Facility ID #

P.O. #

Acctnum: COPTETRA

Template:

Prelogin:

TSR: 526 - Chris McCord

PB:

Collected by (signature):

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

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-10		GW		4-6-21	1255	2	X	X		-01
MW-9		GW		4-6-21	1405	2	X	X		-02
MW-8		GW		4-7-21	1125	2	X	X		-03
MW-7		GW		4-7-21	1230	2	X	X		-04
MW-3		GW		4-7-21	1325	2	X	X		-05
MW-2		GW		4-7-21	1430	2	X	X		-06
MW-4		GW		4-8-21	1135	2	X	X		-07
MW-5		GW		4-8-21	1230	2	X	X		-08
MW-1		GW		4-8-21	1320	2	X	X		-09
DUP		GW		—	—	2	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)	Trip Blank Received: Yes / No HCL / MeoH TBR
	4-9-21	12:30		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.8 °C Bottles Received: 20
	4.9.21	14:30		2.8+1-2.9
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 4-10-21 Time: 10:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®

ANALYTICAL REPORT

July 26, 2021

ConocoPhillips - Tetra Tech

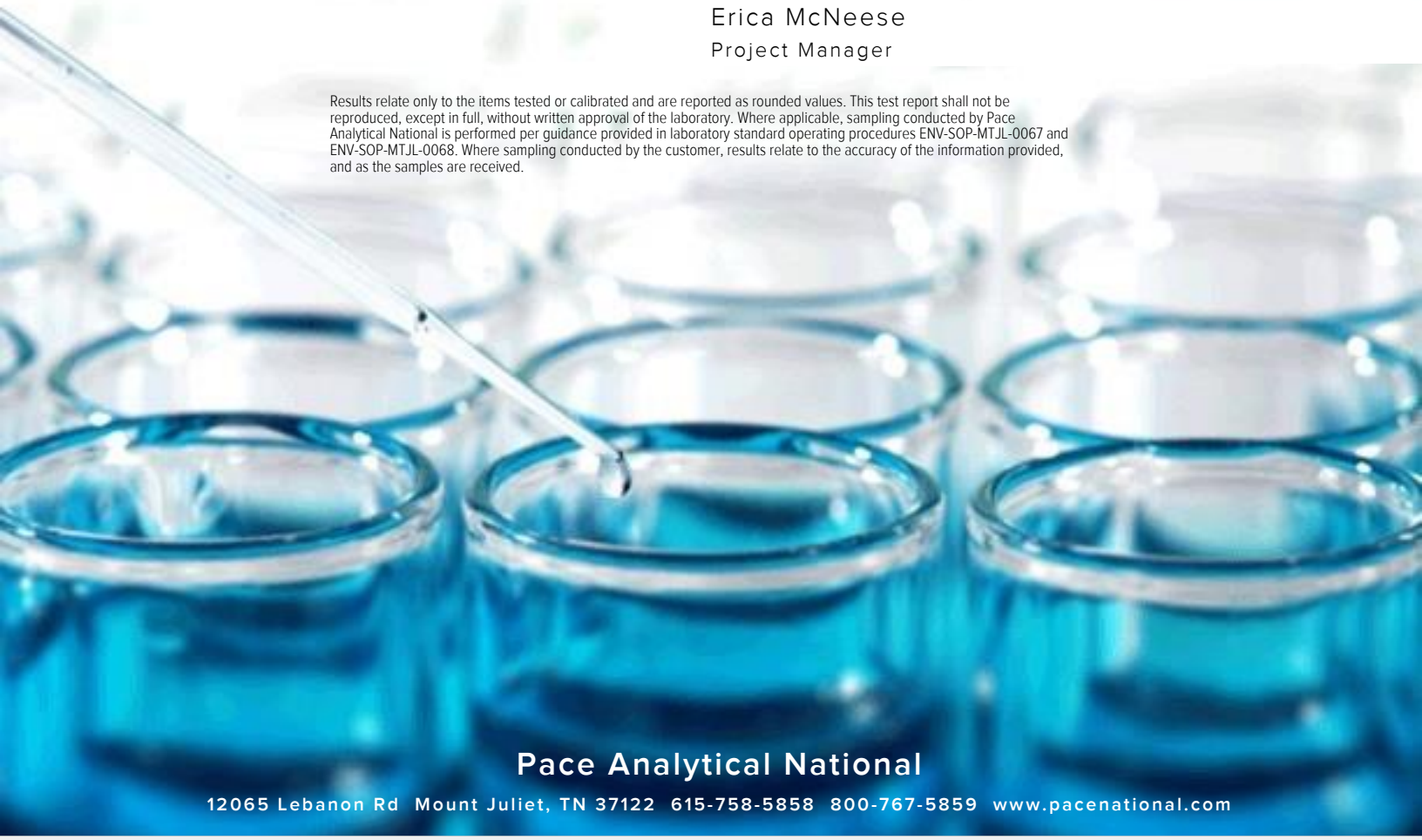
Sample Delivery Group:	L1379767
Samples Received:	07/17/2021
Project Number:	212C-MD-02396TASK110
Description:	MCA #357

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

Entire Report Reviewed By: Erica McNeese

Erica McNeese
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

TABLE OF CONTENTS

MW-1 L1379767-01 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 16:00	07/23/21 16:00	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	500	07/23/21 16:14	07/23/21 16:14	ELN	Mt. Juliet, TN

MW-1-1 L1379767-02 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 16:27	07/23/21 16:27	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	500	07/24/21 01:30	07/24/21 01:30	ELN	Mt. Juliet, TN

MW-2 L1379767-03 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 16:53	07/23/21 16:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 17:06	07/23/21 17:06	ELN	Mt. Juliet, TN

MW-3 L1379767-04 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 17:20	07/23/21 17:20	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 17:33	07/23/21 17:33	ELN	Mt. Juliet, TN

MW-4 L1379767-05 GW

Collected by: Matthew Castrejan | Collected date/time: 07/14/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708127	1	07/20/21 01:20	07/21/21 11:23	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 18:13	07/23/21 18:13	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 18:26	07/23/21 18:26	ELN	Mt. Juliet, TN

MW-5 L1379767-06 GW

Collected by: Matthew Castrejan | Collected date/time: 07/14/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708127	1	07/20/21 01:20	07/21/21 11:23	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	1	07/23/21 21:05	07/23/21 21:05	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	20	07/23/21 21:18	07/23/21 21:18	ELN	Mt. Juliet, TN

MW-7 L1379767-07 GW

Collected by: Matthew Castrejan | Collected date/time: 07/15/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708127	1	07/20/21 01:20	07/21/21 11:23	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	1	07/23/21 18:39	07/23/21 18:39	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 19:06	07/23/21 19:06	ELN	Mt. Juliet, TN

MW-8 L1379767-08 GW

Collected by: Matthew Castrejan | Collected date/time: 07/15/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708127	1	07/20/21 01:20	07/21/21 11:23	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 21:31	07/23/21 21:31	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 21:45	07/23/21 21:45	ELN	Mt. Juliet, TN

MW-9 L1379767-09 GW

Collected by: Matthew Castrejan | Collected date/time: 07/15/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708127	1	07/20/21 01:20	07/21/21 11:23	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 21:58	07/23/21 21:58	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 22:11	07/23/21 22:11	ELN	Mt. Juliet, TN

DUP-1 L1379767-10 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 22:24	07/23/21 22:24	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	100	07/23/21 22:38	07/23/21 22:38	ELN	Mt. Juliet, TN

DUP-2 L1379767-11 GW

Collected by: Matthew Castrejan | Collected date/time: 07/13/21 00:00 | Received date/time: 07/17/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1708056	1	07/20/21 14:50	07/20/21 16:51	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	10	07/23/21 23:30	07/23/21 23:30	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1708112	500	07/23/21 22:51	07/23/21 22:51	ELN	Mt. Juliet, TN

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.

Erica McNeese
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	19600		400	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	14.5		3.53	10.0	10	07/23/2021 16:00	WG1708112
Chloride	8050		190	500	500	07/23/2021 16:14	WG1708112
Sulfate	138		5.94	50.0	10	07/23/2021 16:00	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	28000		400	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	18.9		3.53	10.0	10	07/23/2021 16:27	WG1708112
Chloride	10800		190	500	500	07/24/2021 01:30	WG1708112
Sulfate	191		5.94	50.0	10	07/23/2021 16:27	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13600		200	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.52	J	3.53	10.0	10	07/23/2021 16:53	WG1708112
Chloride	5300		37.9	100	100	07/23/2021 17:06	WG1708112
Sulfate	242		5.94	50.0	10	07/23/2021 16:53	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	11100		200	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	10.2		3.53	10.0	10	07/23/2021 17:20	WG1708112
Chloride	4190		37.9	100	100	07/23/2021 17:33	WG1708112
Sulfate	162		5.94	50.0	10	07/23/2021 17:20	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	15200		200	1	07/21/2021 11:23	WG1708127

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.93	J	3.53	10.0	10	07/23/2021 18:13	WG1708112
Chloride	5880		37.9	100	100	07/23/2021 18:26	WG1708112
Sulfate	163		5.94	50.0	10	07/23/2021 18:13	WG1708112

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	07/21/2021 11:23	WG1708127

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.19		0.353	1.00	1	07/23/2021 21:05	WG1708112
Chloride	1220		7.58	20.0	20	07/23/2021 21:18	WG1708112
Sulfate	101		11.9	100	20	07/23/2021 21:18	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	902		20.0	1	07/21/2021 11:23	WG1708127

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.38		0.353	1.00	1	07/23/2021 18:39	WG1708112
Chloride	253		3.79	10.0	10	07/23/2021 19:06	WG1708112
Sulfate	89.5		0.594	5.00	1	07/23/2021 18:39	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	6150		100	1	07/21/2021 11:23	WG1708127

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	6.73	J	3.53	10.0	10	07/23/2021 21:31	WG1708112
Chloride	1960		37.9	100	100	07/23/2021 21:45	WG1708112
Sulfate	54.0		5.94	50.0	10	07/23/2021 21:31	WG1708112

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	19300		200	1	07/21/2021 11:23	WG1708127

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.1		3.53	10.0	10	07/23/2021 21:58	WG1708112
Chloride	6690		37.9	100	100	07/23/2021 22:11	WG1708112
Sulfate	463		5.94	50.0	10	07/23/2021 21:58	WG1708112

DUP-1
Collected date/time: 07/13/21 00:00
L1379767

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	21200		400	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	14.1		3.53	10.0	10	07/23/2021 22:24	WG1708112
Chloride	8030		37.9	100	100	07/23/2021 22:38	WG1708112
Sulfate	133		5.94	50.0	10	07/23/2021 22:24	WG1708112

DUP-2
Collected date/time: 07/13/21 00:00
L1379767

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	61700		1000	1	07/20/2021 16:51	WG1708056

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	29.5		3.53	10.0	10	07/23/2021 23:30	WG1708112
Chloride	17000		190	500	500	07/23/2021 22:51	WG1708112
Sulfate	273		5.94	50.0	10	07/23/2021 23:30	WG1708112

Method Blank (MB)

(MB) R3682916-1 07/20/21 16:51

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

L1376546-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1376546-02 07/20/21 16:51 • (DUP) R3682916-3 07/20/21 16:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	8620	8820	1	2.29		5

L1379236-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1379236-01 07/20/21 16:51 • (DUP) R3682916-4 07/20/21 16:51

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	940	963	1	2.37		5

Laboratory Control Sample (LCS)

(LCS) R3682916-2 07/20/21 16:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	9600	109	77.4-123	

Method Blank (MB)

(MB) R3683296-1 07/21/21 11:23

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

L1379602-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1379602-04 07/21/21 11:23 • (DUP) R3683296-3 07/21/21 11:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	268	273	1	1.85		5

L1379767-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1379767-07 07/21/21 11:23 • (DUP) R3683296-4 07/21/21 11:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	902	934	1	3.49		5

Laboratory Control Sample (LCS)

(LCS) R3683296-2 07/21/21 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	9630	109	77.4-123	

Method Blank (MB)

(MB) R3683976-1 07/23/21 13:13

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

L1379767-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1379767-07 07/23/21 18:39 • (DUP) R3683976-3 07/23/21 18:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.38	1.38	1	0.0436		15
Sulfate	89.5	89.5	1	0.0210		15

L1379767-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1379767-07 07/23/21 19:06 • (DUP) R3683976-4 07/23/21 19:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	253	255	10	0.696		15

L1379776-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1379776-06 07/24/21 00:23 • (DUP) R3683976-7 07/24/21 00:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	48.2	48.0	100	0.414	J	15
Chloride	991	997	100	0.615		15
Sulfate	4820	4820	100	0.0293		15

Laboratory Control Sample (LCS)

(LCS) R3683976-2 07/23/21 13:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.3	98.3	80.0-120	
Chloride	40.0	39.9	99.8	80.0-120	
Sulfate	40.0	39.3	98.2	80.0-120	

L1379989-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1379989-01 07/23/21 19:32 • (MS) R3683976-5 07/23/21 19:46 • (MSD) R3683976-6 07/23/21 19:59

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	12.3	64.8	64.3	105	104	1	80.0-120			0.669	15
Sulfate	50.0	18.7	70.8	70.5	104	104	1	80.0-120			0.481	15

L1379995-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1379995-01 07/24/21 01:03 • (MS) R3683976-8 07/24/21 01:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	2.98	56.0	106	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.

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.

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: 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):

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres
MW-1	G	W		7-13-21		2	X	X
MW-1-1	G	W		7-13-21		2	X	X
MW-2	G	W		7-13-21		2	X	X
MW-3	G	W		7-13-21		2	X	X
MW-4	G	W		7-14-21		2	X	X
MW-5	G	W		7-14-21		2	X	X
MW-7	G	W		7-15-21		2	X	X
MW-8	G	W		7-15-21		2	X	X
MW-9	G	W		7-15-21		2	X	X
DUP1	G	W		—	—	2	X	X

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# 1379767
D147

Table

Acctnum: COPTETRA

Template:

Prelogin:

TSR: 526 - Chris McCord

PB:

Shipped Via:

Remarks | Sample # (lab only)

1
2
3
4
5
6
7
8
9
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

	Date:	Time:			
Relinquished by : (Signature)	7-16-21	1430	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	7-16-21	1630	Received by: (Signature)	Temp: 3.0 °C 4.4-1=4.3	Bottles Received: 24
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/17/21	Time: 9:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

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®

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

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

L# 1779767

Collected by (print): Matthew Castrejon

Site/Facility ID #

P.O. #

Table #

Acctnum: COPTETRA

Collected by (signature):

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

Template:

Prelogin:

TSR: 526 - Chris McCord

PB:

Immediately Packed on Ice N ___ Y ___

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)
Dup 2	G	W		—	—	2	X	X		-11

* 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)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	7-16-21	1430			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp 0360 °C Bottles Received:	If preservation required by Login: Date/Time
	7-16-21	1630		4.4-1=4.3 24	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/17/21 Time: 9:30	Hold: Condition: NCF / OK

Pace Analytical®

ANALYTICAL REPORT

October 26, 2021

ConocoPhillips - Tetra Tech

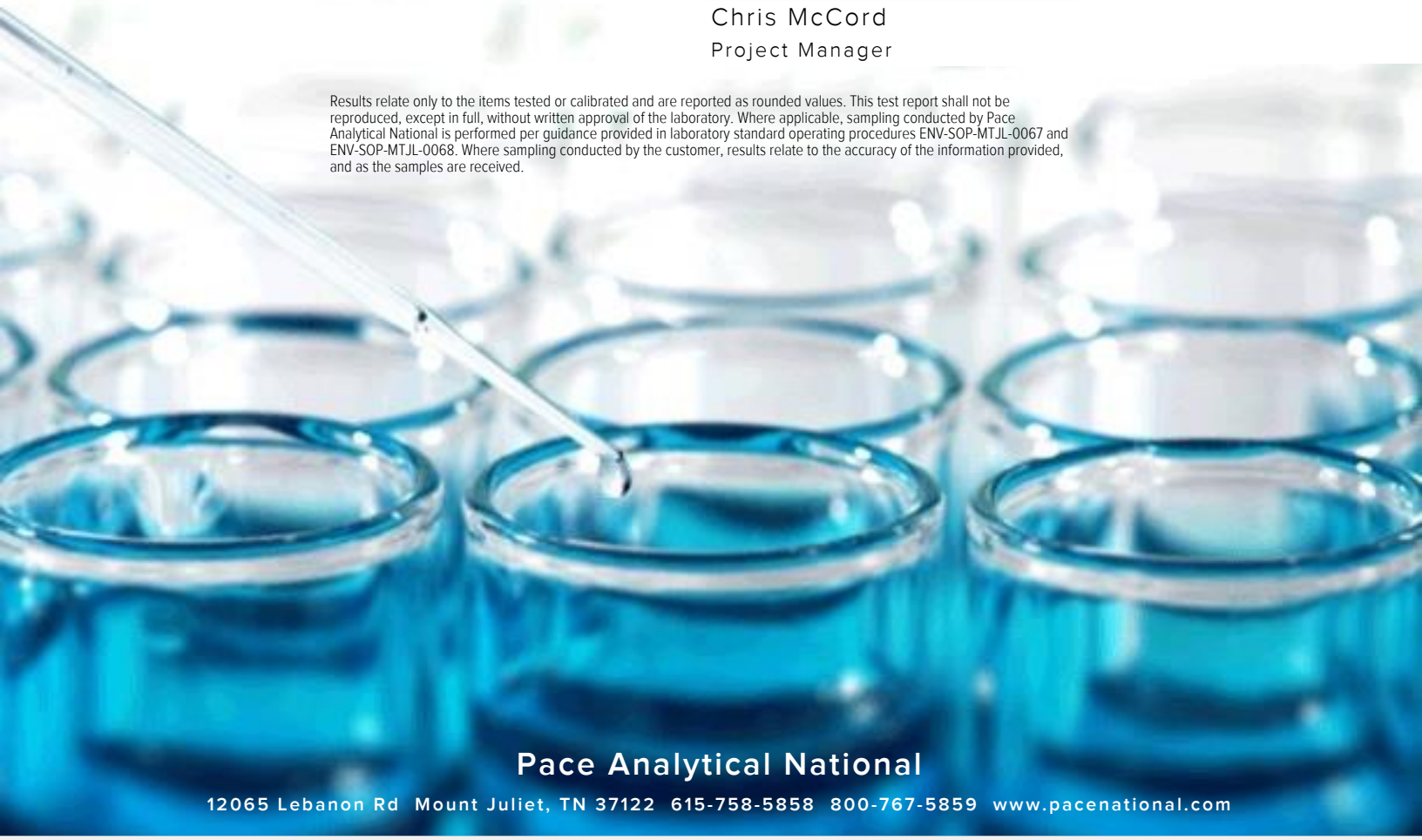
Sample Delivery Group:	L1416980
Samples Received:	10/12/2021
Project Number:	212C-MD-02396
Description:	Conoco MCA 357

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

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-1 L1416980-01 GW

Collected by: Matthew Castrejan | Collected date/time: 10/08/21 15:25 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757938	1	10/15/21 20:44	10/15/21 21:44	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 07:13	10/22/21 07:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	500	10/22/21 07:28	10/22/21 07:28	ST	Mt. Juliet, TN

MW-2 L1416980-02 GW

Collected by: Matthew Castrejan | Collected date/time: 10/07/21 11:45 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757511	1	10/14/21 21:25	10/14/21 21:52	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 07:43	10/22/21 07:43	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	100	10/22/21 07:58	10/22/21 07:58	ST	Mt. Juliet, TN

MW-3 L1416980-03 GW

Collected by: Matthew Castrejan | Collected date/time: 10/07/21 12:35 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757191	1	10/14/21 13:50	10/14/21 17:54	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 08:13	10/22/21 08:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	100	10/22/21 08:28	10/22/21 08:28	ST	Mt. Juliet, TN

MW-4 L1416980-04 GW

Collected by: Matthew Castrejan | Collected date/time: 10/07/21 13:15 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757191	1	10/14/21 13:50	10/14/21 17:54	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 09:13	10/22/21 09:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	100	10/22/21 09:27	10/22/21 09:27	ST	Mt. Juliet, TN

MW-5 L1416980-05 GW

Collected by: Matthew Castrejan | Collected date/time: 10/08/21 09:35 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757938	1	10/15/21 20:44	10/15/21 21:44	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	1	10/22/21 09:42	10/22/21 09:42	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	5	10/23/21 06:52	10/23/21 06:52	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	50	10/22/21 09:57	10/22/21 09:57	ST	Mt. Juliet, TN

MW-7 L1416980-06 GW

Collected by: Matthew Castrejan | Collected date/time: 10/08/21 10:15 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757938	1	10/15/21 20:44	10/15/21 21:44	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	1	10/22/21 10:12	10/22/21 10:12	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 10:27	10/22/21 10:27	ST	Mt. Juliet, TN

MW-8 L1416980-07 GW

Collected by: Matthew Castrejan | Collected date/time: 10/08/21 11:55 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757938	1	10/15/21 20:44	10/15/21 21:44	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	10	10/22/21 10:42	10/22/21 10:42	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1761553	100	10/22/21 10:57	10/22/21 10:57	ST	Mt. Juliet, TN

MW-9 L1416980-08 GW

Collected by: Matthew Castrejan | Collected date/time: 10/08/21 13:00 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757938	1	10/15/21 20:44	10/15/21 21:44	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	10	10/26/21 02:40	10/26/21 02:40	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	100	10/26/21 02:57	10/26/21 02:57	ELN	Mt. Juliet, TN

DUP L1416980-09 GW

Collected by: Matthew Castrejan | Collected date/time: 10/07/21 00:00 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757191	1	10/14/21 13:50	10/14/21 17:54	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	10	10/26/21 03:13	10/26/21 03:13	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	500	10/26/21 03:29	10/26/21 03:29	ELN	Mt. Juliet, TN

DUP2 L1416980-10 GW

Collected by: Matthew Castrejan | Collected date/time: 10/07/21 00:00 | Received date/time: 10/12/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1757191	1	10/14/21 13:50	10/14/21 17:54	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	10	10/26/21 03:46	10/26/21 03:46	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1762572	500	10/26/21 04:02	10/26/21 04:02	ELN	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	37000		1000	1	10/15/2021 21:44	WG1757938

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	40.1		3.53	10.0	10	10/22/2021 07:13	WG1761553
Chloride	18800		190	500	500	10/22/2021 07:28	WG1761553
Sulfate	305		5.94	50.0	10	10/22/2021 07:13	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	10600		200	1	10/14/2021 21:52	WG1757511

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	9.32	J	3.53	10.0	10	10/22/2021 07:43	WG1761553
Chloride	5800		37.9	100	100	10/22/2021 07:58	WG1761553
Sulfate	263		5.94	50.0	10	10/22/2021 07:43	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	9180		200	1	10/14/2021 17:54	WG1757191

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	10.7		3.53	10.0	10	10/22/2021 08:13	WG1761553
Chloride	4280		37.9	100	100	10/22/2021 08:28	WG1761553
Sulfate	171		5.94	50.0	10	10/22/2021 08:13	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13100		200	1	10/14/2021 17:54	WG1757191

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	9.67	J	3.53	10.0	10	10/22/2021 09:13	WG1761553
Chloride	6320		37.9	100	100	10/22/2021 09:27	WG1761553
Sulfate	179		5.94	50.0	10	10/22/2021 09:13	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	2910		50.0	1	10/15/2021 21:44	WG1757938

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	2.28		0.353	1.00	1	10/22/2021 09:42	WG1761553
Chloride	1140		19.0	50.0	50	10/22/2021 09:57	WG1761553
Sulfate	122		2.97	25.0	5	10/23/2021 06:52	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1460		25.0	1	10/15/2021 21:44	WG1757938

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.60		0.353	1.00	1	10/22/2021 10:12	WG1761553
Chloride	528		3.79	10.0	10	10/22/2021 10:27	WG1761553
Sulfate	100		5.94	50.0	10	10/22/2021 10:27	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	5100		100	1	10/15/2021 21:44	WG1757938

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	7.59	J	3.53	10.0	10	10/22/2021 10:42	WG1761553
Chloride	2320		37.9	100	100	10/22/2021 10:57	WG1761553
Sulfate	93.1		5.94	50.0	10	10/22/2021 10:42	WG1761553

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	14300		200	1	10/15/2021 21:44	WG1757938

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	11.4		3.53	10.0	10	10/26/2021 02:40	WG1762572
Chloride	6580		37.9	100	100	10/26/2021 02:57	WG1762572
Sulfate	495		5.94	50.0	10	10/26/2021 02:40	WG1762572

DUP
Collected date/time: 10/07/21 00:00
L1416980

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	30700		400	1	10/14/2021 17:54	WG1757191

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	28.5		3.53	10.0	10	10/26/2021 03:13	WG1762572
Chloride	15200		190	500	500	10/26/2021 03:29	WG1762572
Sulfate	256		5.94	50.0	10	10/26/2021 03:13	WG1762572

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	51800		1000	1	10/14/2021 17:54	WG1757191

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	58.5		3.53	10.0	10	10/26/2021 03:46	WG1762572
Chloride	27500		190	500	500	10/26/2021 04:02	WG1762572
Sulfate	397		5.94	50.0	10	10/26/2021 03:46	WG1762572

Method Blank (MB)

(MB) R3718315-1 10/14/21 17:54

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

L1415138-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1415138-01 10/14/21 17:54 • (DUP) R3718315-3 10/14/21 17:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1780	1430	1	22.3	J3	5

L1415144-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1415144-01 10/14/21 17:54 • (DUP) R3718315-4 10/14/21 17:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1680	1710	1	1.78		5

Laboratory Control Sample (LCS)

(LCS) R3718315-2 10/14/21 17:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8730	99.2	77.4-123	

Method Blank (MB)

(MB) R3718310-1 10/14/21 21:52

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

L1415883-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1415883-01 10/14/21 21:52 • (DUP) R3718310-3 10/14/21 21:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1140	1380	1	19.3	J3	5

Laboratory Control Sample (LCS)

(LCS) R3718310-2 10/14/21 21:52

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8570	97.4	77.4-123	

Method Blank (MB)

(MB) R3718884-1 10/15/21 21:44

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

L1415470-92 Original Sample (OS) • Duplicate (DUP)

(OS) L1415470-92 10/15/21 21:44 • (DUP) R3718884-3 10/15/21 21:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1880	1870	1	0.267		5

L1416980-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1416980-06 10/15/21 21:44 • (DUP) R3718884-4 10/15/21 21:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1460	1430	1	1.91		5

Laboratory Control Sample (LCS)

(LCS) R3718884-2 10/15/21 21:44

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) R3720314-1 10/22/21 03:15

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

L1421073-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1421073-02 10/22/21 04:29 • (DUP) R3720314-3 10/22/21 04:44

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	0.754	0.748	1	0.799	J	15
Sulfate	2.37	2.35	1	0.826	J	15

L1418588-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1418588-02 10/22/21 12:26 • (DUP) R3720314-5 10/22/21 12:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	29.2	29.2	1	0.0528		15
Sulfate	24.8	24.7	1	0.300		15

Laboratory Control Sample (LCS)

(LCS) R3720314-2 10/22/21 03:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.4	98.5	80.0-120	
Chloride	40.0	39.7	99.3	80.0-120	
Sulfate	40.0	40.0	100	80.0-120	

L1421073-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1421073-02 10/22/21 04:29 • (MS) R3720314-4 10/22/21 04:59

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	47.1	94.2	1	80.0-120	
Chloride	50.0	0.754	49.1	96.6	1	80.0-120	
Sulfate	50.0	2.37	50.5	96.2	1	80.0-120	

L1418588-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418588-02 10/22/21 12:26 • (MS) R3720314-6 10/22/21 12:56 • (MSD) R3720314-7 10/22/21 13:11

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	U	45.6	45.6	91.2	91.2	1	80.0-120			0.0853	15
Chloride	50.0	29.2	76.2	76.3	94.1	94.2	1	80.0-120			0.0420	15
Sulfate	50.0	24.8	71.7	70.3	93.8	91.0	1	80.0-120			2.01	15

Method Blank (MB)

(MB) R3721415-1 10/25/21 22:28

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

L1416504-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1416504-20 10/26/21 00:12 • (DUP) R3721415-3 10/26/21 00:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	2.87	2.86	1	0.0244		15
Sulfate	1.94	1.86	1	4.30	J	15

L1417104-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1417104-01 10/26/21 04:19 • (DUP) R3721415-6 10/26/21 04:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	9.31	9.29	1	0.229		15
Sulfate	3.59	3.48	1	3.13	J	15

Laboratory Control Sample (LCS)

(LCS) R3721415-2 10/25/21 22:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.4	98.6	80.0-120	
Chloride	40.0	40.1	100	80.0-120	
Sulfate	40.0	40.3	101	80.0-120	

L1416504-23 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1416504-23 10/26/21 00:45 • (MS) R3721415-4 10/26/21 01:02 • (MSD) R3721415-5 10/26/21 01:18

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	1.30	46.4	46.9	90.3	91.2	1	80.0-120			0.923	15
Chloride	50.0	15.3	63.0	62.9	95.5	95.3	1	80.0-120			0.168	15
Sulfate	50.0	5.50	53.0	52.9	95.0	94.8	1	80.0-120			0.158	15

L1417269-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1417269-01 10/26/21 05:41 • (MS) R3721415-7 10/26/21 05:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	47.0	94.0	1	80.0-120	
Chloride	50.0	1.57	50.8	98.4	1	80.0-120	
Sulfate	50.0	12.0	60.7	97.4	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	LAO00356
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

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

L# L1416980

Table # 1041

Collected by (print): Matthew Castrejon

Site/Facility ID #

P.O. #

Acctnum: COPTETRA

Template:

Collected by (signature):

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

Prelogin:

TSR: 526 - Chris McCord

PB:

Shipped Via:

Immediately Packed on Ice N ___ Y ___

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	G	W		10/6/21	1525	1	X	X		-01
MW-2	G	W		10/7/21	1145		X	X		02
MW-3	G	W		10/7/21	1235		X	X		03
MW-4	G	W		10/7/21	1315		X	X		04
MW-5	G	W		10/8/21	0935		X	X		05
MW-7	G	W		10/8/21	1015		X	X		06
MW-8	G	W		10/8/21	1155		X	X		07
MW-9	G	W		10/8/21	1300		X	X		08
DUP	G	W					X	X		09
DUP2	G	W				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)	Trip Blank Received: Yes (No) HCL / MeoH TBR
	10-11-21	12:30		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp 0.2 °C Bottles Received: 10
	10-11-21	1646		8.8+0.2=8.6
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/12/21 Time: 1857

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

10/12 - L1416980 COPTETRA - NCF

R5

Time estimate: oh **Time spent:** oh

Members

Jeremy Watkins (responsible) Christopher McCord

- [ ] Parameter(s) past holding time
- [x] Temperature not in range
- [ ] Improper container type
- [ ] pH not in range
- [ ] Insufficient sample volume
- [ ] Sample is biphasic
- [ ] Vials received with headspace
- [ ] Broken container
- [ ] Sufficient sample remains
- [ ] If broken container: Insufficient packing material around container
- [ ] If broken container: Insufficient packing material inside cooler
- [ ] If broken container: Improper handling by carrier:_____
- [ ] If broken container: Sample was frozen
- [ ] If broken container: Container lid not intact
- [ ] Client informed by Call
- [x] Client informed by Email
- [ ] Client informed by Voicemail
- [x] Date/Time: 10/12/21 16:51
- [x] PM initials: CM
- [x] Client Contact: Julie Evans

Comments

Jeremy Watkins *12 October 2021 12:50 PM*

Received @ 8.8 Deg C. All Ice Melted

Christopher McCord *12 October 2021 5:21 PM*

Run as received.

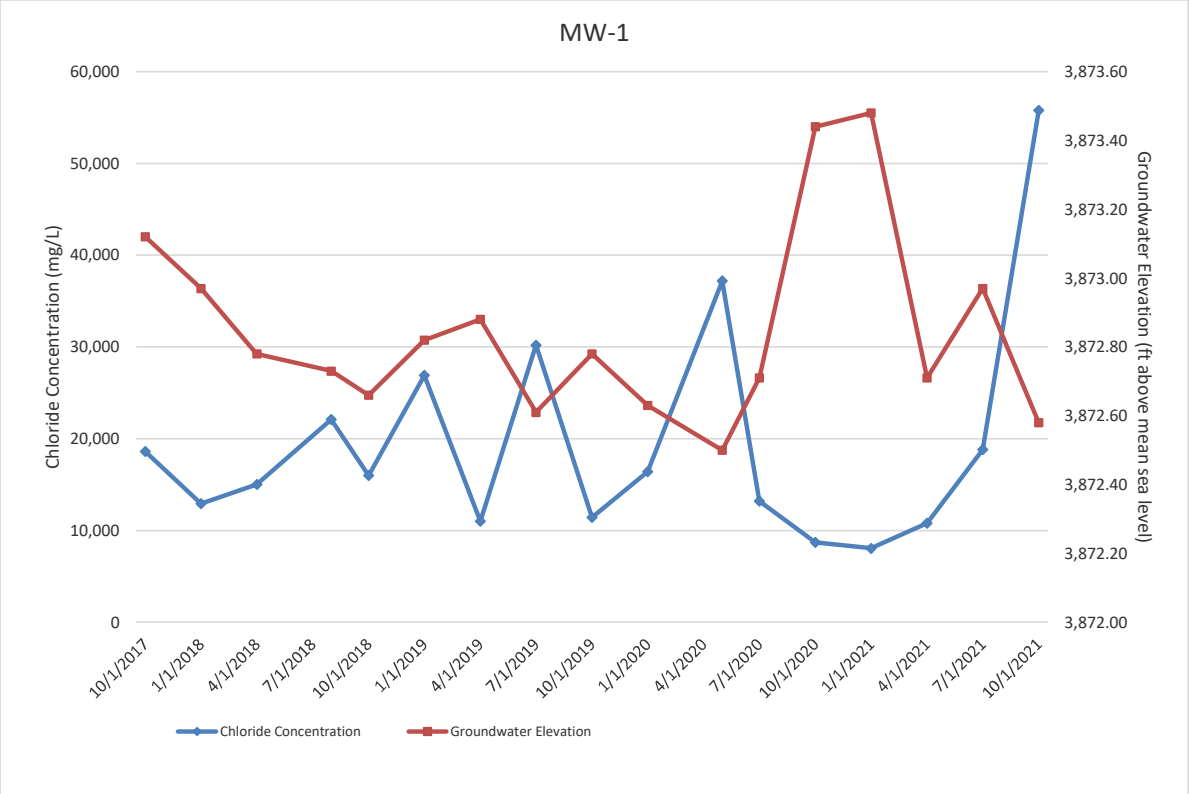
Jeremy Watkins *13 October 2021 8:34 AM*

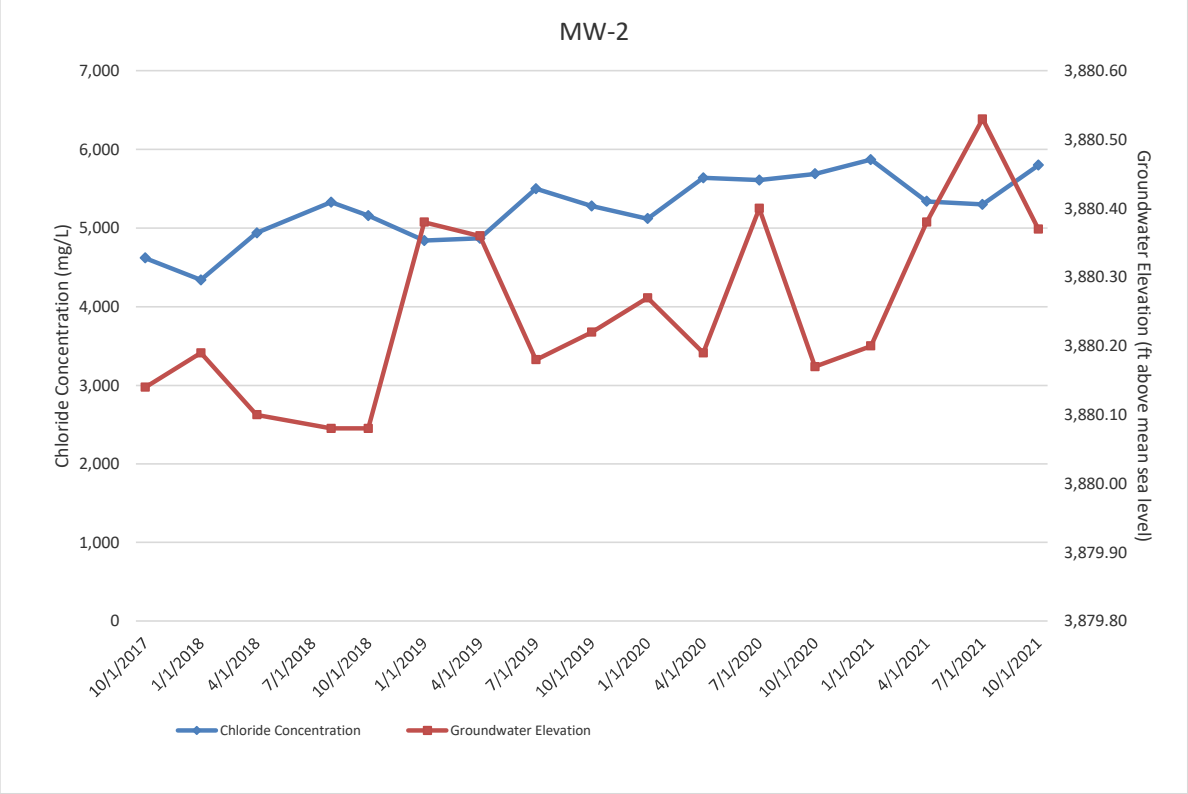
Done

TETRA TECH

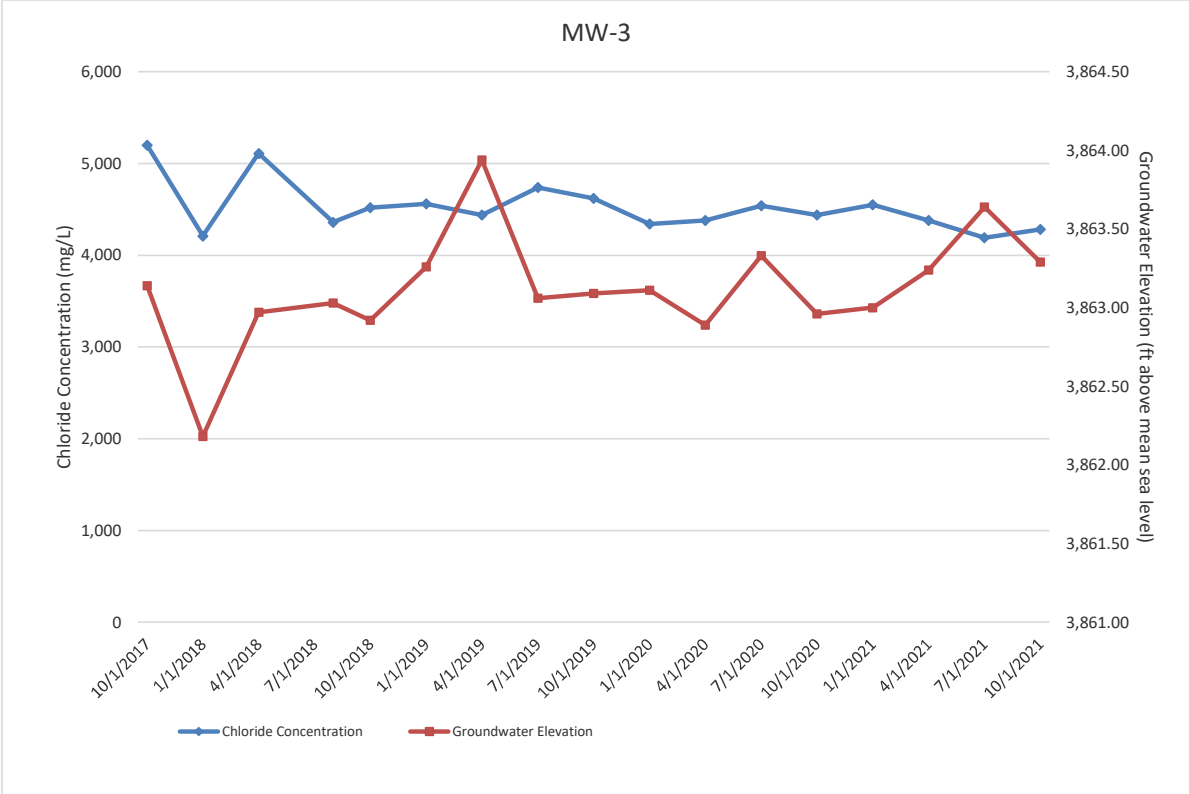
APPENDIX B
CHLORIDE CONCENTRATION TREND GRAPHS

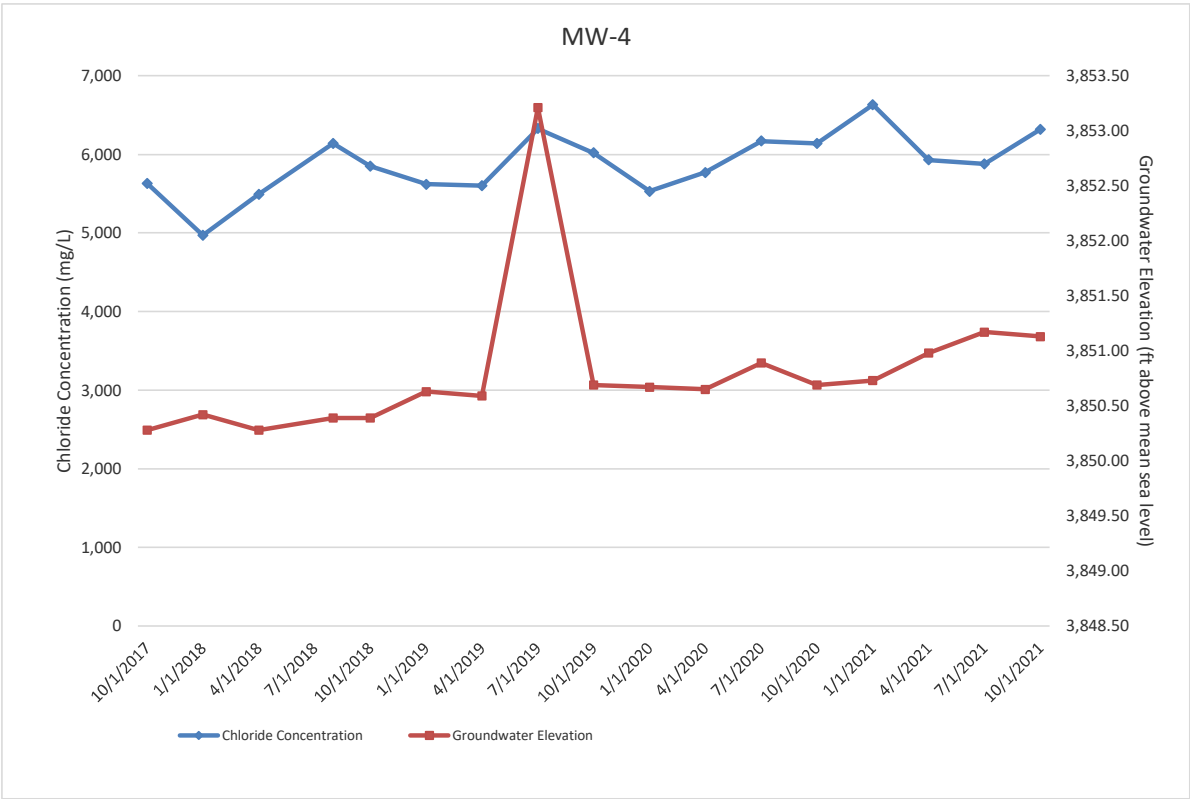
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



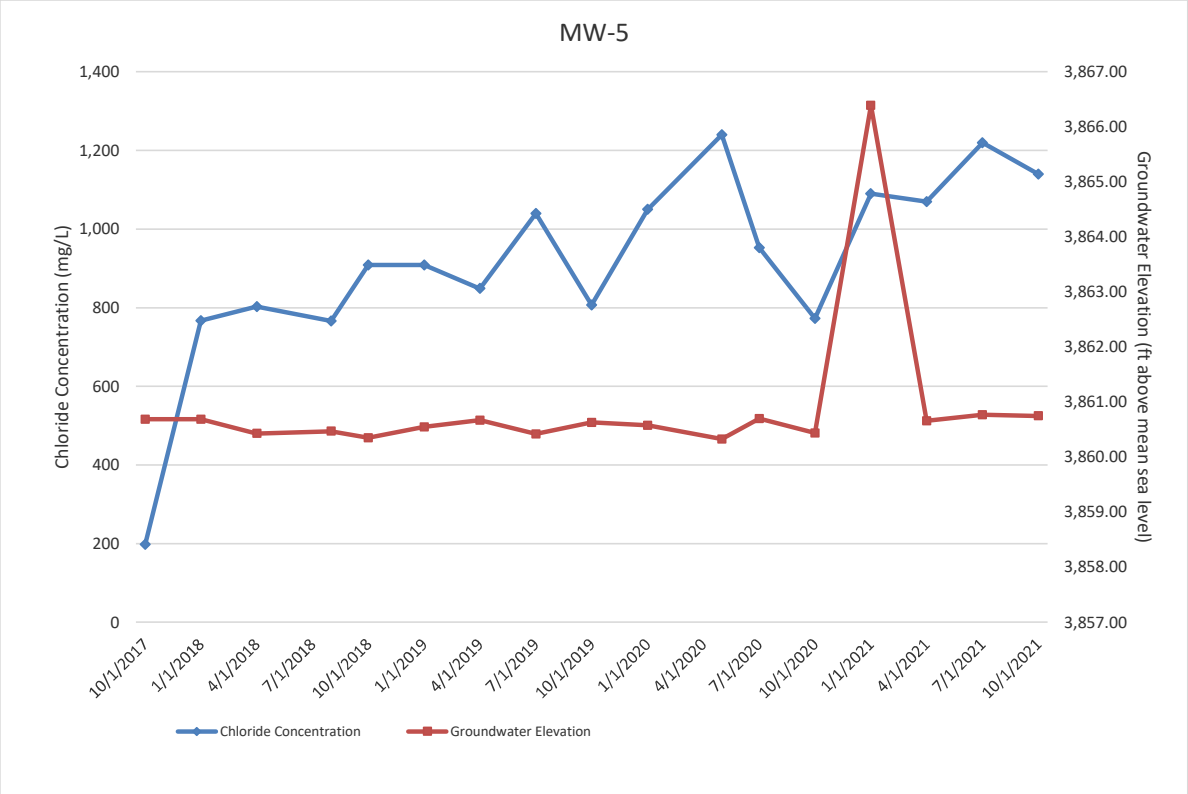


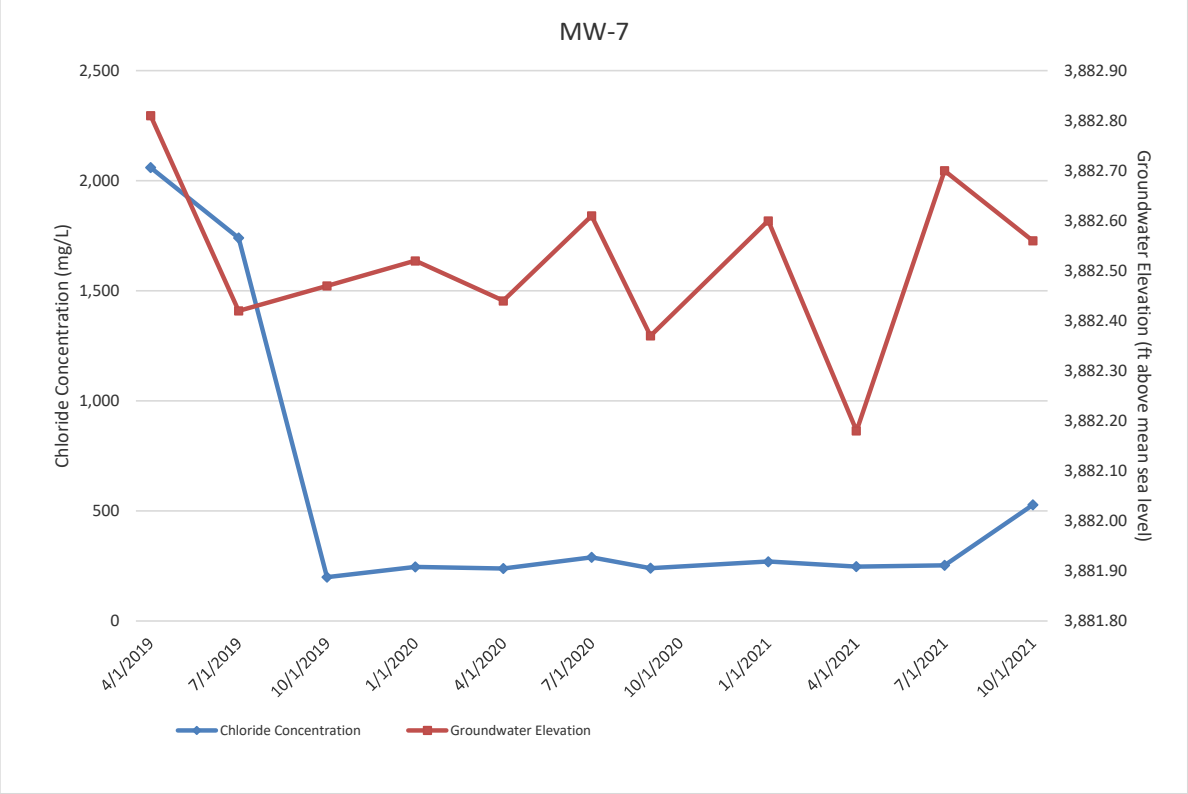
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



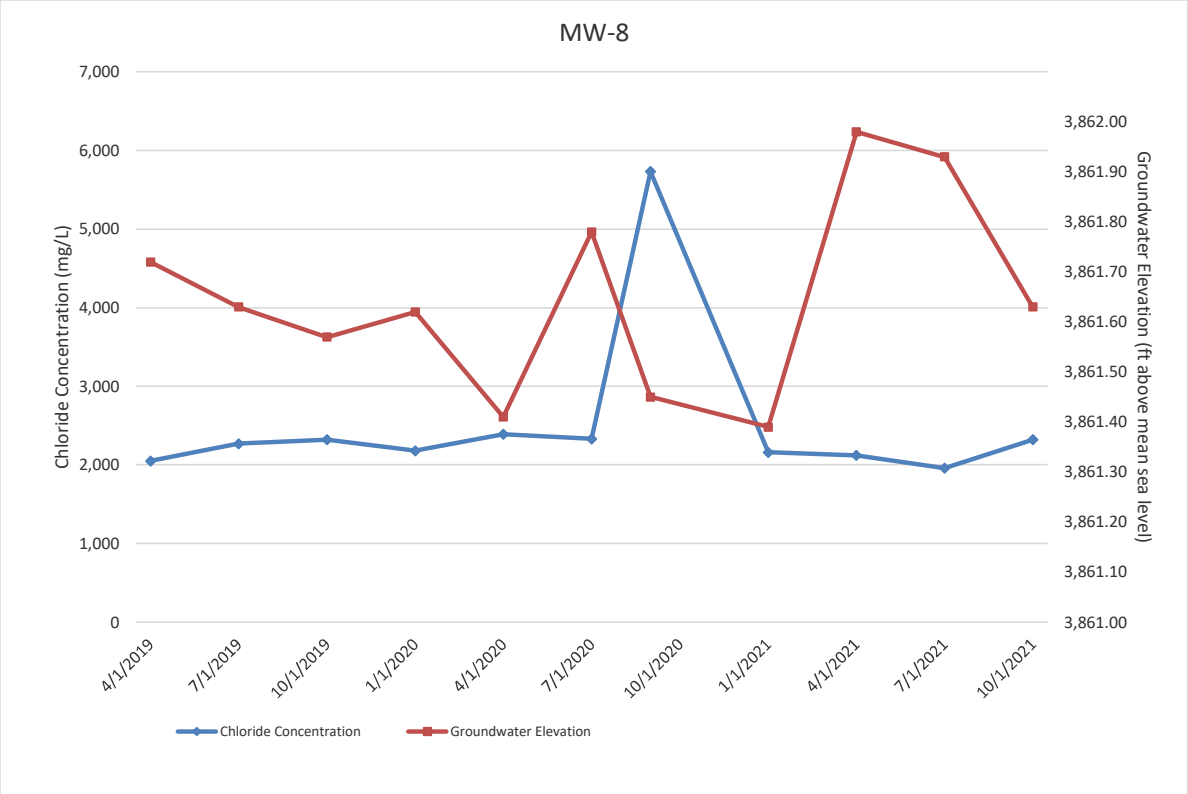


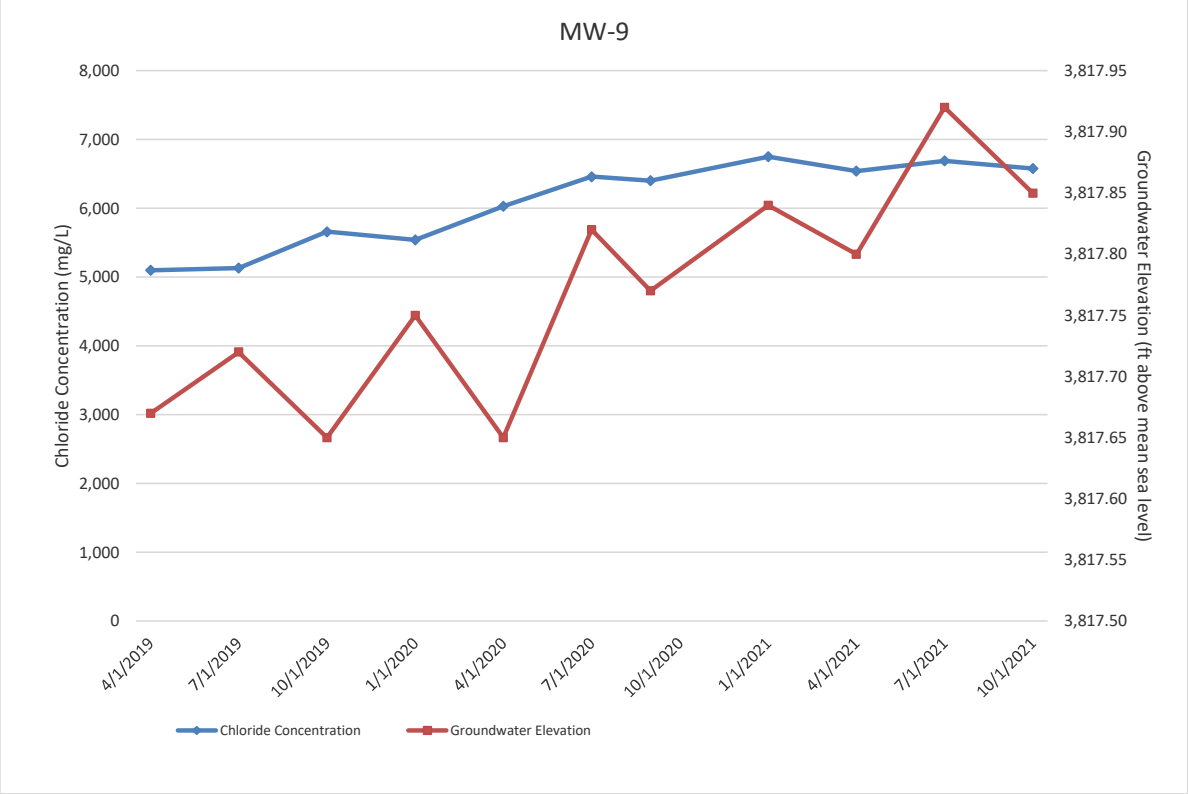
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



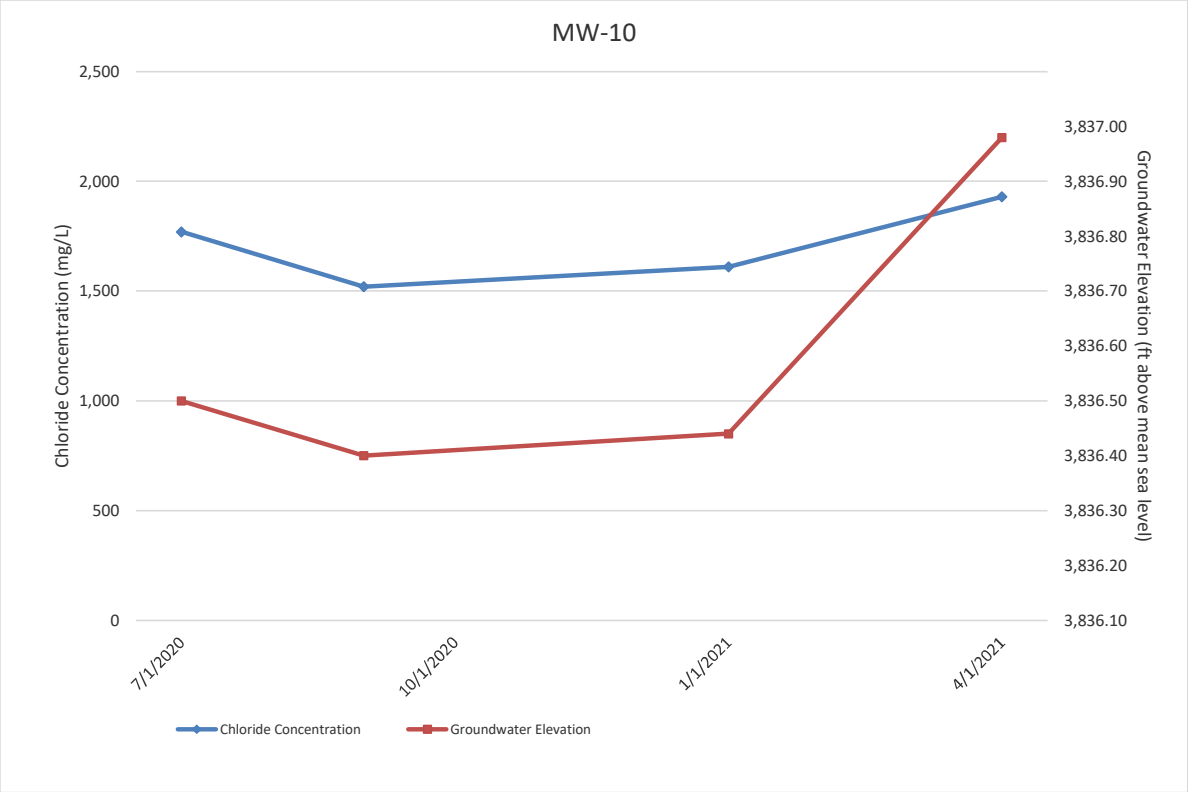


Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico





Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 107874

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 107874
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2021 Annual Monitoring Remedial Activities Report for MCA Well Number 357, 1RP-3025: Content Satisfactory 1. Reduce groundwater sampling frequency to semi-annual until COCs are demonstrated below allowable concentrations per the WQCC. 2. To date 06/18/2024, Conoco Phillips has not proposed a groundwater abatement option for the clean-up of high TDS and chlorides. This was originally requested in the Corrective Action Plan dated 10/30/2014 for MCA Well #357, but has not been submitted. A follow up letter from the OCD may be issued if this is not proposed in 60 days from 06/18/2024 3. Submit the 2024 Annual Groundwater Report by April 1, 2025.	6/18/2024