Incident Number: nAPP2207561363

Release Assessment and Closure

Warren ANW Federal #3

Unit O, Section 9, Township 19 South, Range 25 East

County: Eddy

Vertex File Number: 22E-00954

Prepared for:

EOG Resources, Inc.

Prepared by:

Vertex Resource Services Inc.

Date:

May 2023

Release Assessment and Closure
Warren ANW Federal #3
Unit O, Section 9, Township 19 South, Range 25 East
County: Eddy

Prepared for:
EOG Resources, Inc.
104 South 4th Street
Artesia, New Mexico 88210

New Mexico Oil Conservation Division – District 2
811 S. 1st Street
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Prepared by:
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3101 Boyd Drive
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Chance Dixon

Chance Dixon, B.Sc.
PROJECT MANAGER, REPORTING

12/1/2023
Date

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1.0 Introduction

EOG Resources, Inc. (EOG) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a produced water release that occurred on March 8, 2022, at Warren ANW Federal #3 (hereafter referred to as "Warren"). EOG submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 2 on March 16, 2022. Incident ID number nAPP2207561363 was assigned to this incident.

This report provides a description of the release assessment and remediation activities associated with Warren. The information presented demonstrates that closure criteria established in Table I of 19.15.29.12 of the *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) related to NMOCD has been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for the closure of this release, with the understanding that restoration of the release site will be deferred until such time as all oil and gas activities are terminated and the site is reclaimed as per NMAC 19.15.29.13.

2.0 Incident Description

The release occurred on March 8, 2022, due to a pinhole developing on a steel portion of the produced water transfer line. The incident was reported on March 16, 2022, and involved the release of produced water on the north side of the battery across from the entrance on the south side. The volume of the release is unknown. Approximately 7 barrels (bbl.) of free fluid were removed during the initial clean-up. Additional details relevant to the release are presented in the C-141 Report.

3.0 Site Characteristics

The site is located approximately 6.4 miles northwest of Seven Rivers, New Mexico. The legal location for the site is Unit O, Section 9, Township 19 South and Range 25 East in Eddy County, New Mexico. The release area is located on private property. An aerial photograph and site schematic are presented on Figure 1.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site's surface geology primarily comprises QP – Piedmont alluvial deposits from the Holocene to the lower Pleistocene ages. The predominant soil texture on the site is Reagan-Upton. The karst geology potential for the site is medium (United States Department of the Interior, Bureau of Land Management, 2018).

The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas production, and storage. The following sections specifically describe the release area on the northern edge of the constructed pad (Figure 1).

The surrounding landscape is associated with ridges and fans with elevations ranging between 1,100 and 5,400 feet. The climate is semiarid with average annual precipitation ranging between 6 and 15 inches. The soil is well-drained with a high runoff. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be blue grama. Creosotebush, mesquite, and catclaw mimosa are common shrubs (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way, and access road.

4.0 Closure Criteria Determination

The nearest active well to the site is a United States Geological Survey (USGS) monitoring well located approximately 0.34 miles southeast of the location (United States Geological Survey, 2023). Data from 2012 shows the USGS borehole recorded a depth to groundwater of 95 feet below ground surface (bgs). Information pertaining to the depth to groundwater determination is included in Appendix B.

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is a riverine located approximately 0.21 miles east of the site (United States Fish and Wildlife Service, 2023).

At the site, there are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Closure Criteria Worksheet			
Site Name: Warren ANW Federal #3			
Spill Coordinates:		**X: 32.670602**	**Y: -104.488108**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**95**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	54,529	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	40,734	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	11,559	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	2,115	feet
	ii) Within 1000 feet of any fresh water well or spring	2,115	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	1,099	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	UR - Upton Reagan	
12	Ecological Classification	Shallow	
13	Geology	Qp	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 1.

Table 1. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
51 feet - 100 feet	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS – total dissolved solids

TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics

BTEX – benzene, toluene, ethylbenzene and xylenes

5.0 Remedial Actions

Remediation efforts began on April 26, 2023, and were finalized on May 16, 2023. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of 32 sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Quantabs (chlorides). Field screening results were used to identify areas requiring further remediation. Soils were removed to a depth of 1 to 4 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility as stipulated by the Form C-138 Request for Approval to Accept Solid Waste – New Mexico filed with the NMOCD. Field screening results and DFRs documenting various phases of the remediation are presented in Appendix C.

During excavation from April 27 to May 4, 2023, EOG provided two 48-hour notifications of confirmation sampling to NMOCD (Appendix D). Confirmatory composite samples were collected from the base and walls of the excavation in 200-square-foot increments. A total of 35 confirmation samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 3, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below the closure criteria for the site.

6.0 Closure Denial

On October 19, 2023, NMOCD denied the original closure report due to the site not being vertically delineated with it being outside of a lined containment area and the release being an unknown quantity. From October 25 through November 22, 2023, the site was vertically delineated to NMOCD's strictest closure criteria at borehole sample points from the previous characterization to provide analysis for areas throughout the site. The borehole sample locations are presented along with the confirmation samples in Figure 1.

7.0 Closure Request

Vertex recommends no additional remediation action to address the release at Warren. Laboratory analyses of confirmation samples collected at Warren show final confirmatory values below NMOCD remediation closure criteria for areas where depth to groundwater is between 51 and 100 feet, with the top four feet meeting reclamation requirements of NMAC 19.15.29.13. Laboratory analyses are shown in Table 3. There are no anticipated risks to human, ecological, or hydrological receptors at this release site.

The excavation has been backfilled with non-waste-containing, uncontaminated, earthen material that was sourced locally and placed to meet the site's existing grade to prevent water ponding and erosion.

The site has since been vertically delineated to NMOCD's strictest criteria as required by 19.15.29.12 NMAC for areas where depth to groundwater is between 51 and 100 feet bgs.

Vertex and EOG request that this incident (nAPP2207561363) be closed as all requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. EOG certifies that all information in this report and the appendices are correct and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the release.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or cdixon@vertex.ca.

8.0 References

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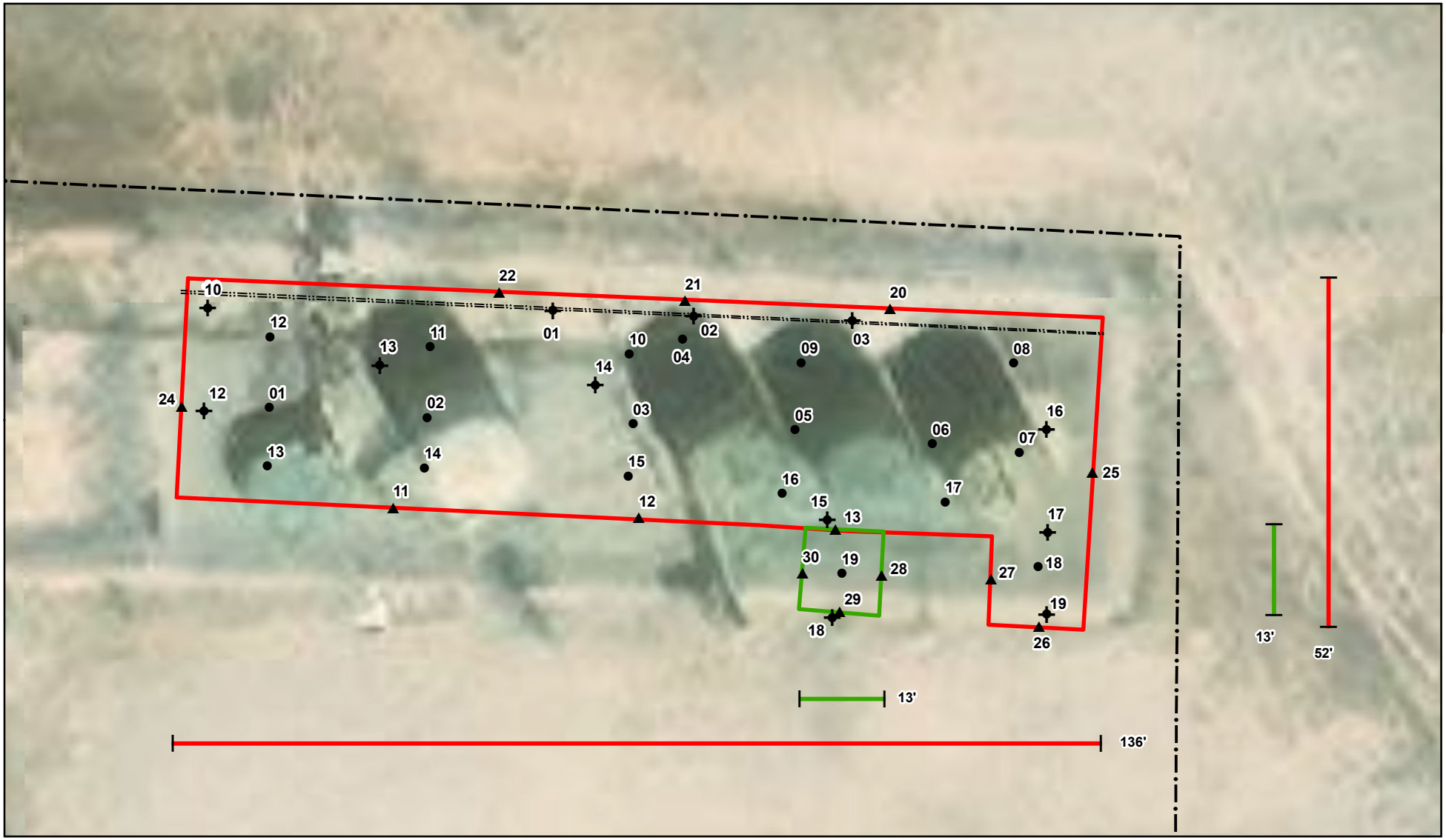
9.0 Limitations

This report has been prepared for the sole benefit of EOG Resources, Inc. (EOG). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division without the express written consent of Vertex Resource Services Inc. (Vertex) and EOG. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

Figures



● Base Sample (Prefixed by "BES23-")

▲ Wall Sample (Prefixed by "WES23-")

✦ Borehole (Prefixed by "BH22-")

Pipeline (Underground)

Approximate Lease Boundary

Excavation to 4 ft. bgs (~4,530 sq.ft.)

Excavation to 1 ft. bgs (~141 sq.ft.)

VERTEX

0 10 20 ft

Map Center:
Lat/Long: 32.670539, -104.487878

NAD 1983 UTM Zone 13N
Date: Nov 30/23

N

Confirmatory Schematic
Warren ANW Federal #3

FIGURE:
2

eog resources

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Georeferenced image from Esri, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS, Vertex, 2023.

Document Path: C:\Users\scartan\OneDrive - Vertex Resource Group Ltd\Desktop\Geomatics\Figure 2 Confirmatory Schematic Warren Req174681_mxd

TABLES

Table 3. Confirmatory Laboratory Results - Depth to Groundwater 51-100 feet bgs
Client: EOG Resources Inc.
Site Name: Warren ANW Federal #3
NMOCD Tracking #: nAPP2207561363
Project #: 22E-00954
Lab Reports: 2305400, 2305040, 2305198 and 2305493

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
2023 Excavation													
WES23-11	0-4	May 2, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200
WES23-12	0-4	May 2, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210
WES23-13	0-4	May 2, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210
WES23-20	0-4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
WES23-21	0-4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230
WES23-22	0-4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	240
WES23-24	0-4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	410
WES23-25	0-4	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-26	0-4	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-27	0-4	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-27	0-4	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-28	0-1	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-29	0-1	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES23-30	0-1	May 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES23-01	4	April 29, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3800
BES23-02	4	April 29, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3000
BES23-03	4	April 29, 2023	ND	ND	ND	ND	ND	ND	150	150	150	300	7800
BES23-04	4	April 29, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7500
BES23-05	4	April 29, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7800
BES23-06	4	April 29, 2023	ND	ND	ND	ND	ND	ND	32	ND	32	32	4800
BES23-07	4	April 29, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3500
BES23-08	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	770
BES23-09	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2800
BES23-10	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5000
BES23-11	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2100
BES23-12	4	May 5, 2023	ND	ND	ND	ND	ND	ND	53	75	53	128	2500
BES23-13	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES23-14	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	240
BES23-15	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200
BES23-16	4	May 5, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390
BES23-17	4	May 5, 2023	ND	ND	ND	ND	ND	ND	17	ND	17	17	400
BES23-18	4	May 8, 2023	ND	ND	ND	ND	ND	ND	23	49	23	ND	250
BES23-19	1	May 8, 2023	ND	ND	ND	ND	ND	ND	23	49	23	ND	250

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)
ND - Not Detected at the Reporting Limit
- Denotes no standard/not analyzed

Client Name: EOG Resources, Inc.
Site Name: Warren ANW Federal #3
NMOCD Tracking #: nAPP2207561363
Project #: 22E-00954
Lab Reports: 2203E12, 2203E17, 2203D60, 2204D49, 2205061, 2311C28

Table 4. Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons						Inorganic
						Volatile		Extractable				
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH22-01	22	10/26/2023	0	35	368	ND	ND	ND	12	ND	12	400
BH22-02	12	10/26/2023	0	37	415	ND	ND	ND	ND	ND	ND	360
BH22-10	14	11/22/2023	0	227	28	ND	ND	ND	18	ND	18	ND
BH22-13	5	10/25/2023	0	47	456	ND	ND	ND	ND	ND	ND	320
BH22-14	15	10/26/2023	0	19	342	ND	ND	ND	ND	ND	ND	280
BH22-16	10	10/25/2023	0	3	431	ND	ND	ND	ND	ND	ND	440
BH22-17	6	10/26/2023	0	10	447	ND	ND	ND	ND	ND	ND	250

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed

APPENDIX A - NMOCD C-141 Report(s)

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2207561363
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr

Signature: Chase Settle Date: 12/01/2023

email: Chase_Settle@eogresources.com Telephone: 575-703-6537

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B – Closure Criteria Research Documentation

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 324004104285801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

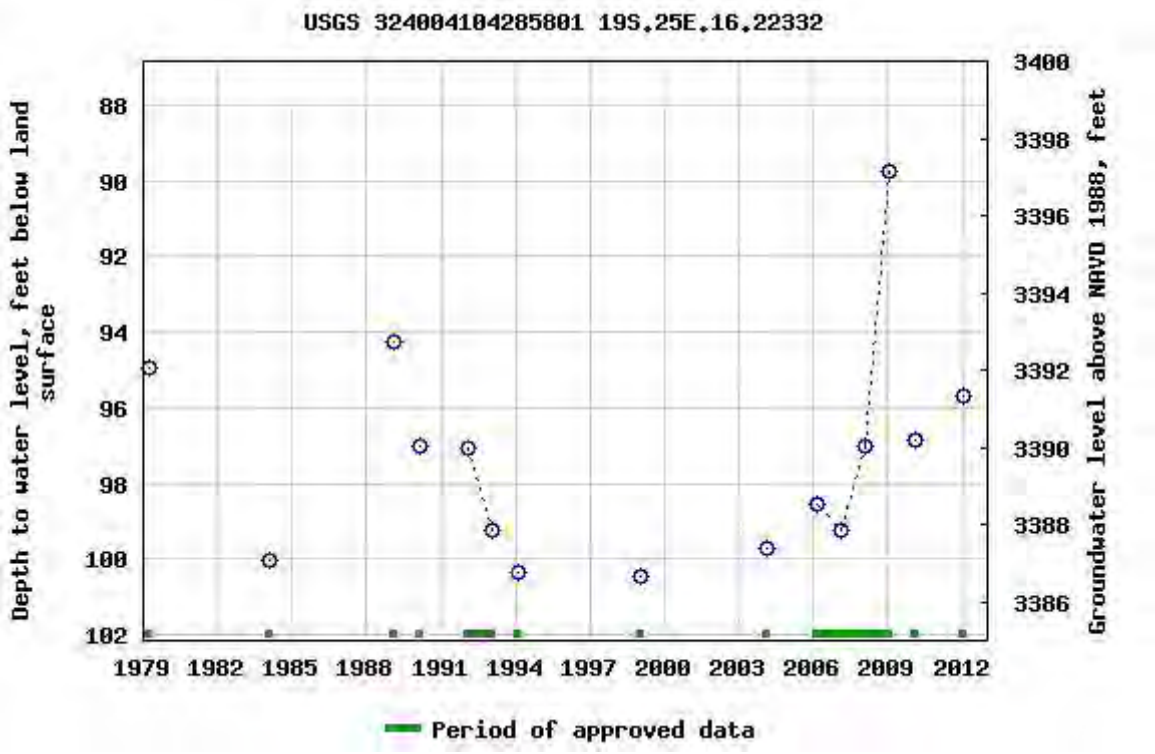
USGS 324004104285801 19S.25E.16.22332

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°40'04", Longitude 104°28'58" NAD27
Land-surface elevation 3,487 feet above NAVD88
This well is completed in the Roswell Basin aquifer system (S400RSWLBS) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

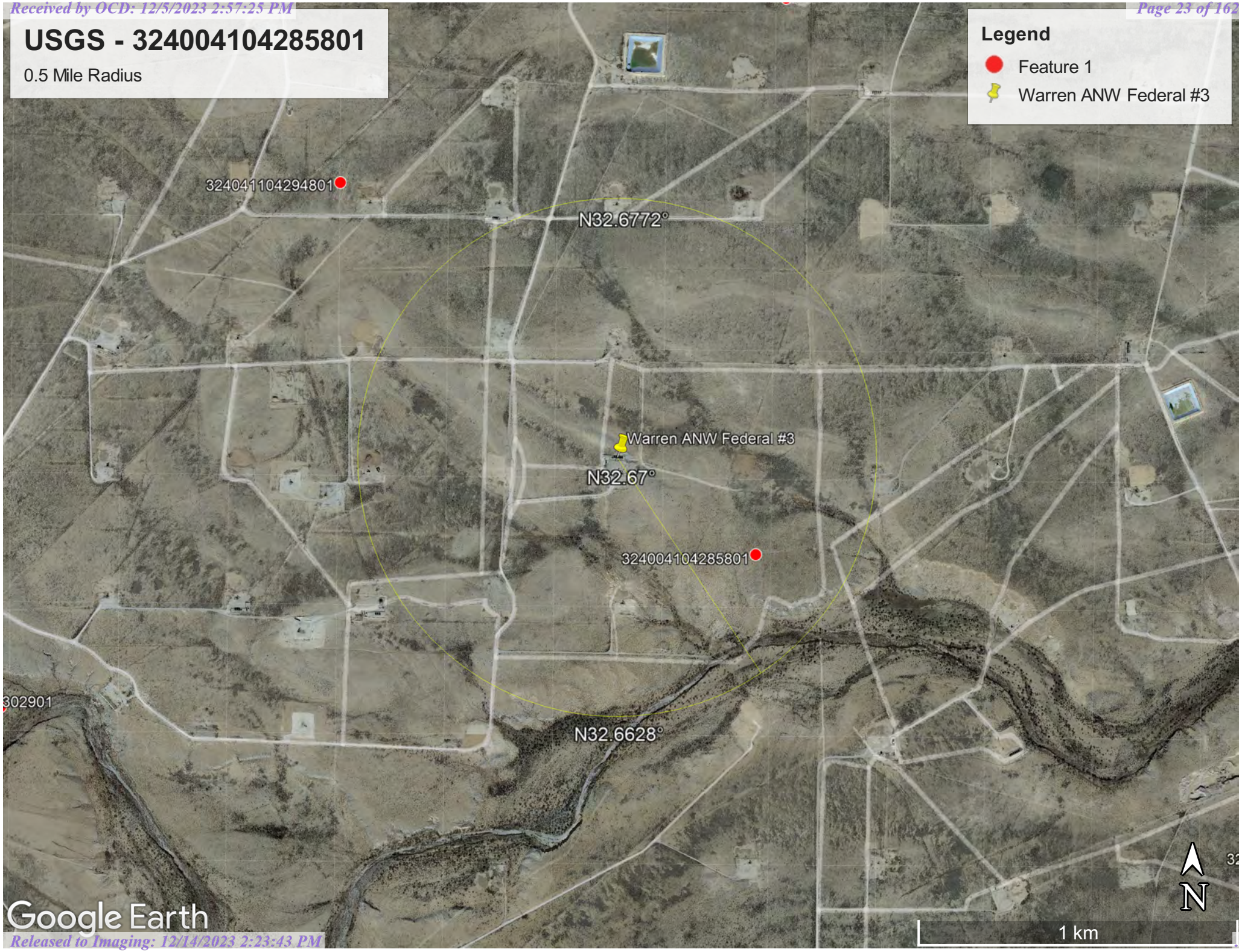
Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2022-03-15 14:48:53 EDT
0.69 0.59 nadww01

Warren ANW Federal #3

USGS Well 324004104285801
Distance: 0.34 miles (1,770 feet)
DTGW: 95 feet
Latest reading: 2012

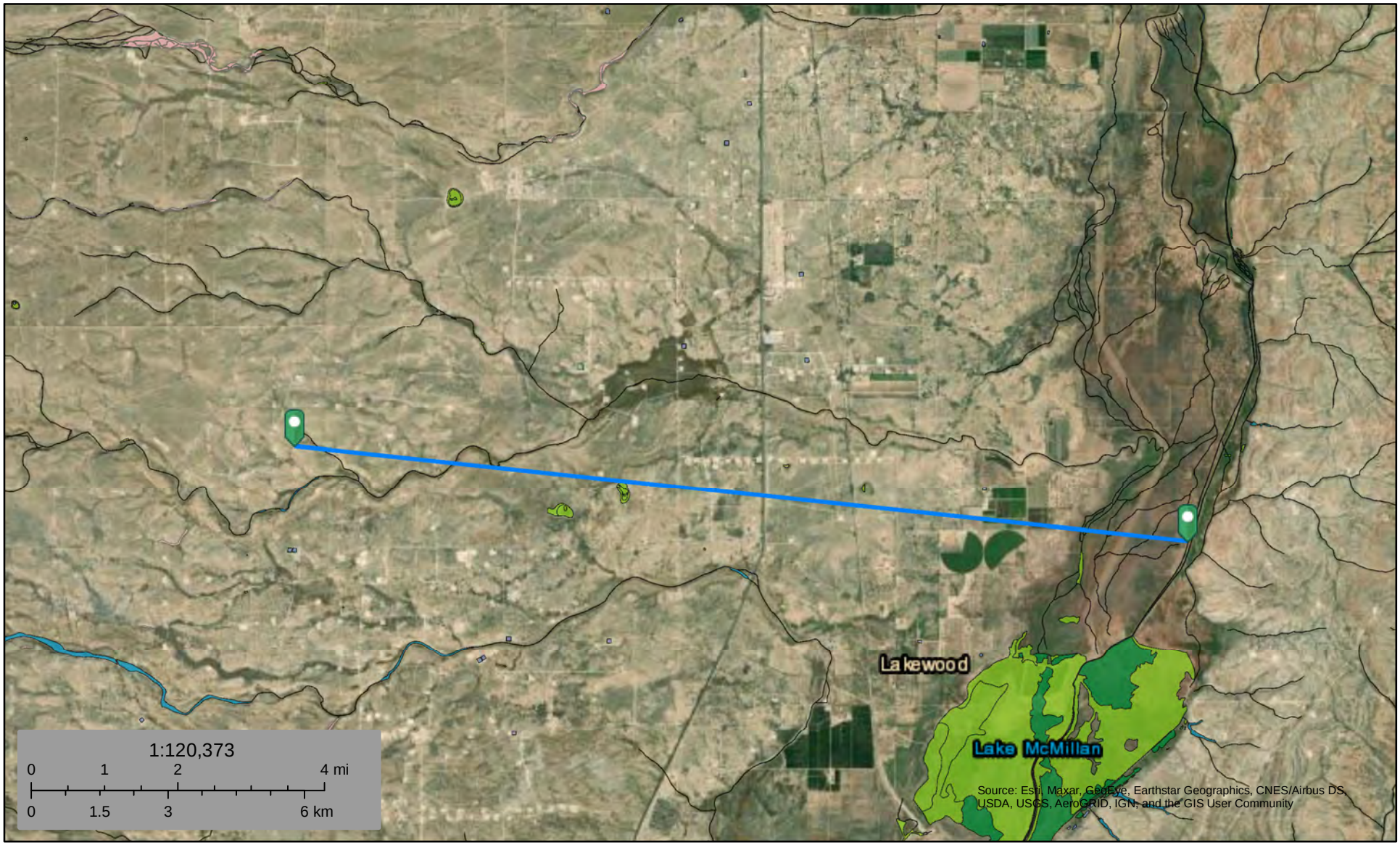
USGS - 324004104285801

0.5 Mile Radius



U.S. Fish and Wildlife Service
National Wetlands Inventory

Warren ANW Federal #3



March 15, 2022

Wetlands

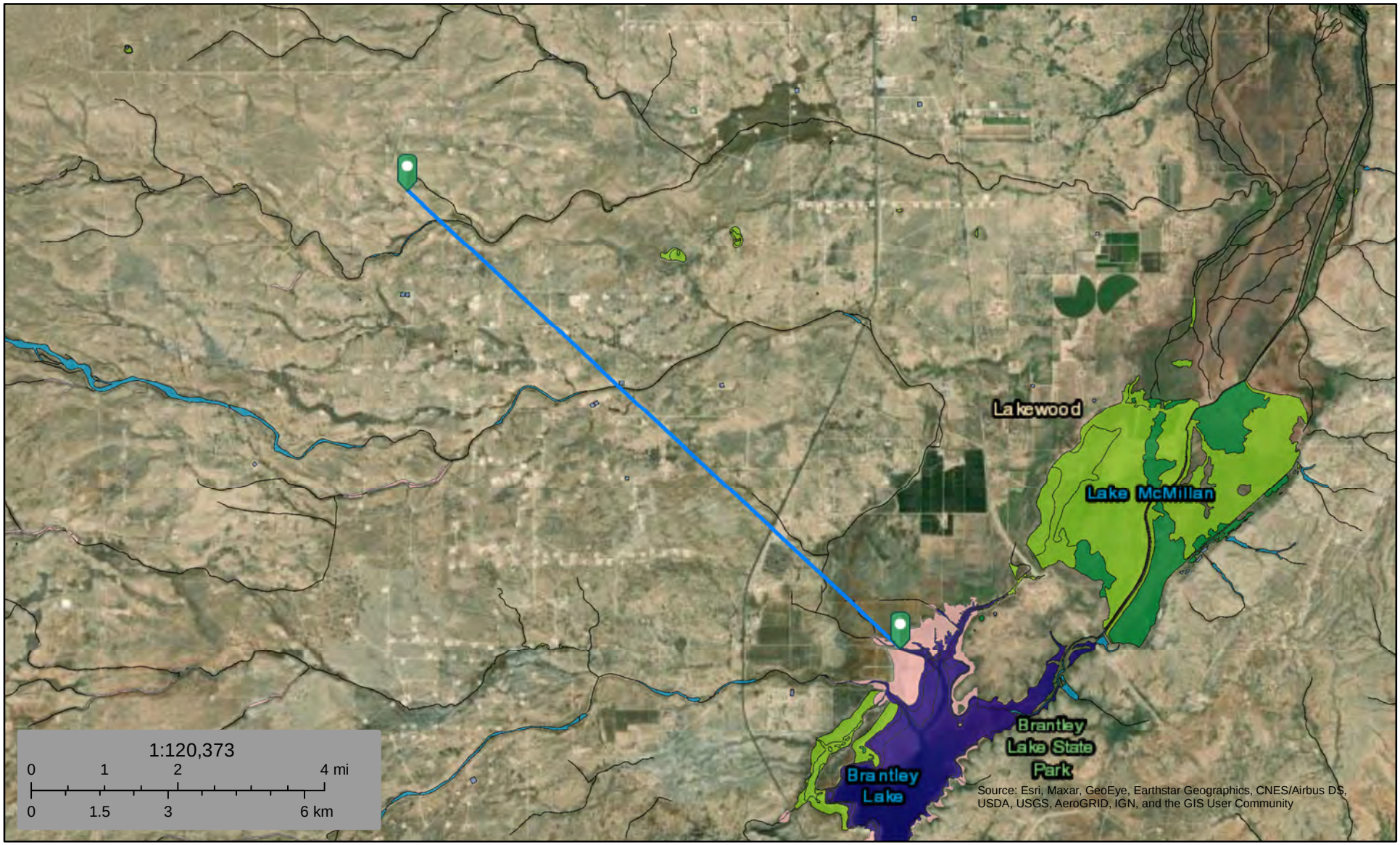
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Warren ANW Federal #3



March 15, 2022

Wetlands

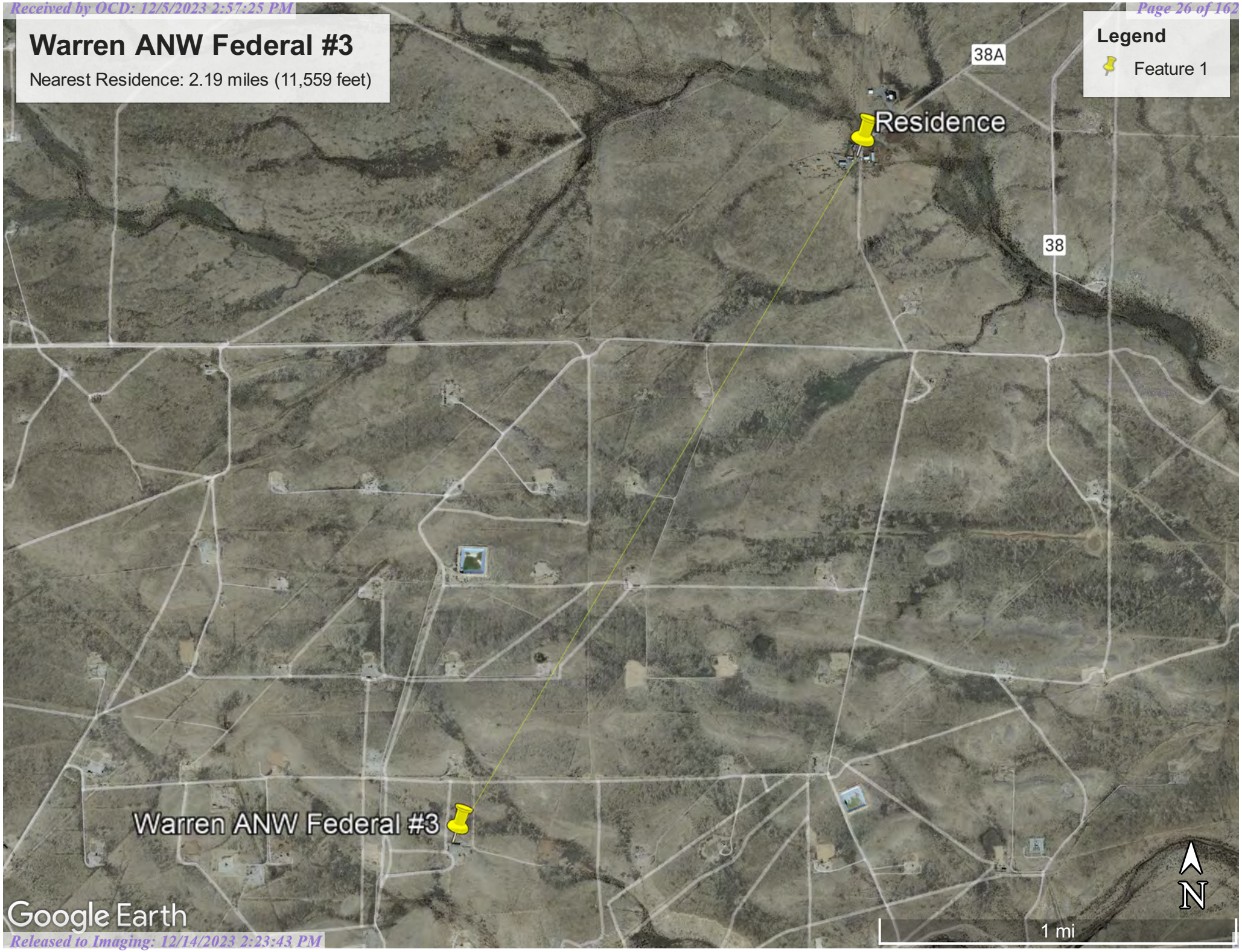
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Warren ANW Federal #3

Nearest Residence: 2.19 miles (11,559 feet)



Warren ANW Federal #3

3/15/2022, 1:11:50 PM

Override 1

GIS WATERS PODs

Active

OSE District Boundary

Water Right Regulations

Closure Area

New Mexico State Trust Lands

Both Estates

SiteBoundaries

1:4,514

0 0.05 0.1 0.19 mi

0 0.07 0.15 0.3 km

Esri, HERE, GeoTechnologies, Inc., Esri, HERE, Garmin, GeoTechnologies, Inc., U.S. Department of Energy Office of Legacy Management, Maxar

Unofficial Online Map

These maps are distributed “as is” without warranty of any kind.

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: RA 05900 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: STK 72-12-1 LIVESTOCK WATERING

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: JAMES H AND BETTY R HOWELL REVOCABLE TRUST

Contact: ALAN R HOWELL

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	507618	72121	2012-07-18	PMT	APR	RA 05900	T		3	
get images	507613	COWNF	2012-07-11	CHG	PRC	RA 05900	T		0	
	247729	72121	1974-03-19	PMT	LOG	RA 05900	T		3	

Current Points of Diversion

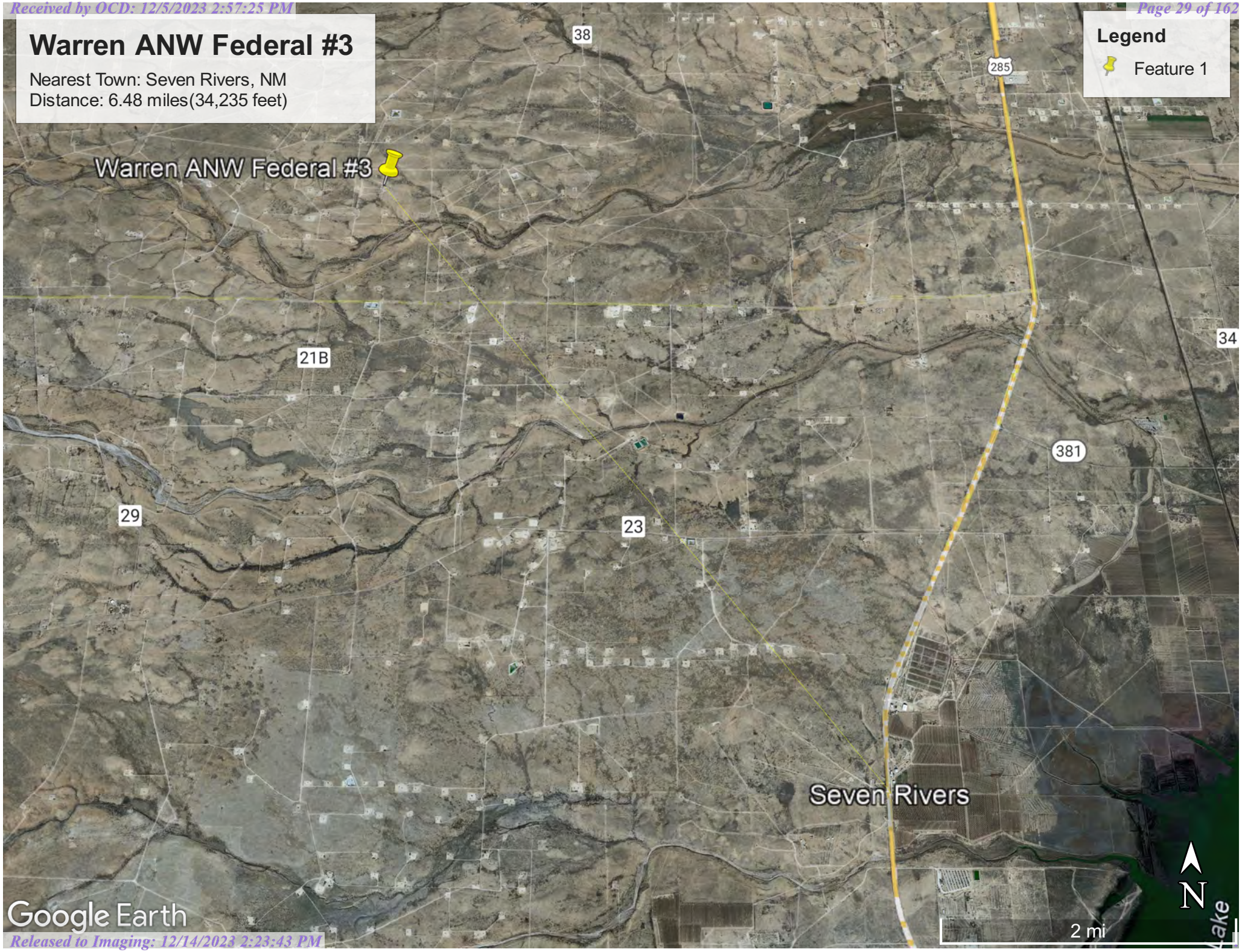
(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 05900		Shallow		2	2	16	19S	25E	548442	3614424*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Warren ANW Federal #3

Nearest Town: Seven Rivers, NM
Distance: 6.48 miles(34,235 feet)



U.S. Fish and Wildlife Service
National Wetlands Inventory

Warren ANW Federal #3

March 15, 2022

Wetlands

- Estuarine and Marine Deepwater
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National Wetlands Inventory (NWI)
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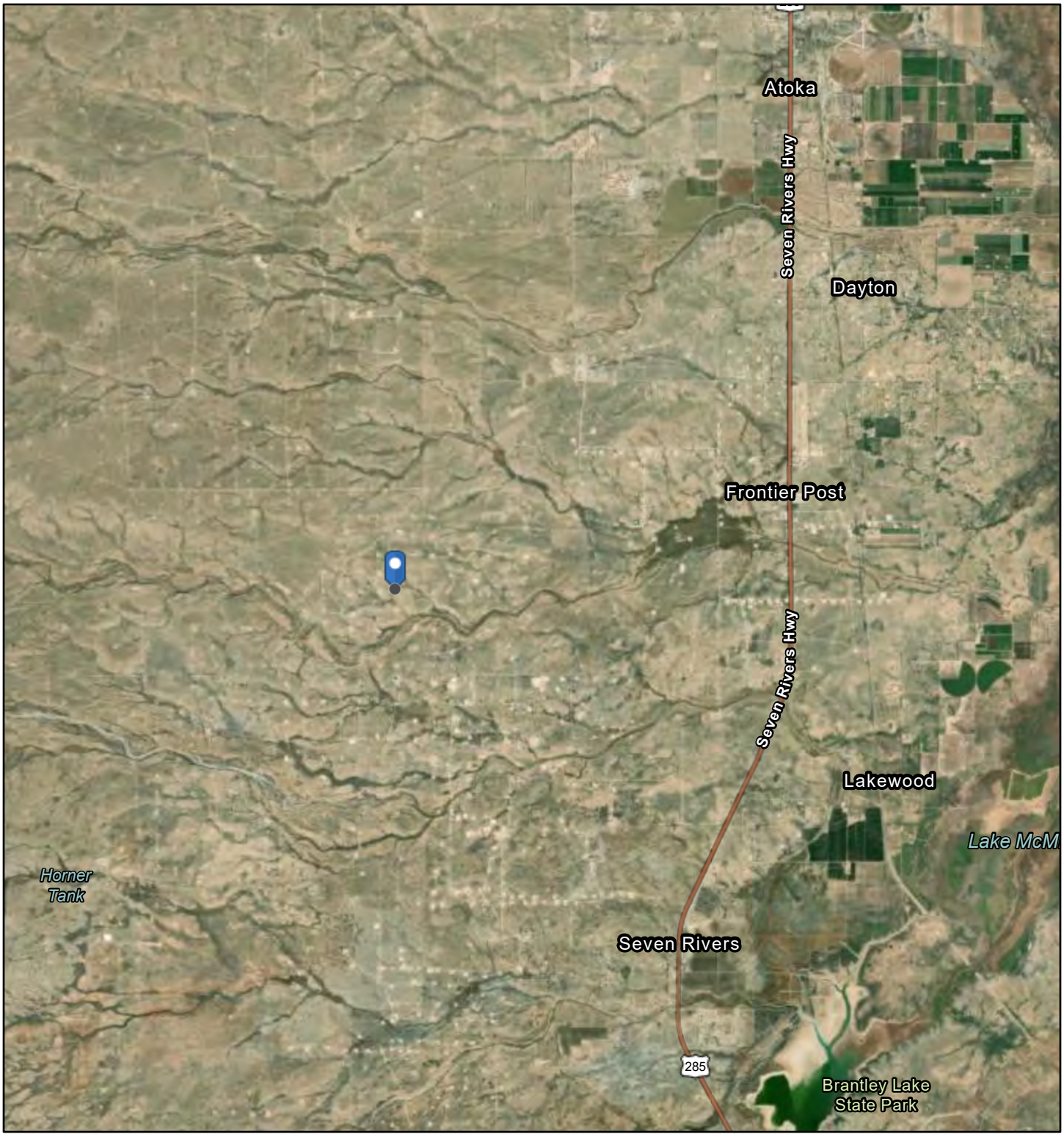
Warren ANW Federal #3



3/15/2022, 1:09:11 PM

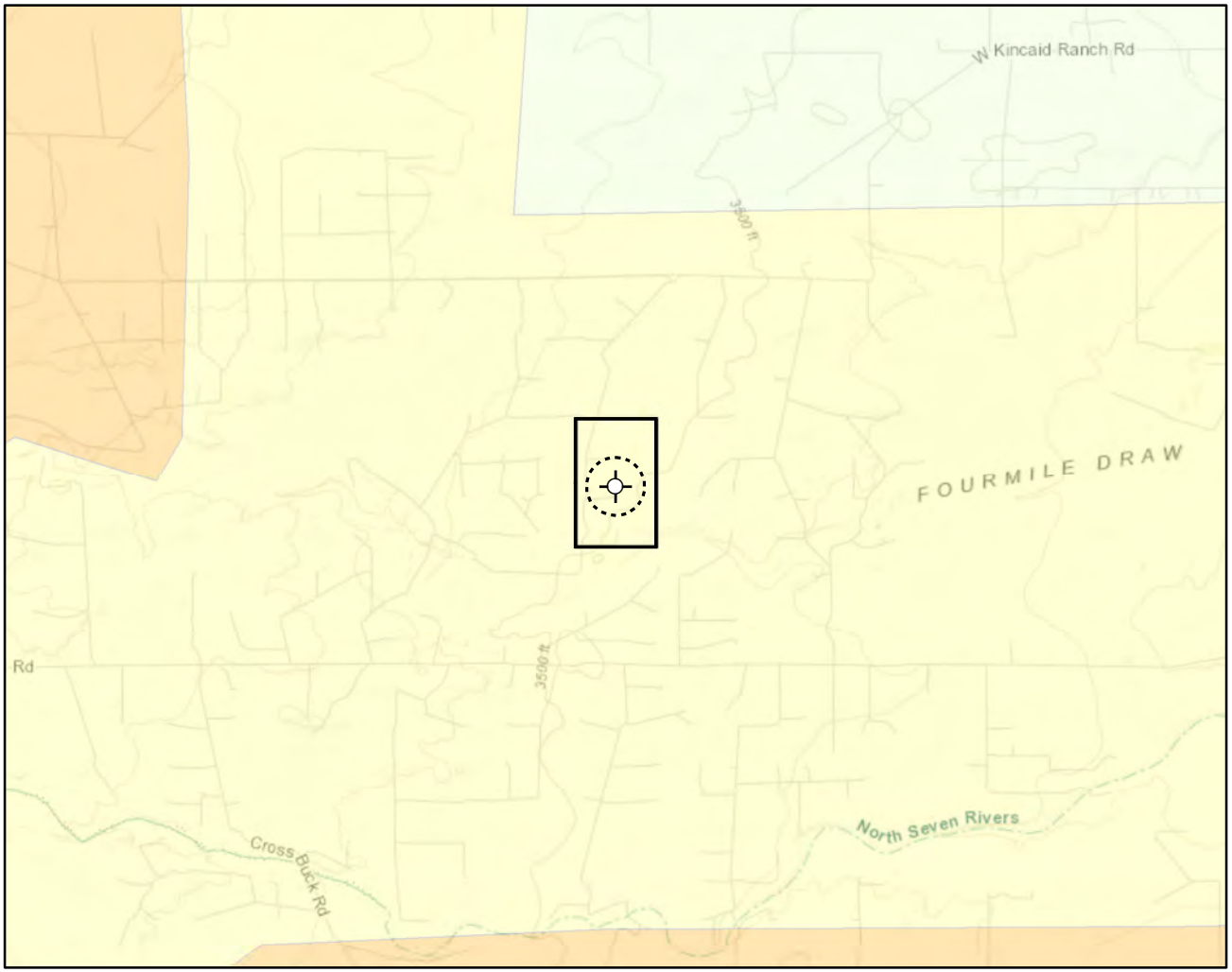
1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Earthstar Geographics, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

EMNRD MMD GIS Coordinator



Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Site Buffer

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.671000, -104.488108

NAD 1983 UTM Zone 13N
Date: Mar 25/22

N

Karst Potential Map
Warren AMW Federal #003

FIGURE:
X

eog resources

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

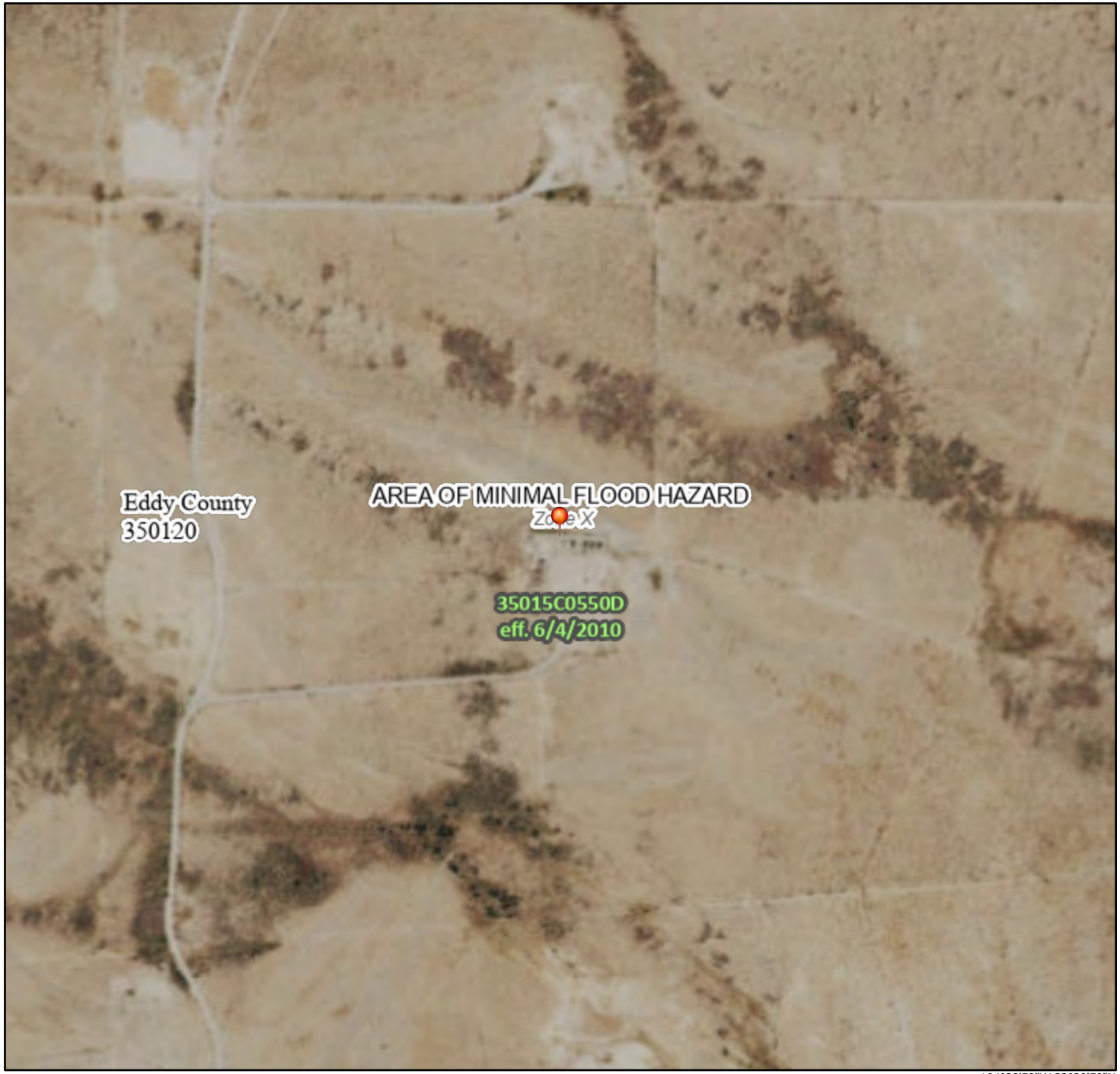
VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\22E-00954\Figure X Karst Potential Map Warren ANW Federal #003.mxd

National Flood Hazard Layer FIRMette

FEMA

104°29'36"W 32°40'29"N



104°28'58"W 32°39'59"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/15/2022 at 12:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Soil Map—Eddy Area, New Mexico

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 17, Sep 12, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UR	Upton-Reagan complex, 0 to 9 percent slopes	2.1	100.0%
Totals for Area of Interest		**2.1**	**100.0%**

Eddy Area, New Mexico

UR—Upton-Reagan complex, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1w65
Elevation: 1,100 to 5,400 feet
Mean annual precipitation: 6 to 15 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Upton and similar soils: 55 percent
Reagan and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Upton

Setting

Landform: Ridges, fans
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 13 inches: gravelly loam
H3 - 13 to 21 inches: cemented
H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Description of Reagan

Setting

Landform: Fan remnants, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Minor Components

Reagan

Percent of map unit: 5 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Pima

Percent of map unit: 5 percent
Ecological site: R042XC017NM - Bottomland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 17, Sep 12, 2021

USDA Natural Resources Conservation Service

Ecological site R042XC025NM
Shallow

Accessed: 03/15/2022

General information

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on knolls, ridges, hillslopes alluvial fans and escarpments. Slopes range fro 0 to 25 percent and average about 7 percent. Direction of slope varies and is usually not significant. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Ridge (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–25%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 180 to 220 days. The last killing frost is late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Because of the shallow soil depth, the vegetation on this site can take advantage of moisture almost anytime it falls. Strong winds that blow from the west and southwest blow from January through June, which accelerates soil drying at a critical time for cool season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	220 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

The soils of this site are shallow to very shallow. Soils are derived from mixed calcareous eolian deposits derived from sedimentary rock. Surface layers are very cobbly loam, very gravelly loam, gravelly loam, cobbly loam, gravelly fine sandy loam or gravelly sandy loam.

There is an indurated caliche layer or limestone bedrock that occurs within 20 inches and averages less than 10 inches. Limestone or caliche layer may be the restrictive layer.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils:

Lozier
Potter
Tencee
Upton
Ector
Kimbrough

Table 4. Representative soil features

Surface texture	(1) Gravelly loam (2) Extremely gravelly loam (3) Extremely cobbly loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow to moderately slow
Soil depth	4–20 in
Surface fragment cover <=3"	15–40%
Available water capacity (0-40in)	1 in
Calcium carbonate equivalent (0-40in)	15–60%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0–1
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	13–42%
Subsurface fragment volume >3" (Depth not specified)	0–1%

Ecological dynamics

Overview:
The Shallow site is associated with and Limestone Hills, Loamy, and Shallow Sandy sites. When associated with Limestone Hills, the Shallow site occurs on the summits, foot slopes and toeslopes of hills. Loamy sites often occur as areas between low elongated hills with rounded crests (Shallow site). When the Shallow Sandy site and Shallow site occur in association, the Shallow Sandy soils occupy the tops of low ridges and the Shallow site soils occur on the steeper sideslopes of the ridge. The historic plant community of the Shallow site has the aspect of a grassland/shrub mix, dominated by grasses, but with shrubs common throughout the site. Black grama is the dominant grass species; creosotebush, mesquite, and catclaw mimosa are common shrubs. Overgrazing and or extended drought can reduce grass cover, effect a change in grass species dominance, and may result in a shrub-dominated state. 1

State and transition model

Plant Communities and Transitional Pathways (diagram)

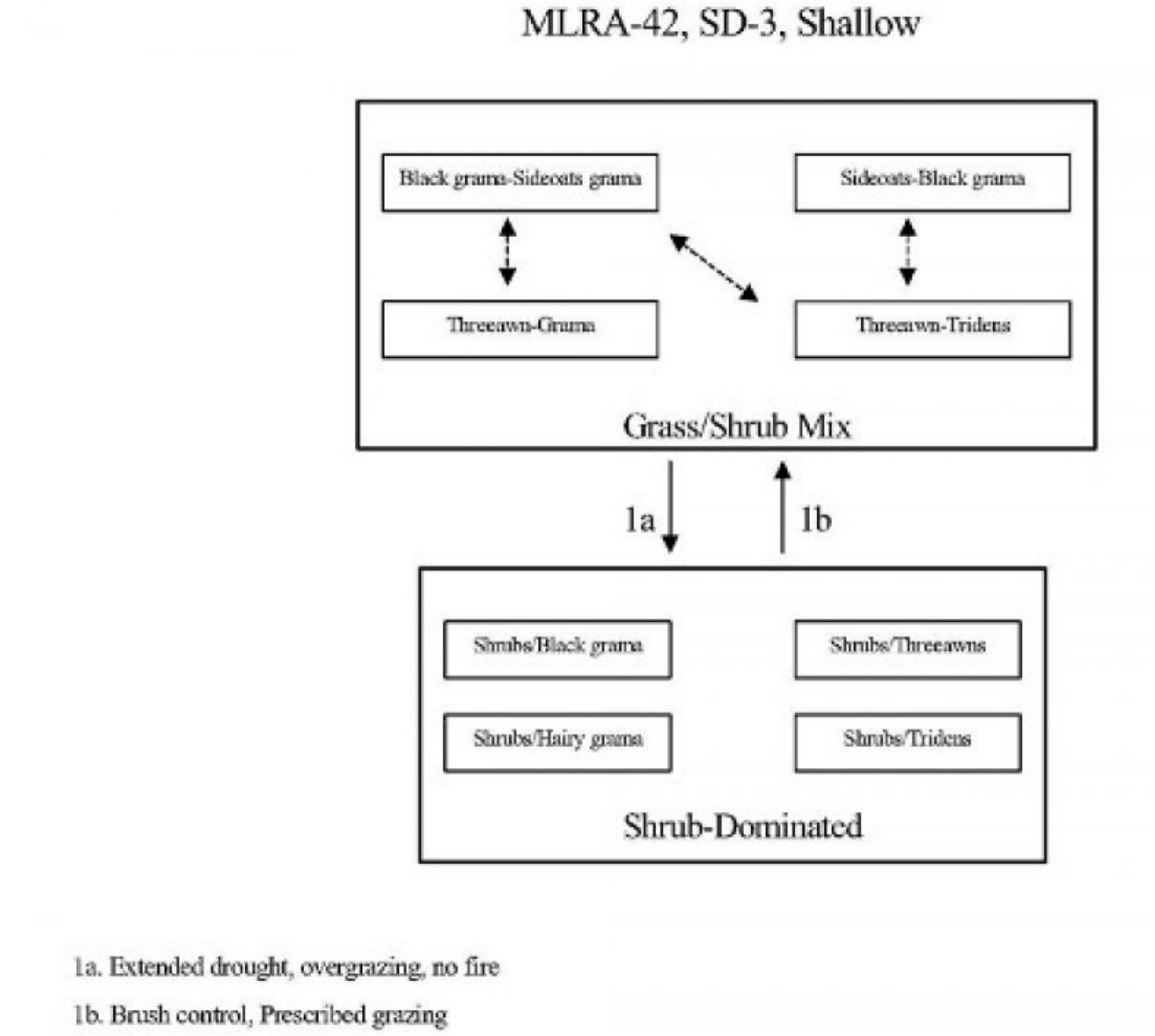


Figure 4.

State 1
Grass/Shrub Mix

Community 1.1
Grass/Shrub Mix

Grassland/Shrub Mix: The historic plant community is dominated by black grama with sideoats grama as the sub-dominant. Blue grama, hairy grama, bush muhly, and sand dropseed also occur in significant amounts. Sideoats grama can occur as the dominant grass with black grama as sub-dominant on the western side of the Land Resource Unit SD-3. This may be due to higher average elevation on the west side. Retrogression within this state due to extended drought or overgrazing will cause a decrease in species such as black grama, sideoats grama, blue grama, and bush muhly. Threeawns may become the dominant grass species due to a decline in more palatable grasses or because of its ability to quickly recover following drought. Continued loss of grass cover and associated increase in amount of bare ground may result in a shrub-dominated state. Decreased fire frequencies may also be

an important component in the cause of this transition.

Diagnosis: Grass cover is fairly uniform, however, surface gravel, cobble, and bare ground make up a large percent of total ground cover, and grass production during unfavorable years may only average 150-175 pounds per acre. Shrubs are common with canopy cover averaging five to ten percent. Evidence of erosion such as rills and gullies are rare, but may occur on slopes greater than eight percent.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	168	352	536
Shrub/Vine	63	131	200
Forb	20	42	64
Total	**251**	**525**	**800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	5-10%
Grass/grasslike foliar cover	10-15%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	5-8%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	40-60%

Figure 6. Plant community growth curve (percent production by month). NM2825, R042XC025NM Shallow HCPC. R042XC025NM Shallow HCPC Warm Season Plant Community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Shrub-Dominated

Community 2.1
Shrub-Dominated

Shrub-Dominated: This state is characterized by an increase in shrubs and a decrease in grass cover relative to grassland/shrub mix. As grass cover decreases shrubs increase, especially creosotebush, catclaw mimosa, whitethorn acacia, and mesquite. Each of these shrub species may become dominant in localized areas or across the site, depending on the spatial variability in soil characteristics and landscape position. Black grama, threeawns, hairy grama, or hairy tridens may be the dominant grass species. Fluffgrass, burrograss and broom snakeweed increase in representation. The Shallow site is resistant to state change, due to the natural rock armor of the soil and a shallow impermeable layer. The amount of rock fragments on the soil surface assist in retarding erosion. On Shallow sites with low slope, the shallow depth to either a petrocalcic layer or limestone bedrock helps to keep water perched and available to shallow rooted grasses for extended periods. 2

Diagnosis: Shrubs are the dominant species, especially creosotebush, catclaw mimosa, whitethorn acacia, or mesquite. Grass cover is variable ranging from patchy with large connected bare areas present to sparse with only a limited amount in shrub inter-spaces.

Transition to Shrub-Dominated (1a) Overgrazing and or extended periods of drought, and suppression of natural fire regimes are thought to cause this transition. As grass cover is lost, soil fertility and available soil moisture decline, due to the reduction of organic matter and decreased infiltration.3 Shrubs have the ability to extract nutrients and water from a greater area of soil than grasses and are better able to utilize limited water. Competition by shrubs for water and nutrients limits grass recruitment and establishment. Fire historically may have played a part in suppressing shrub expansion; fire suppression may therefore facilitate shrub expansion.

Key indicators of approach to transition:
*Decrease or change in composition or distribution of grass cover.
*Increase in size and frequency of bare patches.
*Increase in amount of shrub seedlings.

Transition back to Grassland/Shrub Mix (1b) Brush control is necessary to re-establish grasses. Prescribed grazing will help to ensure proper forage utilization and sustain grass cover. Once the transition is reversed and grass cover is re-established, periodic use of prescribed fire may assist in maintaining the Grassland/Shrub state.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1				105–158	
	black grama	BOER4	*Bouteloua eriopoda*	105–158	–
2				79–105	
	sideoats grama	BOCU	*Bouteloua curtipendula*	79–105	–
3				79–105	
	blue grama	BOGR2	*Bouteloua gracilis*	79–105	–
	hairy grama	BOHI2	*Bouteloua hirsuta*	79–105	–
4				26–53	
	bush muhly	MUPO2	*Muhlenbergia porteri*	26–53	–
5				16–26	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	16–26	–
6				26–53	
	sand dropseed	SPCR	*Sporobolus cryptandrus*	26–53	–
7				16–26	
	hairy woollygrass	ERPI5	*Erioneuron pilosum*	16–26	–
8				5–16	
	ear muhly	MUAR	*Muhlenbergia arenacea*	5–16	–
9				5–16	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	5–16	–
10				5–16	
	low woollygrass	DAPU7	*Dasyochloa pulchella*	5–16	–
11				16–26	
	Grass, perennial	2GP	*Grass, perennial*	16–26	–

Forb					
12				11–26	
	stemless four-nerve daisy	TEACE	*Tetraneuris acaulis var. epunctata*	11–26	–
13				5–16	
	woolly groundsel	PACA15	*Packera cana*	5–16	–
14				5–16	
	globemallow	SPHAE	*Sphaeralcea*	5–16	–
15				5–16	
	bladderpod	LESQU	*Lesquerella*	5–16	–
16				5–16	
	cassia	CASSI	*Cassia*	5–16	–
17				11–26	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	11–26	–
Shrub/Vine					
18				5–16	
	littleleaf sumac	RHMI3	*Rhus microphylla*	5–16	–
19				5–16	
	creosote bush	LATR2	*Larrea tridentata*	5–16	–
20				5–16	
	littleleaf ratany	KRER	*Krameria erecta*	5–16	–
21				5–16	
	javelina bush	COER5	*Condalia ericoides*	5–16	–
22				5–16	
	American tarwort	FLCE	*Flourensia cernua*	5–16	–
23				5–16	
	crown of thorns	KOSP	*Koeberlinia spinosa*	5–16	–
24				11–26	
	honey mesquite	PRGL2	*Prosopis glandulosa*	11–26	–
	honey mesquite	PRGL2	*Prosopis glandulosa*	11–26	–
25				5–16	
	catclaw mimosa	MIACB	*Mimosa aculeaticarpa var. biuncifera*	5–16	–
26				5–16	
	pricklypear	OPUNT	*Opuntia*	5–16	–
27				11–26	
	mariola	PAIN2	*Parthenium incanum*	11–26	–
	mariola	PAIN2	*Parthenium incanum*	11–26	–
28				5–16	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	5–16	–
29				16–26	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	16–26	–

Animal community

This site provides habitats which support a resident animal community that is characterized by desert cottontail, spotted ground squirrel, Merriam's kangaroo rat, cactus mouse, white-throated woodrat, gray fox, spotted skunk, roadrunner, Swainson's hawk, white-necked raven, cactus wren, pyrrhuloxia, lark sparrow, mourning dove, scaled quail, leopard lizard, round-tailed horned lizard, prairie rattlesnake, marbled whiptail, and greater earless lizard. Where associated with limestone hills, mule deer utilize this site.

Where large woody shrubs occur, most resident birds and scissor-tailed flycatcher, morning dove, lark sparrow and Swainson's hawk nest.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations
Soil Series-------- Hydrologic Group
Lozier---------- D
Potter---------- C
Tencee---------- D
Upton---------- C
Kimbrough---------- D
Upton---------- D
Ector---------- D

Recreational uses

This site offers recreation potential for hiking, horseback riding, rock hunting, nature photography and bird hunting and birding. During years of abundant spring moisture, a colorful array of wild flowers is displayed during May and June. A few summer and fall flowers also occur.

Wood products

This site has no potential for wood production.

Other products

This site is suited for grazing by all kinds and classes of livestock during all seasons of the year. Missmanagement will cause a decrease in black grama, sideoats grama, and blue grama, bush muhly and New Mexico feathergrass. A corresponding increase in bare ground will occur. There will also be an increase in muhlys, fluffgrass, creosotebush, javalinabush, catclaw, and mesquite. This site will respond best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index-------- Ac/AUM
100 - 76---------- 3.7 – 4.5
75 – 51---------- 4.3 – 5.5
50 – 26---------- 5.3 – 10.0
25 – 0---------- 10.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico (SD-3). This site has been mapped and

correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

1. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.

2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.

3. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Infiltration, Organic Matter, Rangeland Sheets 5,6. [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

Contributors

David Trujillo
Don Sylvester

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

---

2. **Presence of water flow patterns:**

---

3. **Number and height of erosional pedestals or terracettes:**

---

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

---

5. **Number of gullies and erosion associated with gullies:**

---

6. **Extent of wind scoured, blowouts and/or depositional areas:**

---

7. **Amount of litter movement (describe size and distance expected to travel):**

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

---

14. **Average percent litter cover (%) and depth (in):**

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

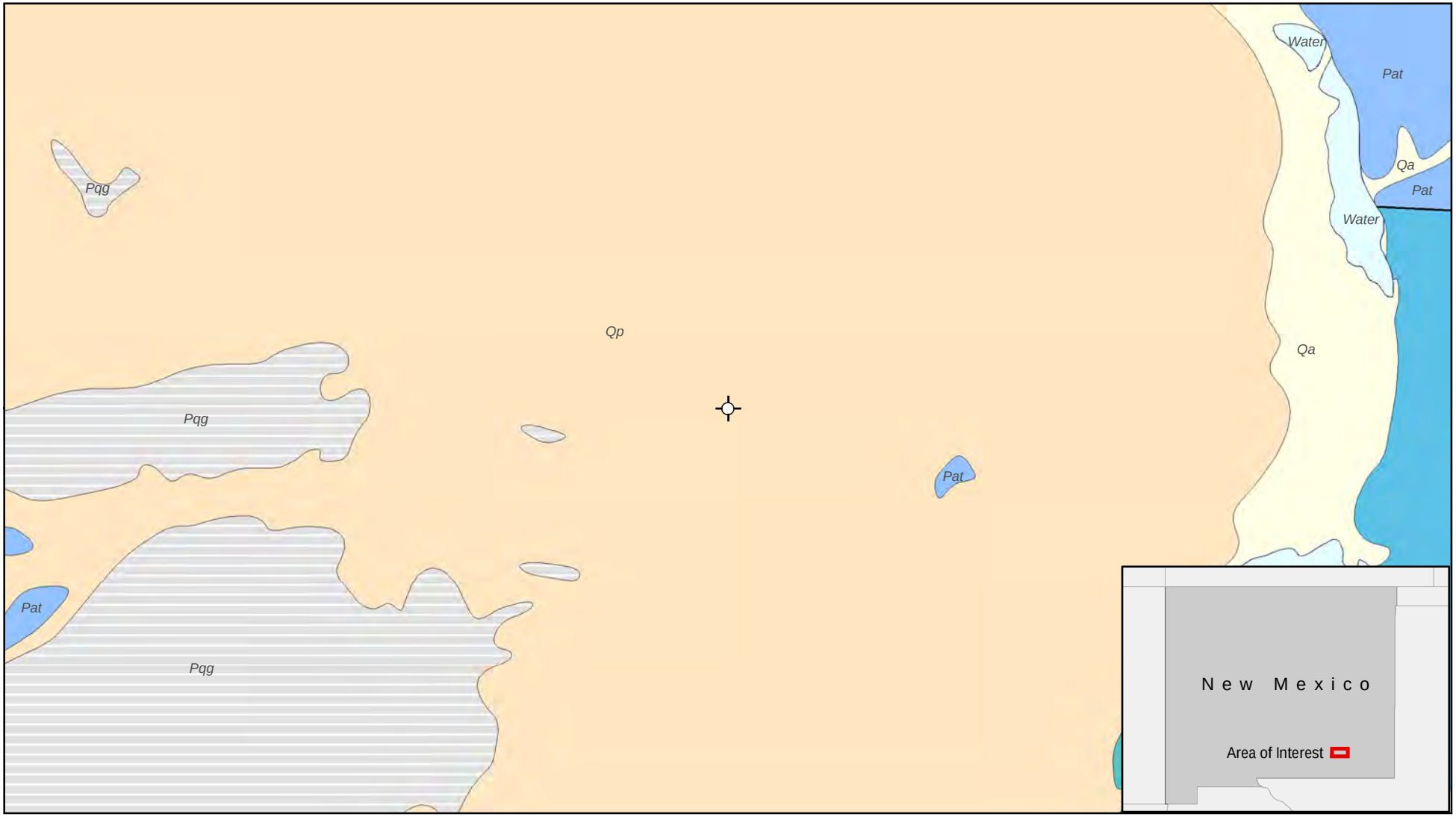
---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if**

their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:

---

17. **Perennial plant reproductive capability:**



Site Location

nomenclature change

Lithologic Contacts

[contact] lithologic

Lithologic Units

Pat

Pqg

Psr

Pty

Qa

Qp

Water

VERTEX

0 1.25 2.5 Miles

Map Center:
Lat/Long: 32.673584, -104.487823

NAD 1983 UTM Zone 13N

Date: Mar 25/22

N

New Mexico Geology
Warren ANW Federal #003

FIGURE:

G

eog resources

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Geology data sourced from New Mexico Bureau of Geology & Mineral Resources, Bureau of Land Management.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECT S\EOG Resources Inc\22E-00954\Figure G Geologic Map Warren ANW Federal #003.mxd

APPENDIX C – Daily Field Reports

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	5/8/2023
Site Location Name:	Warren ANW Federal #3	Report Run Date:	5/10/2023 2:41 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/8/2023 8:00 AM
Departed Site	5/8/2023 3:00 PM

Field Notes

8:09 Arrived on site to continue remediation and confirmation.

10:53 Approximately 50 yards of contaminants hauled off so far.

10:54 4 Elements is currently cleaning out the excavation to excavate the proposed southeast trench and 6” scrape in the middle.

13:09 Collected WES23-25 along the east wall of the excavation. Field screened under strictest criteria.

13:09 Beginning southeast trench and 6” scrape along the south side.

14:39 Collected WES23-26 through WES23-30 in the dog legs. All are under the appropriate criteria’s.

Next Steps & Recommendations

1 Send samples to lab for analysis

Daily Site Visit Report

Site Photos

Viewing Direction: Northeast

Sample area for WES23-25

Viewing Direction: Southwest

Sample area for WES23-26 through WES23-27 and BES23-18

Viewing Direction: West

Excavation

Viewing Direction: South

Excavation

Daily Site Visit Report

Viewing Direction: Southeast

Excavation

Viewing Direction: Northwest

Excavation

Viewing Direction: West

Sample area for WES23-28 through WES23-30 and BES23-19

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Chance Dixon

Signature: 

Signature

APPENDIX D – Notifications

From: Tina Huerta
To: ocd.enviro@emnrd.nm.gov; blm_nm_cfo_spill@blm.gov; Alan & Cheryl
Subject: Warren ANW Federal 3 (nAPP2207561363) Sampling Notification
Date: Friday, November 17, 2023 5:27:31 PM
Attachments: image001.png

Good afternoon,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location. Sorry for the late notification.

Warren ANW Federal 3 Battery
O-9-19S-25E
Eddy County, NM
nAPP2207561363

Sampling will begin at 11:00 a.m. on Tuesday, November 21, 2023, and continue through Wednesday, November 22, 2023.

Thank you,

Tina Huerta
Regulatory Specialist
Direct: 575.748.4168
Cell: 575.703.3121
Email: tina_huerta@eogresources.com

eog resources
Artesia Division

From: Tina Huerta
To: ocd.enviro@emnrd.nm.gov; blm_nm_cfo_spill@blm.gov; Alan & Cheryl
Subject: Warren ANW Federal 3 Battery (nAPP2207561363) Sampling Notification
Date: Thursday, October 19, 2023 5:06:17 PM
Attachments: image001.png

Good afternoon,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Warren ANW Federal 3 Battery
O-9-19S-25E
Eddy County, NM
nAPP2207561363

Sampling will begin at 9:30 a.m. on Wednesday, October 25, 2023, and continue through Friday, October 27, 2023.

Thank you,

Tina Huerta
Regulatory Specialist
Direct: 575.748.4168
Cell: 575.703.3121
Email: tina_huerta@eogresources.com

eog resources
Artesia Division

From: Chase Settle
To: Chance Dixon
Subject: FW: Warren ANW Federal 3 (nAPP2207561363) Sampling Notification
Date: April 27, 2023 7:37:12 AM
Attachments: image001.png

From: Tina Huerta <Tina_Huerta@eogresources.com>
Sent: Thursday, April 27, 2023 6:54 AM
To: ocd.enviro@emnrd.nm.gov; Alan & Cheryl <ahowell@pvtn.net>; blm_nm_cfo_spill@blm.gov; Austin Weyant <austin@atkinseng.com>
Cc: Andrea Felix <Andrea_Felix@eogresources.com>; Katie Jamison <Katie_Jamison@eogresources.com>; Michael Yemm <Michael_Yemm@eogresources.com>; Terrence Gant <Terry_Gant@eogresources.com>
Subject: Warren ANW Federal 3 (nAPP2207561363) Sampling Notification

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Warren ANW Federal 3
O-9-19S-25E
Eddy County, NM
nAPP2207561363

Sampling will begin at 8:30 a.m. on Saturday, April 29, 2023, and continue through Friday, May 5, 2023.

Thank you,

Tina Huerta
Regulatory Specialist
Direct: 575.748.4168
Cell: 575.703.3121
Email: tina_huerta@eogresources.com

eog resources
Artesia Division

From: Chase Settle
To: Chance Dixon
Subject: FW: Warren ANW Federal 3 (nAPP2207561363) Sampling Notification
Date: May 4, 2023 1:54:38 PM
Attachments: image001.png

From: Tina Huerta <Tina_Huerta@eogresources.com>
Sent: Thursday, May 4, 2023 4:55 AM
To: ocd.enviro@emnrd.nm.gov; blm_nm_cfo_spill@blm.gov; Alan & Cheryl <ahowell@pvtn.net>; Austin Weyant <austin@atkinseng.com>
Cc: Katie Jamison <Katie_Jamison@eogresources.com>; Michael Yemm <Michael_Yemm@eogresources.com>; Terrence Gant <Terry_Gant@eogresources.com>
Subject: Warren ANW Federal 3 (nAPP2207561363) Sampling Notification

Good morning,

EOG Resources, Inc. respectfully submits notification (2) business days prior to conducting sampling on the following location.

Warren ANW Federal 3
O-9-19S-25E
Eddy County, NM
nAPP2207561363

Sampling will begin at 8:00 a.m. on Monday, May 8, 2023, and continue through Saturday, May 13, 2023.

Thank you,

Tina Huerta
Regulatory Specialist
Direct: 575.748.4168
Cell: 575.703.3121
Email: tina_huerta@eogresources.com

eog resources

Artesia Division

APPENDIX E – Laboratory Data Report(s) and Chain of Custody Forms

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 08, 2023

Chance Dixon

EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Warren ANW Fed 3 OrderNo.: 2305040

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/2/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-01 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:00:00 AM
Lab ID: 2305040-001 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	3800	150		mg/Kg	50	5/4/2023 10:21:02 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/3/2023 4:08:23 PM	74728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/3/2023 4:08:23 PM	74728
Surr: DNOP	77.0	69-147		%Rec	1	5/3/2023 4:08:23 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 12:01:48 PM	74726
Surr: BFB	66.5	15-244		%Rec	1	5/4/2023 12:01:48 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.025		mg/Kg	1	5/4/2023 12:01:48 PM	74726
Toluene	ND	0.050		mg/Kg	1	5/4/2023 12:01:48 PM	74726
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 12:01:48 PM	74726
Xylenes, Total	ND	0.10		mg/Kg	1	5/4/2023 12:01:48 PM	74726
Surr: 4-Bromofluorobenzene	86.5	39.1-146		%Rec	1	5/4/2023 12:01:48 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-02 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:05:00 AM
Lab ID: 2305040-002 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	3000	150		mg/Kg	50	5/4/2023 10:33:23 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/3/2023 4:32:13 PM	74728
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 4:32:13 PM	74728
Surr: DNOP	73.6	69-147		%Rec	1	5/3/2023 4:32:13 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 12:25:30 PM	74726
Surr: BFB	69.8	15-244		%Rec	1	5/4/2023 12:25:30 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.024		mg/Kg	1	5/4/2023 12:25:30 PM	74726
Toluene	ND	0.048		mg/Kg	1	5/4/2023 12:25:30 PM	74726
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 12:25:30 PM	74726
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 12:25:30 PM	74726
Surr: 4-Bromofluorobenzene	88.4	39.1-146		%Rec	1	5/4/2023 12:25:30 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-03 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:10:00 AM
Lab ID: 2305040-003 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	7800	300		mg/Kg	100	5/4/2023 10:45:44 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	150	9.1		mg/Kg	1	5/4/2023 12:15:12 AM	74728
Motor Oil Range Organics (MRO)	150	46		mg/Kg	1	5/4/2023 12:15:12 AM	74728
Surr: DNOP	77.2	69-147		%Rec	1	5/4/2023 12:15:12 AM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 12:48:59 PM	74726
Surr: BFB	68.1	15-244		%Rec	1	5/4/2023 12:48:59 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.024		mg/Kg	1	5/4/2023 12:48:59 PM	74726
Toluene	ND	0.048		mg/Kg	1	5/4/2023 12:48:59 PM	74726
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 12:48:59 PM	74726
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 12:48:59 PM	74726
Surr: 4-Bromofluorobenzene	87.7	39.1-146		%Rec	1	5/4/2023 12:48:59 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-04 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:15:00 AM
Lab ID: 2305040-004 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	7500	300		mg/Kg	100	5/4/2023 10:58:04 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/3/2023 4:56:00 PM	74728
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 4:56:00 PM	74728
Surr: DNOP	74.6	69-147		%Rec	1	5/3/2023 4:56:00 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 1:12:22 PM	74726
Surr: BFB	57.9	15-244		%Rec	1	5/4/2023 1:12:22 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.024		mg/Kg	1	5/4/2023 1:12:22 PM	74726
Toluene	ND	0.048		mg/Kg	1	5/4/2023 1:12:22 PM	74726
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 1:12:22 PM	74726
Xylenes, Total	ND	0.095		mg/Kg	1	5/4/2023 1:12:22 PM	74726
Surr: 4-Bromofluorobenzene	86.0	39.1-146		%Rec	1	5/4/2023 1:12:22 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-05 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:20:00 AM
Lab ID: 2305040-005 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	7800	300		mg/Kg	100	5/4/2023 11:10:24 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/3/2023 5:20:05 PM	74728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/3/2023 5:20:05 PM	74728
Surr: DNOP	76.0	69-147		%Rec	1	5/3/2023 5:20:05 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 1:35:44 PM	74726
Surr: BFB	75.2	15-244		%Rec	1	5/4/2023 1:35:44 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.024		mg/Kg	1	5/4/2023 1:35:44 PM	74726
Toluene	ND	0.049		mg/Kg	1	5/4/2023 1:35:44 PM	74726
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 1:35:44 PM	74726
Xylenes, Total	ND	0.098		mg/Kg	1	5/4/2023 1:35:44 PM	74726
Surr: 4-Bromofluorobenzene	88.1	39.1-146		%Rec	1	5/4/2023 1:35:44 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-06 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:25:00 AM
Lab ID: 2305040-006 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	4800	150		mg/Kg	50	5/4/2023 11:22:44 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	32	9.9		mg/Kg	1	5/3/2023 5:44:16 PM	74728
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 5:44:16 PM	74728
Surr: DNOP	77.9	69-147		%Rec	1	5/3/2023 5:44:16 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 1:59:12 PM	74726
Surr: BFB	54.5	15-244		%Rec	1	5/4/2023 1:59:12 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.025		mg/Kg	1	5/4/2023 1:59:12 PM	74726
Toluene	ND	0.049		mg/Kg	1	5/4/2023 1:59:12 PM	74726
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 1:59:12 PM	74726
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 1:59:12 PM	74726
Surr: 4-Bromofluorobenzene	82.8	39.1-146		%Rec	1	5/4/2023 1:59:12 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305040**
Date Reported: **5/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS23-07 4ft
Project: Warren ANW Fed 3
Collection Date: 4/29/2023 10:30:00 AM
Lab ID: 2305040-007 **Matrix:** SOIL **Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SNS**	
Chloride	3500	150		mg/Kg	50	5/4/2023 11:35:05 AM	74747
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/3/2023 6:08:35 PM	74728
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/3/2023 6:08:35 PM	74728
Surr: DNOP	73.4	69-147		%Rec	1	5/3/2023 6:08:35 PM	74728
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 2:22:35 PM	74726
Surr: BFB	68.4	15-244		%Rec	1	5/4/2023 2:22:35 PM	74726
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.025		mg/Kg	1	5/4/2023 2:22:35 PM	74726
Toluene	ND	0.049		mg/Kg	1	5/4/2023 2:22:35 PM	74726
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 2:22:35 PM	74726
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 2:22:35 PM	74726
Surr: 4-Bromofluorobenzene	87.3	39.1-146		%Rec	1	5/4/2023 2:22:35 PM	74726

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305040**

08-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **MB-74747**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74747**	RunNo: **96522**
Prep Date: **5/3/2023**	Analysis Date: **5/3/2023**	SeqNo: **3498176** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	4.5								

Sample ID: **LCS-74747**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74747**	RunNo: **96522**
Prep Date: **5/3/2023**	Analysis Date: **5/3/2023**	SeqNo: **3498177** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	4.5	15.00	0	92.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305040**

08-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **MB-74728**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74728**	RunNo: **96501**
Prep Date: **5/3/2023**	Analysis Date: **5/3/2023**	SeqNo: **3496982** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.5		10.00		75.2	69	147			

Sample ID: **LCS-74728**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74728**	RunNo: **96501**
Prep Date: **5/3/2023**	Analysis Date: **5/3/2023**	SeqNo: **3496983** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.3	61.9	130			
Surr: DNOP	3.6		5.000		72.0	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305040**

08-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **lcs-74726**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74726**	RunNo: **96521**
Prep Date: **5/3/2023**	Analysis Date: **5/4/2023**	SeqNo: **3498141** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	70	130			
Surr: BFB	4700		1000		468	15	244			S

Sample ID: **mb-74726**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74726**	RunNo: **96521**
Prep Date: **5/3/2023**	Analysis Date: **5/4/2023**	SeqNo: **3498142** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	600		1000		60.5	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305040**

08-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **LCS-74726**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74726**	RunNo: **96521**
Prep Date: **5/3/2023**	Analysis Date: **5/4/2023**	SeqNo: **3498152** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.2	70	130			
Toluene	0.85	0.050	1.000	0	85.3	70	130			
Ethylbenzene	0.85	0.050	1.000	0	85.4	70	130			
Xylenes, Total	2.6	0.10	3.000	0	86.2	70	130			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.9	39.1	146			

Sample ID: **mb-74726**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74726**	RunNo: **96521**
Prep Date: **5/3/2023**	Analysis Date: **5/4/2023**	SeqNo: **3498154** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.5	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG | Work Order Number: 2305040 | RcptNo: 1

Received By: **Desiree Dominguez** 5/2/2023 5:20:00 PM DD

Completed By: **Desiree Dominguez** 5/2/2023 5:19:40 PM DD

Reviewed By: JA 5-3-23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JA 5/3/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Client information not complete on COC. - DAD 5/2/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Not Present	Yogi		

Chain-of-Custody Record

Client: EOG Resources

Mailing Address: On file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 48 Hr

Project Name: Warren ANW Fed 3

Project #: 22E-00954

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☑ Yes ☐ No

# of Coolers: 1 Yogi

Cooler Temp(including CF): 0.4 +0.1 = 0.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305040
4/29	10:00	Soil	BS23-01 4ft	4oz jar	ice	-001
	10:05		BS23-02 4ft			-002
	10:10		BS23-03 4ft			-003
	10:15		BS23-04 4ft			-004
	10:20		BS23-05 4ft			-005
	10:25		BS23-06 4ft			-006
	10:30		BS23-07 4ft			-007

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
4/29	17:00				5/1/23	1030
5/1/23	1900			courier	5/2/23	17:20

Remarks:
CC: Chance Dixon & Fernando Rodriguez

Direct Bill to EOG

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 09, 2023

Chance Dixon

EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Warren ANW Fed 3 OrderNo.: 2305198

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/4/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2305198**
Date Reported: **5/9/2023**

CLIENT: EOG
Client Sample ID: WS23-11 4ft
Project: Warren ANW Fed 3
Collection Date: 5/2/2023 1:00:00 PM
Lab ID: 2305198-001 **Matrix:** SOIL **Received Date:** 5/4/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JTT**	
Chloride	200	60		mg/Kg	20	5/5/2023 7:50:26 PM	74791
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/5/2023 11:07:43 AM	74761
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/5/2023 11:07:43 AM	74761
Surr: DNOP	73.6	69-147		%Rec	1	5/5/2023 11:07:43 AM	74761
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 9:45:00 PM	74760
Surr: BFB	84.7	15-244		%Rec	1	5/5/2023 9:45:00 PM	74760
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.024		mg/Kg	1	5/5/2023 9:45:00 PM	74760
Toluene	ND	0.047		mg/Kg	1	5/5/2023 9:45:00 PM	74760
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 9:45:00 PM	74760
Xylenes, Total	ND	0.095		mg/Kg	1	5/5/2023 9:45:00 PM	74760
Surr: 4-Bromofluorobenzene	84.1	39.1-146		%Rec	1	5/5/2023 9:45:00 PM	74760

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305198**
Date Reported: **5/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS23-12 4ft
Project: Warren ANW Fed 3
Collection Date: 5/2/2023 1:05:00 PM
Lab ID: 2305198-002 **Matrix:** SOIL **Received Date:** 5/4/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JTT**	
Chloride	210	59		mg/Kg	20	5/5/2023 8:27:27 PM	74791
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/5/2023 11:31:22 AM	74761
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/5/2023 11:31:22 AM	74761
Surr: DNOP	72.9	69-147		%Rec	1	5/5/2023 11:31:22 AM	74761
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 10:07:00 PM	74760
Surr: BFB	82.5	15-244		%Rec	1	5/5/2023 10:07:00 PM	74760
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.024		mg/Kg	1	5/5/2023 10:07:00 PM	74760
Toluene	ND	0.048		mg/Kg	1	5/5/2023 10:07:00 PM	74760
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 10:07:00 PM	74760
Xylenes, Total	ND	0.095		mg/Kg	1	5/5/2023 10:07:00 PM	74760
Surr: 4-Bromofluorobenzene	84.2	39.1-146		%Rec	1	5/5/2023 10:07:00 PM	74760

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305198**
Date Reported: **5/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS23-13 4ft
Project: Warren ANW Fed 3
Collection Date: 5/2/2023 1:10:00 PM
Lab ID: 2305198-003 **Matrix:** SOIL **Received Date:** 5/4/2023 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JTT**	
Chloride	210	60		mg/Kg	20	5/5/2023 8:39:49 PM	74791
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/5/2023 11:55:01 AM	74761
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/5/2023 11:55:01 AM	74761
Surr: DNOP	74.7	69-147		%Rec	1	5/5/2023 11:55:01 AM	74761
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 10:28:00 PM	74760
Surr: BFB	85.2	15-244		%Rec	1	5/5/2023 10:28:00 PM	74760
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.025		mg/Kg	1	5/5/2023 10:28:00 PM	74760
Toluene	ND	0.049		mg/Kg	1	5/5/2023 10:28:00 PM	74760
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 10:28:00 PM	74760
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2023 10:28:00 PM	74760
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/5/2023 10:28:00 PM	74760

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305198**

09-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **MB-74791**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74791**	RunNo: **96564**
Prep Date: **5/5/2023**	Analysis Date: **5/5/2023**	SeqNo: **3500979** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74791**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74791**	RunNo: **96564**
Prep Date: **5/5/2023**	Analysis Date: **5/5/2023**	SeqNo: **3500980** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305198**

09-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **MB-74761**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74761**	RunNo: **96558**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3500730** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.1		10.00		71.3	69	147			

Sample ID: **LCS-74761**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74761**	RunNo: **96558**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3500731** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.8	61.9	130			
Surr: DNOP	4.1		5.000		82.8	69	147			

Sample ID: **MB-74754**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74754**	RunNo: **96558**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3500732** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.3		10.00		73.0	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305198**

09-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **lcs-74760**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74760**	RunNo: **96577**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3501760** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.1	70	130			
Surr: BFB	1900		1000		187	15	244			

Sample ID: **mb-74760**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74760**	RunNo: **96577**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3501807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.6	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305198**

09-May-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **lcs-74760**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74760**	RunNo: **96577**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3501783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.8	70	130			
Toluene	0.85	0.050	1.000	0	85.3	70	130			
Ethylbenzene	0.84	0.050	1.000	0	84.2	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.3	70	130			
Surr: 4-Bromofluorobenzene	0.84		1.000		84.4	39.1	146			

Sample ID: **mb-74760**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74760**	RunNo: **96577**
Prep Date: **5/4/2023**	Analysis Date: **5/5/2023**	SeqNo: **3501806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.6	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG | Work Order Number: 2305198 | RcptNo: 1

Received By: **Tracy Casarrubias** 5/4/2023 7:20:00 AM

Completed By: **Tracy Casarrubias** 5/4/2023 7:56:46 AM

Reviewed By: MB 5/4/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: TMC 5/4/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Phone number, mailing address, and Email are missing on COC- TMC 5/4/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes	Yogi		

Chain-of-Custody Record

Client: EOG Resources (Vertex)

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 48 Hr

Project Name: Warren ANW Fed 3

Project #: 225-00954

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No Yoai

# of Coolers: 1

Cooler Temp(including CF): 5.0+0.1=5.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305198
5/2	13:00	Soil	WS23-11 4Ft	4oz jar	Ice	001
5/2	13:05	Soil	WS23-12 4Ft	4oz jar	Ice	002
5/2	13:10	Soil	WS23-13 4Ft	4oz jar	Ice	003

Analysis Request

(BTEX) MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
✓	✓					✓			
✓	✓					✓			
✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/2	18:00				5/3/23	930
5/3/23	1900			courier	5/4/23	7:20

Remarks:
CC: Chance Dixon & Fernando Rodriguez

Direct Bill to EOG

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 12, 2023

Chance Dixon

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Warren ANW Fed 3 OrderNo.: 2305400

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 14 sample(s) on 5/9/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-08 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:00:00 AM
Lab ID: 2305400-001 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/9/2023 9:58:04 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/9/2023 9:58:04 AM
Surr: DNOP	101	69-147		%Rec	1	5/9/2023 9:58:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/9/2023 12:02:00 PM
Surr: BFB	85.1	15-244		%Rec	1	5/9/2023 12:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.017		mg/Kg	1	5/9/2023 12:02:00 PM
Toluene	ND	0.034		mg/Kg	1	5/9/2023 12:02:00 PM
Ethylbenzene	ND	0.034		mg/Kg	1	5/9/2023 12:02:00 PM
Xylenes, Total	ND	0.068		mg/Kg	1	5/9/2023 12:02:00 PM
Surr: 4-Bromofluorobenzene	82.6	39.1-146		%Rec	1	5/9/2023 12:02:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	770	60		mg/Kg	20	5/9/2023 10:39:03 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-09 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:05:00 AM
Lab ID: 2305400-002 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/9/2023 10:08:39 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2023 10:08:39 AM
Surr: DNOP	97.3	69-147		%Rec	1	5/9/2023 10:08:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	5/9/2023 12:24:00 PM
Surr: BFB	84.4	15-244		%Rec	1	5/9/2023 12:24:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.022		mg/Kg	1	5/9/2023 12:24:00 PM
Toluene	ND	0.044		mg/Kg	1	5/9/2023 12:24:00 PM
Ethylbenzene	ND	0.044		mg/Kg	1	5/9/2023 12:24:00 PM
Xylenes, Total	ND	0.087		mg/Kg	1	5/9/2023 12:24:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/9/2023 12:24:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2800	150		mg/Kg	50	5/9/2023 1:57:37 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-10 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:10:00 AM
Lab ID: 2305400-003 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/9/2023 10:19:13 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/9/2023 10:19:13 AM
Surr: DNOP	94.1	69-147		%Rec	1	5/9/2023 10:19:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	5/9/2023 12:46:00 PM
Surr: BFB	85.9	15-244		%Rec	1	5/9/2023 12:46:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.018		mg/Kg	1	5/9/2023 12:46:00 PM
Toluene	ND	0.036		mg/Kg	1	5/9/2023 12:46:00 PM
Ethylbenzene	ND	0.036		mg/Kg	1	5/9/2023 12:46:00 PM
Xylenes, Total	ND	0.071		mg/Kg	1	5/9/2023 12:46:00 PM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/9/2023 12:46:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	5000	300		mg/Kg	100	5/9/2023 2:10:01 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-11 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:15:00 AM
Lab ID: 2305400-004 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/9/2023 10:29:46 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/9/2023 10:29:46 AM
Surr: DNOP	87.2	69-147		%Rec	1	5/9/2023 10:29:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	5/9/2023 1:07:00 PM
Surr: BFB	87.7	15-244		%Rec	1	5/9/2023 1:07:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.021		mg/Kg	1	5/9/2023 1:07:00 PM
Toluene	ND	0.042		mg/Kg	1	5/9/2023 1:07:00 PM
Ethylbenzene	ND	0.042		mg/Kg	1	5/9/2023 1:07:00 PM
Xylenes, Total	ND	0.085		mg/Kg	1	5/9/2023 1:07:00 PM
Surr: 4-Bromofluorobenzene	85.3	39.1-146		%Rec	1	5/9/2023 1:07:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2100	150		mg/Kg	50	5/9/2023 2:22:26 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-12 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:20:00 AM
Lab ID: 2305400-005 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	53	10		mg/Kg	1	5/9/2023 10:40:21 AM
Motor Oil Range Organics (MRO)	75	50		mg/Kg	1	5/9/2023 10:40:21 AM
Surr: DNOP	91.9	69-147		%Rec	1	5/9/2023 10:40:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	5/9/2023 1:29:00 PM
Surr: BFB	85.4	15-244		%Rec	1	5/9/2023 1:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.019		mg/Kg	1	5/9/2023 1:29:00 PM
Toluene	ND	0.037		mg/Kg	1	5/9/2023 1:29:00 PM
Ethylbenzene	ND	0.037		mg/Kg	1	5/9/2023 1:29:00 PM
Xylenes, Total	ND	0.075		mg/Kg	1	5/9/2023 1:29:00 PM
Surr: 4-Bromofluorobenzene	82.9	39.1-146		%Rec	1	5/9/2023 1:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2500	150		mg/Kg	50	5/9/2023 2:34:50 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-13 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:25:00 AM
Lab ID: 2305400-006 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/9/2023 11:02:35 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/9/2023 11:02:35 AM
Surr: DNOP	89.7	69-147		%Rec	1	5/9/2023 11:02:35 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	5/9/2023 1:50:00 PM
Surr: BFB	83.0	15-244		%Rec	1	5/9/2023 1:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.016		mg/Kg	1	5/9/2023 1:50:00 PM
Toluene	ND	0.032		mg/Kg	1	5/9/2023 1:50:00 PM
Ethylbenzene	ND	0.032		mg/Kg	1	5/9/2023 1:50:00 PM
Xylenes, Total	ND	0.065		mg/Kg	1	5/9/2023 1:50:00 PM
Surr: 4-Bromofluorobenzene	83.1	39.1-146		%Rec	1	5/9/2023 1:50:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/9/2023 11:41:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-14 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:30:00 AM
Lab ID: 2305400-007 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/9/2023 11:13:11 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/9/2023 11:13:11 AM
Surr: DNOP	89.7	69-147		%Rec	1	5/9/2023 11:13:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	5/9/2023 2:12:00 PM
Surr: BFB	81.6	15-244		%Rec	1	5/9/2023 2:12:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.019		mg/Kg	1	5/9/2023 2:12:00 PM
Toluene	ND	0.037		mg/Kg	1	5/9/2023 2:12:00 PM
Ethylbenzene	ND	0.037		mg/Kg	1	5/9/2023 2:12:00 PM
Xylenes, Total	ND	0.074		mg/Kg	1	5/9/2023 2:12:00 PM
Surr: 4-Bromofluorobenzene	83.7	39.1-146		%Rec	1	5/9/2023 2:12:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	240	60		mg/Kg	20	5/9/2023 11:53:31 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-15 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:35:00 AM
Lab ID: 2305400-008 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/9/2023 11:23:48 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/9/2023 11:23:48 AM
Surr: DNOP	86.8	69-147		%Rec	1	5/9/2023 11:23:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	5/9/2023 2:33:00 PM
Surr: BFB	83.3	15-244		%Rec	1	5/9/2023 2:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/9/2023 2:33:00 PM
Toluene	ND	0.051		mg/Kg	1	5/9/2023 2:33:00 PM
Ethylbenzene	ND	0.051		mg/Kg	1	5/9/2023 2:33:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/9/2023 2:33:00 PM
Surr: 4-Bromofluorobenzene	81.4	39.1-146		%Rec	1	5/9/2023 2:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	200	60		mg/Kg	20	5/9/2023 12:05:55 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-16 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:40:00 AM
Lab ID: 2305400-009 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/9/2023 11:34:28 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2023 11:34:28 AM
Surr: DNOP	94.2	69-147		%Rec	1	5/9/2023 11:34:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	5/9/2023 2:55:00 PM
Surr: BFB	85.6	15-244		%Rec	1	5/9/2023 2:55:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.022		mg/Kg	1	5/9/2023 2:55:00 PM
Toluene	ND	0.043		mg/Kg	1	5/9/2023 2:55:00 PM
Ethylbenzene	ND	0.043		mg/Kg	1	5/9/2023 2:55:00 PM
Xylenes, Total	ND	0.086		mg/Kg	1	5/9/2023 2:55:00 PM
Surr: 4-Bromofluorobenzene	84.9	39.1-146		%Rec	1	5/9/2023 2:55:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	390	60		mg/Kg	20	5/9/2023 12:43:09 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-17 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:45:00 AM
Lab ID: 2305400-010 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	17	9.9		mg/Kg	1	5/9/2023 11:45:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/9/2023 11:45:07 AM
Surr: DNOP	90.2	69-147		%Rec	1	5/9/2023 11:45:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/9/2023 12:20:23 PM
Surr: BFB	62.1	15-244		%Rec	1	5/9/2023 12:20:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.019		mg/Kg	1	5/9/2023 12:20:23 PM
Toluene	ND	0.038		mg/Kg	1	5/9/2023 12:20:23 PM
Ethylbenzene	ND	0.038		mg/Kg	1	5/9/2023 12:20:23 PM
Xylenes, Total	ND	0.076		mg/Kg	1	5/9/2023 12:20:23 PM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	5/9/2023 12:20:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	400	60		mg/Kg	20	5/9/2023 12:55:33 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WS23-20 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:50:00 AM
Lab ID: 2305400-011 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/9/2023 11:55:46 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2023 11:55:46 AM
Surr: DNOP	96.4	69-147		%Rec	1	5/9/2023 11:55:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/9/2023 12:43:47 PM
Surr: BFB	63.9	15-244		%Rec	1	5/9/2023 12:43:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.019		mg/Kg	1	5/9/2023 12:43:47 PM
Toluene	ND	0.038		mg/Kg	1	5/9/2023 12:43:47 PM
Ethylbenzene	ND	0.038		mg/Kg	1	5/9/2023 12:43:47 PM
Xylenes, Total	ND	0.076		mg/Kg	1	5/9/2023 12:43:47 PM
Surr: 4-Bromofluorobenzene	84.8	39.1-146		%Rec	1	5/9/2023 12:43:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	120	60		mg/Kg	20	5/9/2023 1:07:58 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WS23-21 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 9:55:00 AM
Lab ID: 2305400-012 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/9/2023 12:06:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/9/2023 12:06:47 PM
Surr: DNOP	93.4	69-147		%Rec	1	5/9/2023 12:06:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	5/9/2023 1:07:15 PM
Surr: BFB	77.6	15-244		%Rec	1	5/9/2023 1:07:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.018		mg/Kg	1	5/9/2023 1:07:15 PM
Toluene	ND	0.036		mg/Kg	1	5/9/2023 1:07:15 PM
Ethylbenzene	ND	0.036		mg/Kg	1	5/9/2023 1:07:15 PM
Xylenes, Total	ND	0.072		mg/Kg	1	5/9/2023 1:07:15 PM
Surr: 4-Bromofluorobenzene	86.2	39.1-146		%Rec	1	5/9/2023 1:07:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	230	60		mg/Kg	20	5/9/2023 1:20:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WS23-22 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 10:00:00 AM
Lab ID: 2305400-013 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/9/2023 12:17:28 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/9/2023 12:17:28 PM
Surr: DNOP	94.4	69-147		%Rec	1	5/9/2023 12:17:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	5/9/2023 1:30:44 PM
Surr: BFB	75.9	15-244		%Rec	1	5/9/2023 1:30:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.022		mg/Kg	1	5/9/2023 1:30:44 PM
Toluene	ND	0.043		mg/Kg	1	5/9/2023 1:30:44 PM
Ethylbenzene	ND	0.043		mg/Kg	1	5/9/2023 1:30:44 PM
Xylenes, Total	ND	0.086		mg/Kg	1	5/9/2023 1:30:44 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	5/9/2023 1:30:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	240	60		mg/Kg	20	5/9/2023 1:32:48 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305400**
Date Reported: **5/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WS23-24 4Ft
Project: Warren ANW Fed 3 **Collection Date:** 5/5/2023 10:05:00 AM
Lab ID: 2305400-014 **Matrix:** MEOH (SOIL) **Received Date:** 5/9/2023 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/9/2023 12:28:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/9/2023 12:28:12 PM
Surr: DNOP	98.2	69-147		%Rec	1	5/9/2023 12:28:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	5/9/2023 1:54:12 PM
Surr: BFB	73.8	15-244		%Rec	1	5/9/2023 1:54:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.020		mg/Kg	1	5/9/2023 1:54:12 PM
Toluene	ND	0.039		mg/Kg	1	5/9/2023 1:54:12 PM
Ethylbenzene	ND	0.039		mg/Kg	1	5/9/2023 1:54:12 PM
Xylenes, Total	ND	0.078		mg/Kg	1	5/9/2023 1:54:12 PM
Surr: 4-Bromofluorobenzene	85.2	39.1-146		%Rec	1	5/9/2023 1:54:12 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	410	60		mg/Kg	20	5/9/2023 1:45:12 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **MB-74828**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74828**	RunNo: **96621**
Prep Date: **5/9/2023**	Analysis Date: **5/9/2023**	SeqNo: **3504153** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74828**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74828**	RunNo: **96621**
Prep Date: **5/9/2023**	Analysis Date: **5/9/2023**	SeqNo: **3504154** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Sample ID: **MB-74828**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74828**	RunNo: **96644**
Prep Date: **5/9/2023**	Analysis Date: **5/9/2023**	SeqNo: **3504434** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **LCS-74824** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **74824** RunNo: **96610**

Prep Date: **5/9/2023** Analysis Date: **5/9/2023** SeqNo: **3503097** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.1	61.9	130			
Surr: DNOP	4.0		5.000		80.9	69	147			

Sample ID: **MB-74824** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **74824** RunNo: **96610**

Prep Date: **5/9/2023** Analysis Date: **5/9/2023** SeqNo: **3503098** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	69	147			

Sample ID: **2305400-014AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **WS23-24 4Ft** Batch ID: **74824** RunNo: **96610**

Prep Date: **5/9/2023** Analysis Date: **5/9/2023** SeqNo: **3503276** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	33	9.2	46.08	0	72.0	54.2	135			
Surr: DNOP	4.2		4.608		91.3	69	147			

Sample ID: **2305400-014AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **WS23-24 4Ft** Batch ID: **74824** RunNo: **96610**

Prep Date: **5/9/2023** Analysis Date: **5/9/2023** SeqNo: **3503277** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	33	9.0	45.21	0	73.2	54.2	135	0.321	29.2	
Surr: DNOP	4.1		4.521		90.9	69	147	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503100** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.2	70	130			
Surr: BFB	4800		1000		482	15	244			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503101** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	690		1000		68.7	15	244			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503192** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.6	70	130			
Surr: BFB	2000		1000		202	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503193** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.5	15	244			

Sample ID: **2305400-010ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-17 4Ft**	Batch ID: **GS96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503790** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.8	18.91	0	99.1	70	130			
Surr: BFB	4100		756.4		538	15	244			S

Sample ID: **2305400-010amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-17 4Ft**	Batch ID: **GS96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503792** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **2305400-010amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-17 4Ft**	Batch ID: **GS96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503792** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.8	18.91	0	92.8	70	130	6.54	20	
Surr: BFB	4000		756.4		526	15	244	0	0	S

Sample ID: **2305400-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-08 4Ft**	Batch ID: **GS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3504130** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	83.8	70	130			
Surr: BFB	1900		1000		187	15	244			

Sample ID: **2305400-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-08 4Ft**	Batch ID: **GS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3504131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.3	70	130	3.05	20	
Surr: BFB	1800		1000		184	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503106** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.4	39.1	146			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503194** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.7	70	130			
Toluene	0.92	0.050	1.000	0	91.5	70	130			
Ethylbenzene	0.91	0.050	1.000	0	91.0	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.7	70	130			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.3	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503195** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.5	39.1	146			

Sample ID: **2305400-011ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS23-20 4Ft**	Batch ID: **R96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503958** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.66	0.019	0.7582	0	87.0	70	130			
Toluene	0.67	0.038	0.7582	0.01259	86.9	70	130			
Ethylbenzene	0.68	0.038	0.7582	0	89.4	70	130			
Xylenes, Total	2.0	0.076	2.275	0	89.3	70	130			
Surr: 4-Bromofluorobenzene	0.70		0.7582		92.3	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305400**

12-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **2305400-011amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS23-20 4Ft**	Batch ID: **R96611**	RunNo: **96611**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3503959** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.63	0.019	0.7582	0	83.2	70	130	4.55	20	
Toluene	0.64	0.038	0.7582	0.01259	83.3	70	130	4.16	20	
Ethylbenzene	0.65	0.038	0.7582	0	85.8	70	130	4.06	20	
Xylenes, Total	2.0	0.076	2.275	0	86.8	70	130	2.79	20	
Surr: 4-Bromofluorobenzene	0.70		0.7582		91.9	39.1	146	0	0	

Sample ID: **2305400-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-09 4Ft**	Batch ID: **BS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3504149** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.5	70	130			
Toluene	0.85	0.050	1.000	0	85.3	70	130			
Ethylbenzene	0.84	0.050	1.000	0	84.1	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.1	70	130			
Surr: 4-Bromofluorobenzene	0.85		1.000		85.3	39.1	146			

Sample ID: **2305400-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-09 4Ft**	Batch ID: **BS96612**	RunNo: **96612**
Prep Date:	Analysis Date: **5/9/2023**	SeqNo: **3504150** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	81.1	70	130	5.26	20	
Toluene	0.81	0.050	1.000	0	80.7	70	130	5.51	20	
Ethylbenzene	0.80	0.050	1.000	0	80.2	70	130	4.72	20	
Xylenes, Total	2.4	0.10	3.000	0	79.4	70	130	4.54	20	
Surr: 4-Bromofluorobenzene	0.83		1.000		82.9	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2305400

RcptNo: 1

Received By: Tracy Casarrubias 5/9/2023 7:39:00 AM

Completed By: Tracy Casarrubias 5/9/2023 7:54:10 AM

Reviewed By: JH 5-9-23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JH 5/9/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address, phone number and Email are missing on COC- TMC 5/9/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Yes	Morty		

Chain-of-Custody Record

Client: EOG Resources (Vertex)

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: same day
☐ Standard ☒ Rush

Project Name: Warren ANW Fed 3

Project #: 22E-00954

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No marty

# of Coolers: 1

Cooler Temp(including CF): 5.7 -0.1= 5.6 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305400	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5/5	9:00	soil	BS23-08 4ft	4oz jar	ice	001	✓	✓					✓			
	9:05		BS23-09 4ft			002	✓	✓					✓			
	9:10		BS23-10 4ft			003	✓	✓					✓			
	9:15		BS23-11 4ft			004	✓	✓					✓			
	9:20		BS23-12 4ft			005	✓	✓					✓			
	9:25		BS23-13 4ft			006	✓	✓					✓			
	9:30		BS23-14 4ft			007	✓	✓					✓			
	9:35		BS23-15 4ft			008	✓	✓					✓			
	9:40		BS23-16 4ft			009	✓	✓					✓			
	9:45		BS23-17 4ft			010	✓	✓					✓			
	9:50		WS23-20 4ft			011	✓	✓					✓			
	9:55		WS23-21 4ft			012	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5/5	18:00				5/8/23	1330
5/8/23	1900			courier	5/9/23	7:39

Remarks:
CC: Chance Dixon & Fernando Rodriguez

Direct Bill to EOG

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: EOG Resources (Vertex)

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: same day
☐ Standard ☒ Rush

Project Name: Warren ANW Fed 3

Project #: 22E-00954

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez

On Ice: ☒ Yes ☐ No Marty

# of Coolers: 1

Cooler Temp(including CF): 5.7 - 0.1 = 5.6 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305400	(BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5/5	10:00	Soil	WS23-22 4ft	4oz jar	Ice	013	✓	✓					✓			
5/5	10:05	Soil	WS23-24 4ft	4oz jar	Ice	014	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/5	18:01				5/8/23	1830
5/8/23	1900			Courier	5/9/23	7:39

Remarks:
cc: Chance Dixon & Fernando Rodriguez

Direct Bill to EOG

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 18, 2023

Chance Dixon

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Warren ANW 3 OrderNo.: 2305493

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/10/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-25 0-4'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 11:00:00 AM
Lab ID: 2305493-001 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/10/2023 9:58:39 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/10/2023 9:58:39 AM
Surr: DNOP	89.9	69-147		%Rec	1	5/10/2023 9:58:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/10/2023 11:40:00 AM
Surr: BFB	88.1	15-244		%Rec	1	5/10/2023 11:40:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.019		mg/Kg	1	5/10/2023 11:40:00 AM
Toluene	ND	0.038		mg/Kg	1	5/10/2023 11:40:00 AM
Ethylbenzene	ND	0.038		mg/Kg	1	5/10/2023 11:40:00 AM
Xylenes, Total	ND	0.076		mg/Kg	1	5/10/2023 11:40:00 AM
Surr: 4-Bromofluorobenzene	82.1	39.1-146		%Rec	1	5/10/2023 11:40:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	59		mg/Kg	20	5/10/2023 11:20:38 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-26 0-4'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:00:00 PM
Lab ID: 2305493-002 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/10/2023 10:09:11 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/10/2023 10:09:11 AM
Surr: DNOP	74.9	69-147		%Rec	1	5/10/2023 10:09:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	5/10/2023 12:01:00 PM
Surr: BFB	86.4	15-244		%Rec	1	5/10/2023 12:01:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.020		mg/Kg	1	5/10/2023 12:01:00 PM
Toluene	ND	0.040		mg/Kg	1	5/10/2023 12:01:00 PM
Ethylbenzene	ND	0.040		mg/Kg	1	5/10/2023 12:01:00 PM
Xylenes, Total	ND	0.079		mg/Kg	1	5/10/2023 12:01:00 PM
Surr: 4-Bromofluorobenzene	83.4	39.1-146		%Rec	1	5/10/2023 12:01:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/10/2023 11:33:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-27 0-4'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:05:00 PM
Lab ID: 2305493-003 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/10/2023 10:36:24 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/10/2023 10:36:24 AM
Surr: DNOP	83.5	69-147		%Rec	1	5/10/2023 10:36:24 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	5/10/2023 12:23:00 PM
Surr: BFB	82.5	15-244		%Rec	1	5/10/2023 12:23:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.019		mg/Kg	1	5/10/2023 12:23:00 PM
Toluene	ND	0.039		mg/Kg	1	5/10/2023 12:23:00 PM
Ethylbenzene	ND	0.039		mg/Kg	1	5/10/2023 12:23:00 PM
Xylenes, Total	ND	0.077		mg/Kg	1	5/10/2023 12:23:00 PM
Surr: 4-Bromofluorobenzene	82.8	39.1-146		%Rec	1	5/10/2023 12:23:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/10/2023 11:45:20 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-28 0-1'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:10:00 PM
Lab ID: 2305493-004 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/10/2023 12:37:23 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/10/2023 12:37:23 PM
Surr: DNOP	70.7	69-147		%Rec	1	5/10/2023 12:37:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	5/10/2023 12:45:00 PM
Surr: BFB	84.0	15-244		%Rec	1	5/10/2023 12:45:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.018		mg/Kg	1	5/10/2023 12:45:00 PM
Toluene	ND	0.037		mg/Kg	1	5/10/2023 12:45:00 PM
Ethylbenzene	ND	0.037		mg/Kg	1	5/10/2023 12:45:00 PM
Xylenes, Total	ND	0.073		mg/Kg	1	5/10/2023 12:45:00 PM
Surr: 4-Bromofluorobenzene	82.0	39.1-146		%Rec	1	5/10/2023 12:45:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/10/2023 11:57:41 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-29 0-1'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:15:00 PM
Lab ID: 2305493-005 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/10/2023 10:57:32 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/10/2023 10:57:32 AM
Surr: DNOP	69.4	69-147		%Rec	1	5/10/2023 10:57:32 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/10/2023 1:06:00 PM
Surr: BFB	82.1	15-244		%Rec	1	5/10/2023 1:06:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.019		mg/Kg	1	5/10/2023 1:06:00 PM
Toluene	ND	0.038		mg/Kg	1	5/10/2023 1:06:00 PM
Ethylbenzene	ND	0.038		mg/Kg	1	5/10/2023 1:06:00 PM
Xylenes, Total	ND	0.076		mg/Kg	1	5/10/2023 1:06:00 PM
Surr: 4-Bromofluorobenzene	80.6	39.1-146		%Rec	1	5/10/2023 1:06:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/10/2023 12:10:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** WES23-30 0-1'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:20:00 PM
Lab ID: 2305493-006 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/15/2023 1:14:02 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/15/2023 1:14:02 PM
Surr: DNOP	98.0	69-147		%Rec	1	5/15/2023 1:14:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	5/10/2023 1:28:00 PM
Surr: BFB	82.2	15-244		%Rec	1	5/10/2023 1:28:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.020		mg/Kg	1	5/10/2023 1:28:00 PM
Toluene	ND	0.040		mg/Kg	1	5/10/2023 1:28:00 PM
Ethylbenzene	ND	0.040		mg/Kg	1	5/10/2023 1:28:00 PM
Xylenes, Total	ND	0.080		mg/Kg	1	5/10/2023 1:28:00 PM
Surr: 4-Bromofluorobenzene	81.1	39.1-146		%Rec	1	5/10/2023 1:28:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	5/10/2023 12:22:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BES23-18 4'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:25:00 PM
Lab ID: 2305493-007 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	23	9.1		mg/Kg	1	5/10/2023 11:50:08 AM
Motor Oil Range Organics (MRO)	49	46		mg/Kg	1	5/10/2023 11:50:08 AM
Surr: DNOP	74.5	69-147		%Rec	1	5/10/2023 11:50:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	3.0		mg/Kg	1	5/10/2023 1:49:00 PM
Surr: BFB	88.8	15-244		%Rec	1	5/10/2023 1:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.015		mg/Kg	1	5/10/2023 1:49:00 PM
Toluene	ND	0.030		mg/Kg	1	5/10/2023 1:49:00 PM
Ethylbenzene	ND	0.030		mg/Kg	1	5/10/2023 1:49:00 PM
Xylenes, Total	ND	0.060		mg/Kg	1	5/10/2023 1:49:00 PM
Surr: 4-Bromofluorobenzene	82.0	39.1-146		%Rec	1	5/10/2023 1:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	250	60		mg/Kg	20	5/10/2023 12:34:44 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305493**
Date Reported: **5/18/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BES23-19 1'
Project: Warren ANW 3 **Collection Date:** 5/8/2023 1:30:00 PM
Lab ID: 2305493-008 **Matrix:** MEOH (SOIL) **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/10/2023 12:13:42 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/10/2023 12:13:42 PM
Surr: DNOP	73.0	69-147		%Rec	1	5/10/2023 12:13:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	5/10/2023 2:11:00 PM
Surr: BFB	94.6	15-244		%Rec	1	5/10/2023 2:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.021		mg/Kg	1	5/10/2023 2:11:00 PM
Toluene	ND	0.041		mg/Kg	1	5/10/2023 2:11:00 PM
Ethylbenzene	ND	0.041		mg/Kg	1	5/10/2023 2:11:00 PM
Xylenes, Total	ND	0.082		mg/Kg	1	5/10/2023 2:11:00 PM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	5/10/2023 2:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/10/2023 12:47:04 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305493**

18-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW 3

Sample ID: **MB-74859**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74859**	RunNo: **96679**
Prep Date: **5/10/2023**	Analysis Date: **5/10/2023**	SeqNo: **3505577** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74859**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74859**	RunNo: **96679**
Prep Date: **5/10/2023**	Analysis Date: **5/10/2023**	SeqNo: **3505578** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305493**

18-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW 3

Sample ID: **LCS-74850**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74850**	RunNo: **96649**
Prep Date: **5/10/2023**	Analysis Date: **5/10/2023**	SeqNo: **3504616** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.2	61.9	130			
Surr: DNOP	4.3		5.000		85.6	69	147			

Sample ID: **MB-74850**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74850**	RunNo: **96649**
Prep Date: **5/10/2023**	Analysis Date: **5/10/2023**	SeqNo: **3504617** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		94.9	69	147			

Sample ID: **2305493-008AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES23-19 1'**	Batch ID: **74850**	RunNo: **96648**
Prep Date: **5/10/2023**	Analysis Date: **5/11/2023**	SeqNo: **3505682** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.6	48.12	0	82.0	54.2	135			
Surr: DNOP	3.5		4.812		72.7	69	147			

Sample ID: **2305493-008AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BES23-19 1'**	Batch ID: **74850**	RunNo: **96648**
Prep Date: **5/10/2023**	Analysis Date: **5/11/2023**	SeqNo: **3505683** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	9.4	46.95	0	81.8	54.2	135	2.61	29.2	
Surr: DNOP	3.7		4.695		78.5	69	147	0	0	

Sample ID: **LCS-74924**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74924**	RunNo: **96749**
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509530** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.3	61.9	130			
Surr: DNOP	4.6		5.000		92.2	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305493**

18-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW 3

Sample ID: **MB-74924**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74924**	RunNo: **96749**
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509531** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		89.9	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305493**

18-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW 3

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3504323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.7	70	130			
Surr: BFB	2100		1000		208	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3504325** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.9	15	244			

Sample ID: **2305493-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WES23-25 0-4'**	Batch ID: **GS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3505395** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.8	19.00	0	84.7	70	130			
Surr: BFB	1400		759.9		179	15	244			

Sample ID: **2305493-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WES23-25 0-4'**	Batch ID: **GS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3505396** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	3.8	19.00	0	78.9	70	130	7.04	20	
Surr: BFB	1400		759.9		181	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305493**

18-May-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW 3

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3504324** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.4	70	130			
Toluene	0.89	0.050	1.000	0	89.3	70	130			
Ethylbenzene	0.90	0.050	1.000	0	89.9	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.0	70	130			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3504326** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	39.1	146			

Sample ID: **2305493-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WES23-26 0-4'**	Batch ID: **BS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3505397** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.66	0.020	0.7924	0	83.3	70	130			
Toluene	0.66	0.040	0.7924	0	83.0	70	130			
Ethylbenzene	0.64	0.040	0.7924	0	80.8	70	130			
Xylenes, Total	1.9	0.079	2.377	0	80.0	70	130			
Surr: 4-Bromofluorobenzene	0.65		0.7924		82.6	39.1	146			

Sample ID: **2305493-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WES23-26 0-4'**	Batch ID: **BS96642**	RunNo: **96642**
Prep Date:	Analysis Date: **5/10/2023**	SeqNo: **3505398** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.64	0.020	0.7924	0	81.1	70	130	2.71	20	
Toluene	0.63	0.040	0.7924	0	80.0	70	130	3.65	20	
Ethylbenzene	0.63	0.040	0.7924	0	79.5	70	130	1.67	20	
Xylenes, Total	1.9	0.079	2.377	0	78.5	70	130	1.96	20	
Surr: 4-Bromofluorobenzene	0.66		0.7924		83.7	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2305493

RcptNo: 1

Received By: Tracy Casarrubias 5/10/2023 7:40:00 AM

Completed By: Tracy Casarrubias 5/10/2023 8:09:05 AM

Reviewed By: KPG 5.10.23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JG 5-10-23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address, phone number and Email are missing on COC- TMC 5/10/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes	Morty		

Chain-of-Custody Record

Client: EOG / Vertex

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Same-Day
☐ Standard ☑ Rush

Project Name: Warren ANW #3

Project #: 22E-00954

Project Manager: Chance Dixon

Sampler: CD

On Ice: ☑ Yes ☐ No marty

# of Coolers: 1

Cooler Temp(including CF): 3.3-0=3.3 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305493	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5/8	11:00	Soil	WES23-25 0-4'	4oz	ICE	001	✓	✓					✓			
	1:00		WES23-26 0-4'			002										
	1:05		WES23-27 0-4'			003										
	1:10		WES23-28 0-4'			004										
	1:15		WES23-29 0-4'			005										
	1:20		WES23-30 0-4'			006										
	1:25		BES23-18 4'			007										
	1:30		BES23-19 1'			008										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5/9	1015				5/9/23	1015
5/9/23	1900				5/10/23	7:40

Remarks: Direct Bill EOG

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 03, 2023

Chance Dixon
EOG
105 South Fourth Street
Artesia, NM 88210
TEL:
FAX:

RE: Warren ANW Fed 3 OrderNo.: 2310C87

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 3 sample(s) on 10/27/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310C87**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH23-13 5'
Project: Warren ANW Fed 3
Collection Date: 10/25/2023 10:32:00 AM
Lab ID: 2310C87-001 **Matrix:** SOIL
Received Date: 10/27/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	320	61		mg/Kg	20	10/30/2023 9:36:00 PM	78439
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/27/2023 7:21:25 PM	78420
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/27/2023 7:21:25 PM	78420
Surr: DNOP	101	69-147		%Rec	1	10/27/2023 7:21:25 PM	78420
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/30/2023 2:16:34 PM	78414
Surr: BFB	93.1	15-244		%Rec	1	10/30/2023 2:16:34 PM	78414
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.023		mg/Kg	1	10/30/2023 2:16:34 PM	78414
Toluene	ND	0.047		mg/Kg	1	10/30/2023 2:16:34 PM	78414
Ethylbenzene	ND	0.047		mg/Kg	1	10/30/2023 2:16:34 PM	78414
Xylenes, Total	ND	0.094		mg/Kg	1	10/30/2023 2:16:34 PM	78414
Surr: 4-Bromofluorobenzene	99.8	39.1-146		%Rec	1	10/30/2023 2:16:34 PM	78414

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C87**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH23-16 10'
Project: Warren ANW Fed 3
Collection Date: 10/25/2023 2:30:00 PM
Lab ID: 2310C87-002 **Matrix:** SOIL **Received Date:** 10/27/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	440	60		mg/Kg	20	10/30/2023 10:38:02 PM	78439
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/27/2023 7:32:15 PM	78420
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/27/2023 7:32:15 PM	78420
Surr: DNOP	101	69-147		%Rec	1	10/27/2023 7:32:15 PM	78420
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/30/2023 2:40:08 PM	78414
Surr: BFB	96.9	15-244		%Rec	1	10/30/2023 2:40:08 PM	78414
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**	
Benzene	ND	0.025		mg/Kg	1	10/30/2023 2:40:08 PM	78414
Toluene	ND	0.049		mg/Kg	1	10/30/2023 2:40:08 PM	78414
Ethylbenzene	ND	0.049		mg/Kg	1	10/30/2023 2:40:08 PM	78414
Xylenes, Total	ND	0.098		mg/Kg	1	10/30/2023 2:40:08 PM	78414
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/30/2023 2:40:08 PM	78414

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C87**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH23-10 14'
Project: Warren ANW Fed 3
Collection Date: 10/25/2023 2:32:00 PM
Lab ID: 2310C87-003 **Matrix:** SOIL **Received Date:** 10/27/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	730	60		mg/Kg	20	10/30/2023 10:50:27 PM	78439
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/30/2023 12:14:57 PM	78432
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/30/2023 12:14:57 PM	78432
Surr: DNOP	99.7	69-147		%Rec	1	10/30/2023 12:14:57 PM	78432
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/31/2023 11:50:00 AM	78421
Surr: BFB	110	15-244		%Rec	1	10/31/2023 11:50:00 AM	78421
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.024		mg/Kg	1	10/31/2023 11:50:00 AM	78421
Toluene	ND	0.047		mg/Kg	1	10/31/2023 11:50:00 AM	78421
Ethylbenzene	ND	0.047		mg/Kg	1	10/31/2023 11:50:00 AM	78421
Xylenes, Total	ND	0.095		mg/Kg	1	10/31/2023 11:50:00 AM	78421
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	10/31/2023 11:50:00 AM	78421

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C87**

03-Nov-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **MB-78439**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78439**	RunNo: **100821**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699450** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-78439**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78439**	RunNo: **100821**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699451** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C87**

03-Nov-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **LCS-78420**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78420**	RunNo: **100779**
Prep Date: **10/27/2023**	Analysis Date: **10/27/2023**	SeqNo: **3697664** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	91.0	61.9	130			
Surr: DNOP	5.9		5.000		118	69	147			

Sample ID: **MB-78420**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78420**	RunNo: **100779**
Prep Date: **10/27/2023**	Analysis Date: **10/27/2023**	SeqNo: **3697666** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	69	147			

Sample ID: **MB-78432**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78432**	RunNo: **100827**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699597** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.4	69	147			

Sample ID: **LCS-78432**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78432**	RunNo: **100827**
Prep Date: **10/30/2023**	Analysis Date: **10/30/2023**	SeqNo: **3699598** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	5.8		5.000		116	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C87**

03-Nov-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **lcs-78414**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78414**	RunNo: **100815**
Prep Date: **10/27/2023**	Analysis Date: **10/30/2023**	SeqNo: **3698447** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.9	70	130			
Surr: BFB	1900		1000		188	15	244			

Sample ID: **mb-78414**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78414**	RunNo: **100815**
Prep Date: **10/27/2023**	Analysis Date: **10/30/2023**	SeqNo: **3698671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.4	15	244			

Sample ID: **lcs-78421**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78421**	RunNo: **100865**
Prep Date: **10/27/2023**	Analysis Date: **10/31/2023**	SeqNo: **3700821** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.2	70	130			
Surr: BFB	2200		1000		221	15	244			

Sample ID: **mb-78421**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78421**	RunNo: **100865**
Prep Date: **10/27/2023**	Analysis Date: **10/31/2023**	SeqNo: **3700822** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		108	15	244			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C87**

03-Nov-23

Client: EOG

Project: Warren ANW Fed 3

Sample ID: **LCS-78414**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78414**	RunNo: **100815**
Prep Date: **10/27/2023**	Analysis Date: **10/30/2023**	SeqNo: **3698449** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.2	70	130			
Toluene	0.93	0.050	1.000	0	93.1	70	130			
Ethylbenzene	0.94	0.050	1.000	0	94.2	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.2	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: **mb-78414**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78414**	RunNo: **100815**
Prep Date: **10/27/2023**	Analysis Date: **10/30/2023**	SeqNo: **3698674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: **lcs-78421**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78421**	RunNo: **100865**
Prep Date: **10/27/2023**	Analysis Date: **10/31/2023**	SeqNo: **3700798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.025	1.000	0	79.4	70	130			
Toluene	0.81	0.050	1.000	0	81.2	70	130			
Ethylbenzene	0.84	0.050	1.000	0	83.6	70	130			
Xylenes, Total	2.5	0.10	3.000	0	82.9	70	130			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	39.1	146			

Sample ID: **mb-78421**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78421**	RunNo: **100865**
Prep Date: **10/27/2023**	Analysis Date: **10/31/2023**	SeqNo: **3700799** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.2	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG | Work Order Number: 2310C87 | RcptNo: 1

Received By: Juan Rojas 10/27/2023 7:30:00 AM

Completed By: Cheyenne Cason 10/27/2023 7:52:26 AM

Reviewed By: SCM 10/27/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JM 10/27/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Not Present	Yogi		

Chain-of-Custody Record

Client: EOG

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

~~X~~ Standard ☒ Rush 2 Day Per Erin email 10/26/23

Project Name: Warren ANW Fed #3

Project #: 22E-00954

Project Manager: C. Dixon

Sampler: D. Costafile

On Ice: ~~☐~~ Yes ☐ No

# of Coolers: 1 Yeti

Cooler Temp (Including CF): 0.9+0.2 = 1.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310C87	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/25/23	10:32	Soil	BH23-13 5'	4oz jar	ice	001	X	X	X				X			
1	14:30	1	BH23-16 10'	1	1	002	1	1					1			
1	14:32	1	BH23-10 14'	1	1	003	1	1					1			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/25/23	945				10/26/23	945
10/26/23	1900			Courier	10/27/23	7:30

Remarks: cdixon@vertex.ca dcostafile@vertex.ca

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 03, 2023

Chance Dixon

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Warren ANW Fed 3 OrderNo.: 2310D39

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 4 sample(s) on 10/28/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310D39**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-17 6'
Project: Warren ANW Fed 3 **Collection Date:** 10/26/2023 10:01:00 AM
Lab ID: 2310D39-001 **Matrix:** MEOH (SOIL) **Received Date:** 10/28/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/31/2023 11:31:31 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/31/2023 11:31:31 AM
Surr: DNOP	109	69-147		%Rec	1	10/31/2023 11:31:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	10/31/2023 2:47:00 PM
Surr: BFB	93.5	15-244		%Rec	1	10/31/2023 2:47:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.021		mg/Kg	1	10/31/2023 2:47:00 PM
Toluene	ND	0.042		mg/Kg	1	10/31/2023 2:47:00 PM
Ethylbenzene	ND	0.042		mg/Kg	1	10/31/2023 2:47:00 PM
Xylenes, Total	ND	0.083		mg/Kg	1	10/31/2023 2:47:00 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	10/31/2023 2:47:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	250	60		mg/Kg	20	10/31/2023 2:15:57 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310D39**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-14 15'
Project: Warren ANW Fed 3 **Collection Date:** 10/26/2023 10:28:00 AM
Lab ID: 2310D39-002 **Matrix:** MEOH (SOIL) **Received Date:** 10/28/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/31/2023 11:42:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/31/2023 11:42:08 AM
Surr: DNOP	109	69-147		%Rec	1	10/31/2023 11:42:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/31/2023 3:10:24 PM
Surr: BFB	95.0	15-244		%Rec	1	10/31/2023 3:10:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	10/31/2023 3:10:24 PM
Toluene	ND	0.048		mg/Kg	1	10/31/2023 3:10:24 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/31/2023 3:10:24 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/31/2023 3:10:24 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/31/2023 3:10:24 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	280	60		mg/Kg	20	10/31/2023 2:28:21 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310D39**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 12'
Project: Warren ANW Fed 3 **Collection Date:** 10/26/2023 11:30:00 AM
Lab ID: 2310D39-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/28/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/31/2023 11:52:44 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/31/2023 11:52:44 AM
Surr: DNOP	112	69-147		%Rec	1	10/31/2023 11:52:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	10/31/2023 3:33:41 PM
Surr: BFB	95.8	15-244		%Rec	1	10/31/2023 3:33:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.020		mg/Kg	1	10/31/2023 3:33:41 PM
Toluene	ND	0.039		mg/Kg	1	10/31/2023 3:33:41 PM
Ethylbenzene	ND	0.039		mg/Kg	1	10/31/2023 3:33:41 PM
Xylenes, Total	ND	0.079		mg/Kg	1	10/31/2023 3:33:41 PM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/31/2023 3:33:41 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	360	60		mg/Kg	20	10/31/2023 2:40:46 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310D39**
Date Reported: **11/3/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 22'
Project: Warren ANW Fed 3 **Collection Date:** 10/26/2023 2:28:00 PM
Lab ID: 2310D39-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/28/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	12	9.3		mg/Kg	1	10/31/2023 12:03:25 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/31/2023 12:03:25 PM
Surr: DNOP	104	69-147		%Rec	1	10/31/2023 12:03:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	10/31/2023 3:57:02 PM
Surr: BFB	95.2	15-244		%Rec	1	10/31/2023 3:57:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.019		mg/Kg	1	10/31/2023 3:57:02 PM
Toluene	ND	0.037		mg/Kg	1	10/31/2023 3:57:02 PM
Ethylbenzene	ND	0.037		mg/Kg	1	10/31/2023 3:57:02 PM
Xylenes, Total	ND	0.075		mg/Kg	1	10/31/2023 3:57:02 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	10/31/2023 3:57:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	400	60		mg/Kg	20	10/31/2023 2:53:10 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310D39**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **MB-78466**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78466**	RunNo: **100869**
Prep Date: **10/31/2023**	Analysis Date: **10/31/2023**	SeqNo: **3701184** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-78466**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78466**	RunNo: **100869**
Prep Date: **10/31/2023**	Analysis Date: **10/31/2023**	SeqNo: **3701185** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310D39**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **2310D39-004AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-01 22'** Batch ID: **78449** RunNo: **100863**
Prep Date: **10/30/2023** Analysis Date: **10/31/2023** SeqNo: **3700748** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.7	48.69	11.55	93.0	54.2	135			
Surr: DNOP	6.3		4.869		130	69	147			

Sample ID: **2310D39-004AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-01 22'** Batch ID: **78449** RunNo: **100863**
Prep Date: **10/30/2023** Analysis Date: **10/31/2023** SeqNo: **3700749** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.8	48.78	11.55	83.8	54.2	135	8.07	29.2	
Surr: DNOP	6.2		4.878		127	69	147	0	0	

Sample ID: **LCS-78449** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **78449** RunNo: **100863**
Prep Date: **10/30/2023** Analysis Date: **10/31/2023** SeqNo: **3700786** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	117	61.9	130			
Surr: DNOP	7.4		5.000		148	69	147			S

Sample ID: **MB-78449** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **78449** RunNo: **100863**
Prep Date: **10/30/2023** Analysis Date: **10/31/2023** SeqNo: **3700789** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		115	69	147			

Sample ID: **LCS-78476** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **78476** RunNo: **100868**
Prep Date: **10/31/2023** Analysis Date: **11/1/2023** SeqNo: **3701935** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	6.0		5.000		120	69	147			

Sample ID: **MB-78476** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **78476** RunNo: **100868**
Prep Date: **10/31/2023** Analysis Date: **11/1/2023** SeqNo: **3701938** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310D39**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **MB-78476**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78476**	RunNo: **100868**
Prep Date: **10/31/2023**	Analysis Date: **11/1/2023**	SeqNo: **3701938** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		119	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310D39**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700071** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	70	130			
Surr: BFB	1900		1000		192	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700402** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.7	15	244			

Sample ID: **2310d39-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-17 6'**	Batch ID: **GS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700899** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.2	20.82	0	94.1	70	130			
Surr: BFB	1600		832.6		197	15	244			

Sample ID: **2310d39-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-17 6'**	Batch ID: **GS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700900** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.2	20.82	0	94.1	70	130	0.0425	20	
Surr: BFB	1700		832.6		198	15	244	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310D39**

03-Nov-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Fed 3

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700106** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Ethylbenzene	1.0	0.050	1.000	0	104	70	130			
Xylenes, Total	3.1	0.10	3.000	0	105	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700407** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: **2310d39-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-14 15'**	Batch ID: **BS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700901** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.024	0.9690	0	99.5	70	130			
Toluene	0.96	0.048	0.9690	0	99.5	70	130			
Ethylbenzene	0.97	0.048	0.9690	0	99.6	70	130			
Xylenes, Total	2.9	0.097	2.907	0	100	70	130			
Surr: 4-Bromofluorobenzene	0.97		0.9690		101	39.1	146			

Sample ID: **2310d39-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-14 15'**	Batch ID: **BS100845**	RunNo: **100845**
Prep Date:	Analysis Date: **10/31/2023**	SeqNo: **3700902** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.024	0.9690	0	102	70	130	2.66	20	
Toluene	0.99	0.048	0.9690	0	102	70	130	2.76	20	
Ethylbenzene	1.0	0.048	0.9690	0	103	70	130	3.49	20	
Xylenes, Total	3.0	0.097	2.907	0	103	70	130	3.06	20	
Surr: 4-Bromofluorobenzene	1.0		0.9690		105	39.1	146	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2310D39

RcptNo: 1

Received By: **Cheyenne Cason** 10/28/2023 7:50:00 AM

Completed By: **Cheyenne Cason** 10/28/2023 8:28:03 AM

Reviewed By: JM 10/30/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: CMC 10/28/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Yogi		
2	2.9	Good	Not Present	Yogi		

Chain-of-Custody Record

Client: Vertex / EOG Resources
direct bill to EOG

Mailing Address:
onfile

Phone #: onfile

email or Fax#: onfile

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2 days

Project Name: Warren ANW fed # 3

Project #: 22E-00954

Project Manager: Chana Dixon

Sampler: Deusavan Costafile.

On Ice: ☑ Yes ☐ No Yogi

# of Coolers: 2 0.7-0=0.7

Cooler Temp(including CF): 2.9-0=2.9 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310039
10.26.23	10:01	Soil	BH23_17 6'			001
10.26.23	10:28		BH23_14 15'			002
10.26.23	11:30		BH23_02 12'			003
10.26.23	14:28	V	BH23_01 22'			004

BTEX / MTBE / TMB's (8021) — TPH:8015D(GRO / DRO / MRO) — 8081 Pesticides/8082 PCB's — EDB (Method 504.1) — PAHs by 8310 or 8270SIMS — RCRA 8 Metals — Cl, F, Br, NO_3, NO_2, PO_4, SO_4 — 8260 (VOA) — 8270 (Semi-VOA) — Total Coliform (Present/Absent)

Date	Time	Relinquished by	Received by	Via	Date	Time
10.26.23	17:16	Deusavan Costafile				
10/27/23	1900				10/27/23	930
			Date	Time		
			10/28/23	0750		

Remarks:
direct bill to EOG
please cc: cdixon@vertex.ca

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Chance Dixon
Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Warren ANW Federal 3 OrderNo.: 2311C28

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 11/28/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311C28**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Project: Warren ANW Federal 3
Lab ID: 2311C28-001

Client Sample ID: BH22-10 16'
Collection Date: 11/21/2023 10:05:00 AM
Matrix: MEOH (SOIL) **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	18	9.5		mg/Kg	1	11/28/2023 9:42:33 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/28/2023 9:42:33 AM
Surr: DNOP	88.4	69-147		%Rec	1	11/28/2023 9:42:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	11/28/2023 2:04:50 PM
Surr: BFB	91.5	15-244		%Rec	1	11/28/2023 2:04:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.018		mg/Kg	1	11/28/2023 2:04:50 PM
Toluene	ND	0.035		mg/Kg	1	11/28/2023 2:04:50 PM
Ethylbenzene	ND	0.035		mg/Kg	1	11/28/2023 2:04:50 PM
Xylenes, Total	ND	0.071		mg/Kg	1	11/28/2023 2:04:50 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/28/2023 2:04:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/28/2023 1:15:34 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

WO#: **2311C28**

Hall Environmental Analysis Laboratory, Inc.

01-Dec-23

Client: Vertex Resources Services, Inc.
Project: Warren ANW Federal 3

Sample ID: MB-79015	SampType: mblk	TestCode: EPA Method 300.0: Anions						
Client ID: PBS	Batch ID: 79015	RunNo: 101444						
Prep Date: 11/28/2023	Analysis Date: 11/28/2023	SeqNo: 3733048	Units: mg/Kg					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-79015	SampType: lcs	TestCode: EPA Method 300.0: Anions						
Client ID: LCSS	Batch ID: 79015	RunNo: 101444						
Prep Date: 11/28/2023	Analysis Date: 11/28/2023	SeqNo: 3733049	Units: mg/Kg					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C28**

01-Dec-23

Client: Vertex Resources Services, Inc.

Project: Warren ANW Federal 3

Sample ID: **2311C44-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **79011** RunNo: **101429**

Prep Date: **11/28/2023** Analysis Date: **11/28/2023** SeqNo: **3732155** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	450	9.5	47.71	384.2	132	54.2	135			
Surr: DNOP	4.4		4.771		92.7	69	147			

Sample ID: **2311C44-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **79011** RunNo: **101429**

Prep Date: **11/28/2023** Analysis Date: **11/28/2023** SeqNo: **3732156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	420	8.4	41.98	384.2	88.8	54.2	135	5.90	29.2	
Surr: DNOP	4.2		4.198		99.1	69	147	0	0	

Sample ID: **LCS-79011** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **79011** RunNo: **101429**

Prep Date: **11/28/2023** Analysis Date: **11/28/2023** SeqNo: **3732157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.2	61.9	130			
Surr: DNOP	4.3		5.000		85.6	69	147			

Sample ID: **MB-79011** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **79011** RunNo: **101429**

Prep Date: **11/28/2023** Analysis Date: **11/28/2023** SeqNo: **3732158** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.0	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources | Work Order Number: 2311C28 | RcptNo: 1

Received By: Juan Rojas | 11/28/2023 7:40:00 AM

Completed By: Tracy Casarrubias | 11/28/2023 8:15:41 AM

Reviewed By: 11-28-23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: / (<2 or >12 unless noted)

Adjusted?

Checked by: SCM 11/28/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: | Date:

By Whom: | Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions: Mailing address, phone number and Email/ Fax are missing on COC- TMC 11/28/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Vertex / EOG

Mailing Address: On File

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: Same-Day
☐ Standard ☑ Rush

Project Name: Warren ANW Federal #3

Project #: 22E-00954

Project Manager: Chance Dixon

Sampler: CD

On Ice: ☑ Yes ☐ No

# of Coolers: 1 Monty

Cooler Temp (including CF): 0.1-0.1=0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311278	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/21	10:05	Soil	BH22-10 16'	4oz	ICE	001	✓	✓					✓			

Analysis Request

Relinquished by:	Date	Time	Received by:	Via:	Date	Time
	11/27	1030			11/27/23	1030
	11/27/23	1900		Courier	11/28/23	7:40

Remarks: Direct Bill EOG

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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QUESTIONS

Action 291343

QUESTIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 291343
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2207561363**
Incident Name	**NAPP2207561363 WARREN ANW FEDERAL #3 BATTERY @ 0**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	WARREN ANW FEDERAL #3 BATTERY
Date Release Discovered	03/08/2022
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Other | Other (Specify) | Produced Water | Released: 0 BBL (Unknown Released Amount) | Recovered: 7 BBL | Lost: -7 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	A pinhole leak developed on a steel portion of the produced water transfer line.

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QUESTIONS (continued)

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QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more;** **(?) reported amounts release resulting in negative volume.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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

I hereby agree and sign off to the above statement	Name: Tina Huerta Title: Regulatory Reporting Supervisor Email: tina_huerta@eogresources.com Date: 12/05/2023

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QUESTIONS (continued)

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	Action Number: 291343
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 75 and 100 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	7800
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	300
GRO+DRO (EPA SW-846 Method 8015M)	150
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	04/26/2023
On what date will (or did) the final sampling or liner inspection occur	11/22/2023
On what date will (or was) the remediation complete(d)	05/16/2023
What is the estimated surface area (in square feet) that will be reclaimed	4671
What is the estimated volume (in cubic yards) that will be reclaimed	675
What is the estimated surface area (in square feet) that will be remediated	4671
What is the estimated volume (in cubic yards) that will be remediated	675
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Tina Huerta Title: Regulatory Reporting Supervisor Email: tina_huerta@eogresources.com Date: 12/05/2023
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only *Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**291356**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**11/22/2023**
What was the (estimated) number of samples that were to be gathered	**1**
What was the sampling surface area in square feet	**10**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	4671
What was the total volume (cubic yards) remediated	675
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	Please find report attached.

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: Tina Huerta Title: Regulatory Reporting Supervisor Email: tina_huerta@eogresources.com Date: 12/05/2023

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QUESTIONS (continued)

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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 291343

CONDITIONS

Operator:	OGRID:
EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	7377
	Action Number: 291343
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2207561363 WARREN ANW FEDERAL #3 BATTERY, thank you. This Remediation Closure Report is approved. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	12/14/2023