General Information

NMOCD District:	District 2	Incident ID:	nAPP2207561363
Landowner:	Howell Ranch	RP Reference:	N/A
Client:	EOG Resources	Site Location:	Warren ANW Federal #3
Date:	April 10, 2023	Project #:	22E-00954
Client Contact:	Chase Settle	Phone #:	(575)-748-1471
Vertex PM:	Chance Dixon	Phone #:	(575)-988-1472

Objective

The objective of the Environmental Remediation Workplan is to identify areas of exceedance for areas of concern delineated during spill assessment and site characterization activities and propose appropriate remediation techniques to address the open release for the Warren ANW Federal #3 Tank Battery (hereafter referred to as "Warren"). The incident occurred when a pinhole leak developed on a steel portion of the produced water transfer line. The volume of the release is unknown. Approximately seven barrels (bbls) of the release were recovered. The containment where the malfunction took place is on the north side of the pad across from the entrance on the southwest corner. Closure criteria has been selected as per New Mexico Administrative Code (NMAC) 19.15.29.12. All applicable research as it pertains to closure criteria selection is presented in Attachment 2. The closure criteria for the site is presented below (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

Site Assessment/Characterization

Site characterization was started on March 10, 2022, and completed on April 29, 2022. A total of 19 sample points (boreholes) were established. They were obtained at various depths for horizontal and vertical delineation. Samples collected at the deepest vertical distance and horizontal distance below closure criteria were submitted to the laboratory for analysis. In total, 31 samples were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for analysis. The characterization sampling locations are presented in Figure 1 (Attachment 2). Laboratory analyses were compared to the above-noted closure criteria and the results from the characterization activity are presented in Table 2 (Attachment 3).

Remedial Activities

Before remediation of exceedances is performed, the tanks that are obstructing the areas will be removed. Once the tanks are removed, areas identified with contaminant concentrations above closure criteria will be remediated through excavation underneath the liner that is in place. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. The soil will be excavated to the extent of the known contamination. Field screening will be utilized to confirm the removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stored on a 30mil liner prior to disposal at an approved facility. Once the excavation is complete, confirmatory samples will be collected and analysis will be completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced from the landowner.

Exceedances to closure criteria were found at sample points BH22-01, BH22-02, BH22-03, and BH22-10. Based on the table below which reflects the laboratory-analyzed soil samples, minimal excavation will be required to ensure the removal of contamination. The proposed excavation locations are included in Figure 2 (Attachment 2). Mechanical excavation equipment will be used to complete the excavation at these boreholes. Surface samples will be collected between the excavations across the approximate spill extents to ensure that the entire area falls below closure criteria. Field screening will be utilized to ensure that all exceeded material is removed horizontally and vertically during excavation. Confirmatory samples will be collected as per NMOCD guidance and they will be submitted for laboratory analysis of all applicable parameters. The estimated volume to be excavated is 250 yards.

Sample Point	Excavation Depth	Remediation Method
BH22-01	6’	Backhoe
BH22-02	10’	Backhoe
BH22-03	2’	Backhoe
BH22-10	2’	Backhoe

Extension Request - 1/10/2023

Vertex Resource Services, Inc. (Vertex) and EOG would like to request a 90-day extension for remediation due to production equipment obstructing the remediation area, deeming it unsafe. Coordination and agreements between the current operator, the surface owner, and EOG have delayed the movement of the equipment to date. EOG is hopeful that the equipment can be moved and remediation completed within the 90-day extension time frame. Excavation of contaminated materials will commence as soon as the current operator removes the production equipment from its current location.

Extension Request - 4/10/2023

Vertex Resource Services, Inc. (Vertex) and EOG would like to request another 90-day extension for remediation to the existing one due to production equipment still remaining in the remediation area, deeming it unsafe. Coordination and agreements between the current operator and the surface owner have delayed the movement of the equipment to date. EOG is hopeful that the equipment can be moved and remediation completed within this 90-day extension time frame. Excavation of contaminated materials will commence as soon as the current operator removes the production equipment from its current location.

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

Chance Dixon

April 10, 2023

Chance Dixon B.Sc.
PROJECT MANAGER, REPORTING

Date

Michael Moffitt

April 10, 2023

Michael Moffitt B.Sc.
MANAGER OF ENVIRONMENT, REPORT REVIEW

Date

Attachments

Attachment 1: Initial C-141
Attachment 2: Closure Criteria Research
Attachment 3: Sample Locations - Remediation Plan Figures
Attachment 4: Laboratory Results Table and Laboratory Analysis

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2207561363
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party EOG Resources, Inc.	OGRID 7377
Contact Name Chase Settle	Contact Telephone 575-748-1471
Contact email Chase_Settle@eogresources.com	Incident # *nAPP2207561363*
Contact mailing address 104 S. 4th Street, Artesia, NM 88210	

Location of Release Source

Latitude 32.670622 Longitude -104.488080
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Warren ANW Federal #3 Battery	Site Type Battery
Date Release Discovered 3/8/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
O	9	19S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* Howell Ranch Revocable Trust)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) Unknown	Volume Recovered (bbls) 7
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release A pinhole leak developed on a steel portion of the produced water transfer line.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2207561363
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unknown volume of produced water was released prior to the discovery.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by email from Tina Huerta at 5:14 p.m. on March 9, 2022, to Jim Griswold, Mike Bratcher, Robert Hamlet, and BLM.

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.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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.

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

Signature: Chase Settle
Date: 03/16/2022

email: Chase_Settle@eogresources.com
Telephone: 575-748-1471

OCD Only

Received by: Jocelyn Harimon
Date: 03/17/2022

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2207561363
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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?	95 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141 State of New Mexico
Page 4 Oil Conservation Division

Incident ID	nAPP2207561363
District RP	
Facility ID	
Application ID	

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.

Printed Name: Amber Griffin Title: Rep Safety & Environmental Sr

Signature: Amber Griffin Date: 6/6/2022

email: amber_griffin@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: Jocelyn Harimon Date: 04/10/2023

Incident ID	nAPP2207561363
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- [X] Detailed description of proposed remediation technique
- [X] Scaled sitemap with GPS coordinates showing delineation points
- [X] Estimated volume of material to be remediated
- [X] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [X] Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- [ ] Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- [ ] Extents of contamination must be fully delineated.
- [ ] Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

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

Signature: Chase Settle Date: 4/10/2023

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

OCD Only

Received by: _____ Date: _____

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

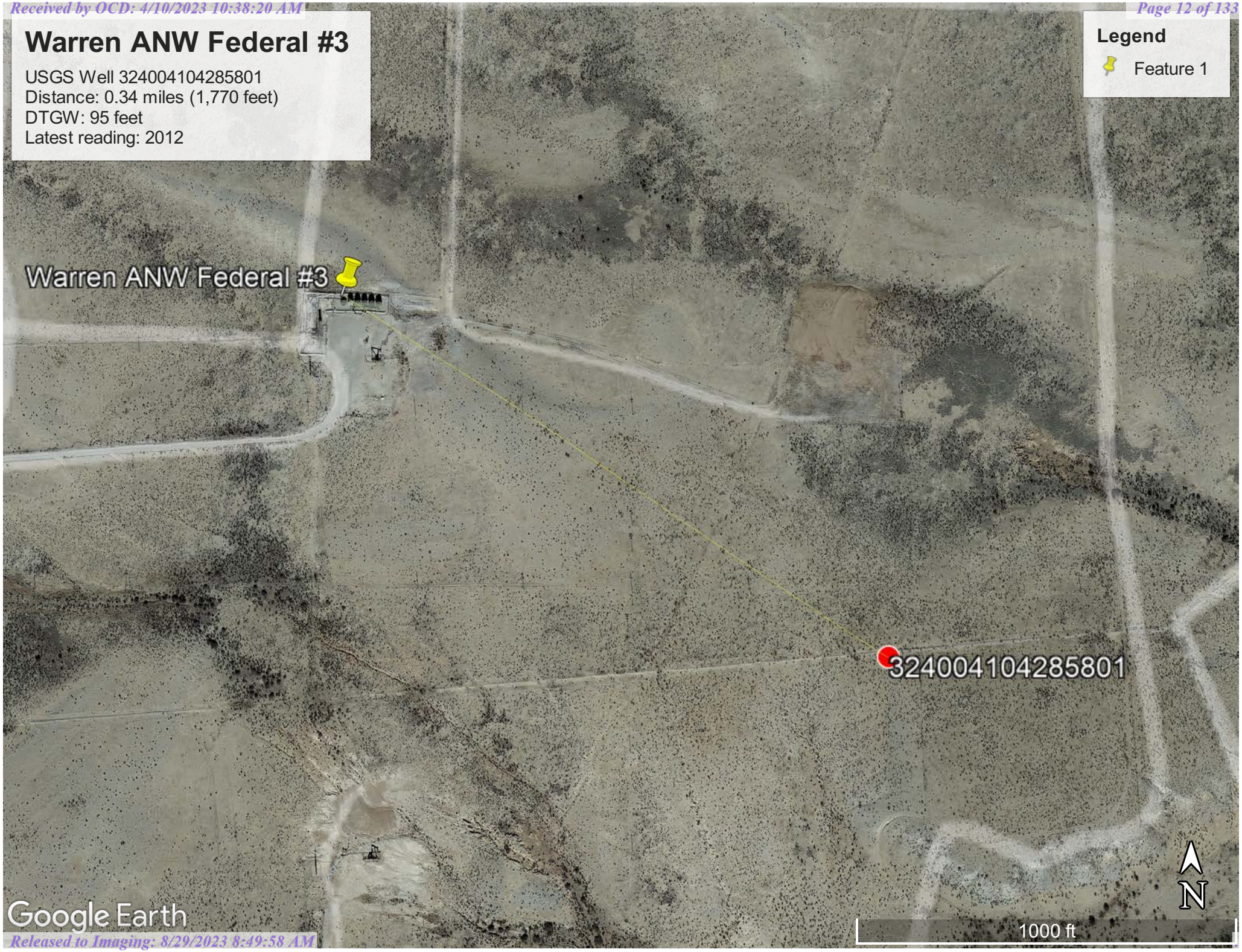
Signature: _____ Date: _____

ATTACHMENT 2

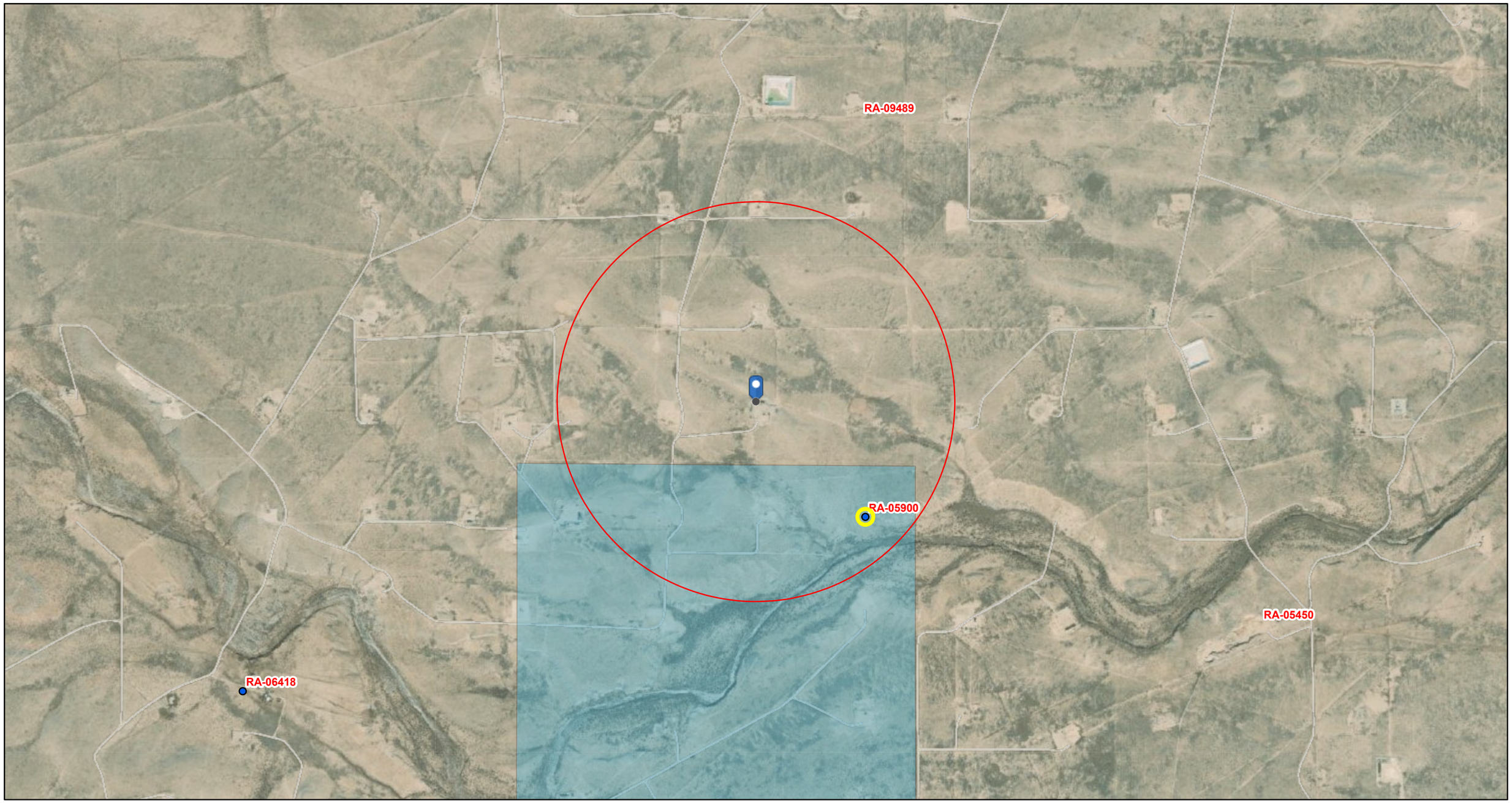
Closure Criteria Worksheet			
Site Name: Warren ANW Federal #3			
Spill Coordinates:		**X: 32.670602**	**Y: -104.488108**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**95**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	54,529	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'

Warren ANW Federal #3

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



Warren ANW Federal #3



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GIS WATERS PODs
- Active
- OSE District Boundary

Water Right Regulations
- Closure Area

New Mexico State Trust Lands
- Both Estates
- SiteBoundaries

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

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

Unofficial Online Map
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New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	RA 05900	2	2		16	19S	25E	548442	3614424*

Driller License: 460 **Driller Company:** JENKINS BROTHERS DRILLING

Driller Name:

Drill Start Date: 03/18/1974 **Drill Finish Date:** 03/19/1974 **Plug Date:**

Log File Date: 03/25/1974 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 30 GPM

Casing Size: 7.00 **Depth Well:** 185 feet **Depth Water:** 95 feet

Water Bearing Stratifications:	Top	Bottom	Description
	118	122	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	108	158

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Transaction Summary

72121 All Applications Under Statute 72-12-1

Transaction Number: 507618 **Transaction Desc:** RA 05900 **File Date:** 07/11/2012

Primary Status: PMT Permit
Secondary Status: APR Approved
Person Assigned: *******
Applicant: JAMES H AND BETTY R HOWELL REVOCABLE TRUST
Contact: ALAN R HOWELL

Events

	Date	Type	Description	Comment	Processed By
get images	07/11/2012	APP	Application Received	*	*******
	07/18/2012	FIN	Final Action on application		*******
	07/18/2012	WAP	General Approval Letter		*******
	08/09/2012	QAT	Quality Assurance Completed	IMAGES	*******

Change To:

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
RA 05900		3		STK 72-12-1 LIVESTOCK WATERING

****Point of Diversion**

RA 05900		548442	3614424*

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

Conditions

10 Total diversion from all wells under this permit number shall not exceed 3 acre-feet per annum.

14 This permit authorizes the diversion of water for watering livestock. The total diversion of water under this permit shall not exceed 3 acre-feet per year.

18 Any diversion of water made in excess of the authorized maximum diversion amount shall be repaid with twice the amount of the over-diversion during the following calendar year. Repayment shall be made by either: (a) reducing the diversion from the well that is the source of the over-diversion; or (b) acquiring or leasing a valid, existing consumptive use water right in an amount equal to the repayment amount and submitting to the State Engineer for his approval a plan for the proposed repayment.

Action of the State Engineer

**** See Image For Any Additional Conditions of Approval ****

Approval Code: A - Approved
Action Date: 07/18/2012
State Engineer: Scott A. Verhines, P.

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

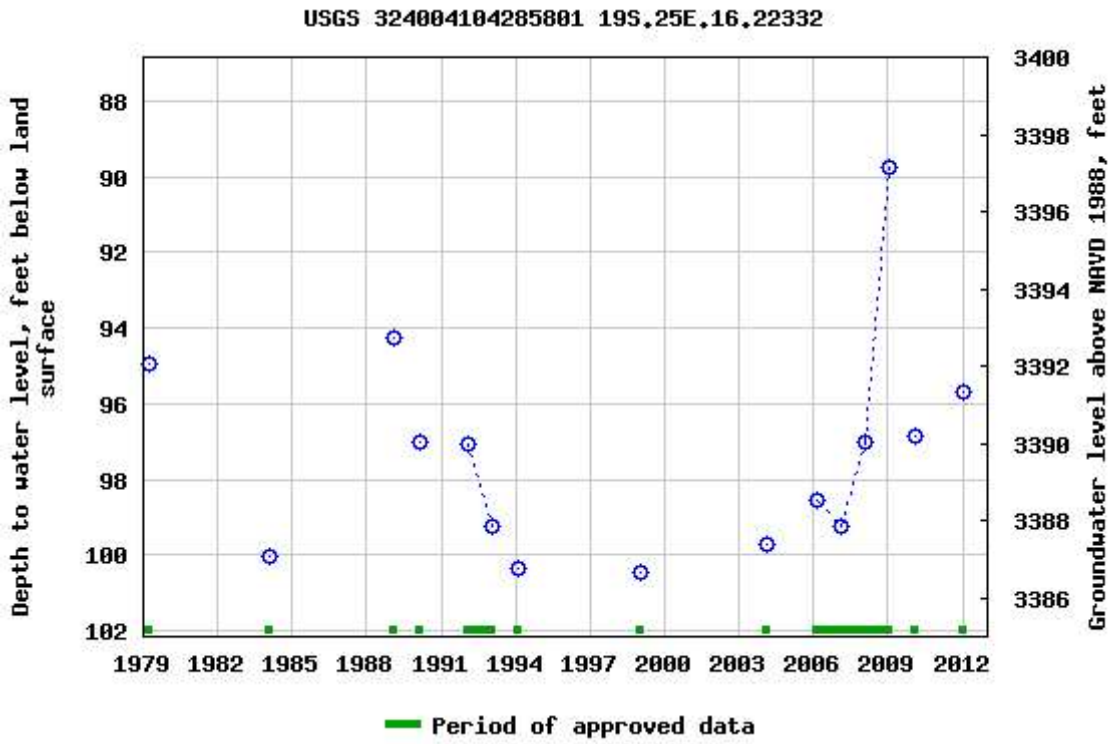
USGS 324004104285801 19S.25E.16.22332

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

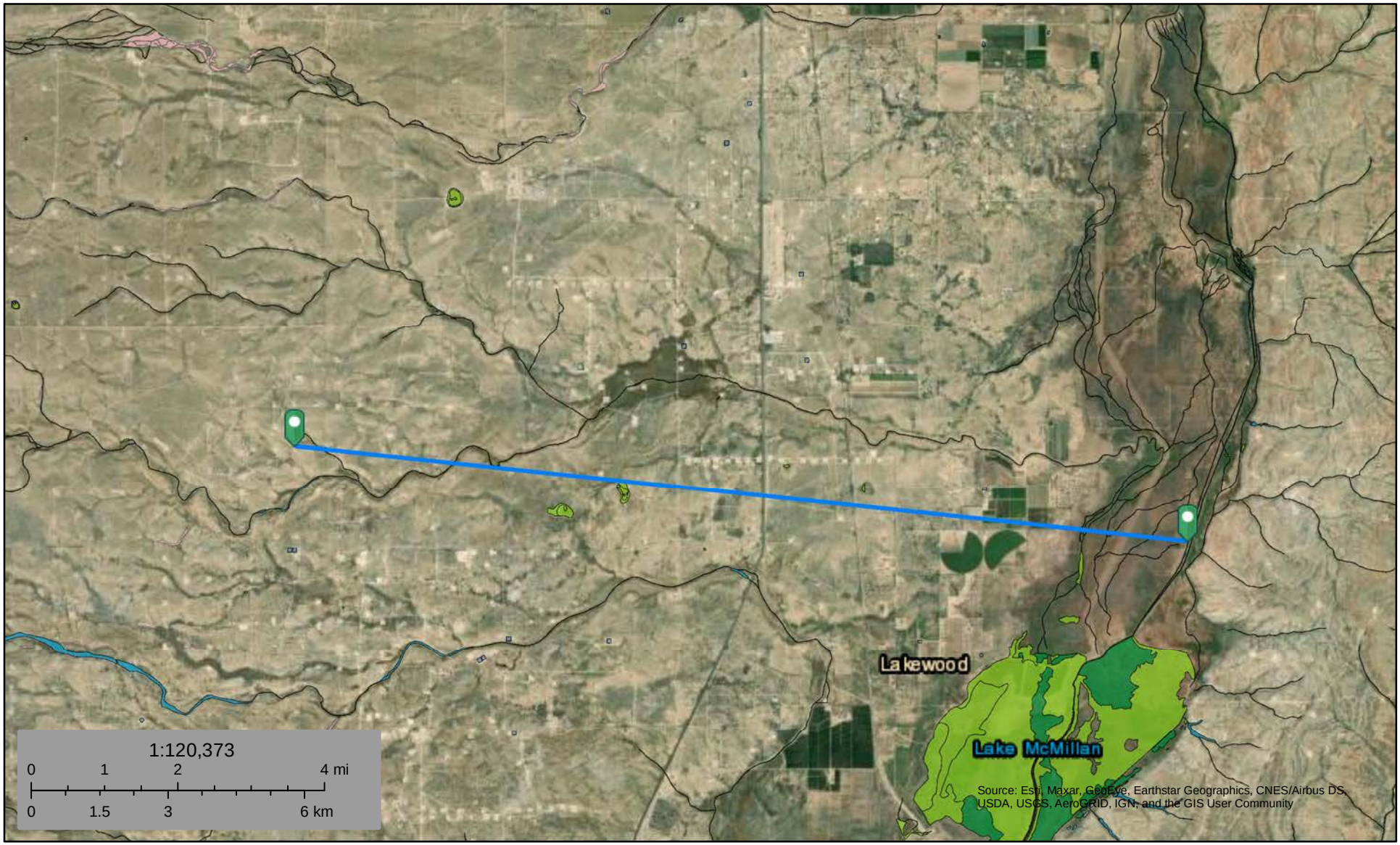
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

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

U.S. Fish and Wildlife Service

National Wetlands Inventory

Warren ANW Federal #3



March 15, 2022

Wetlands

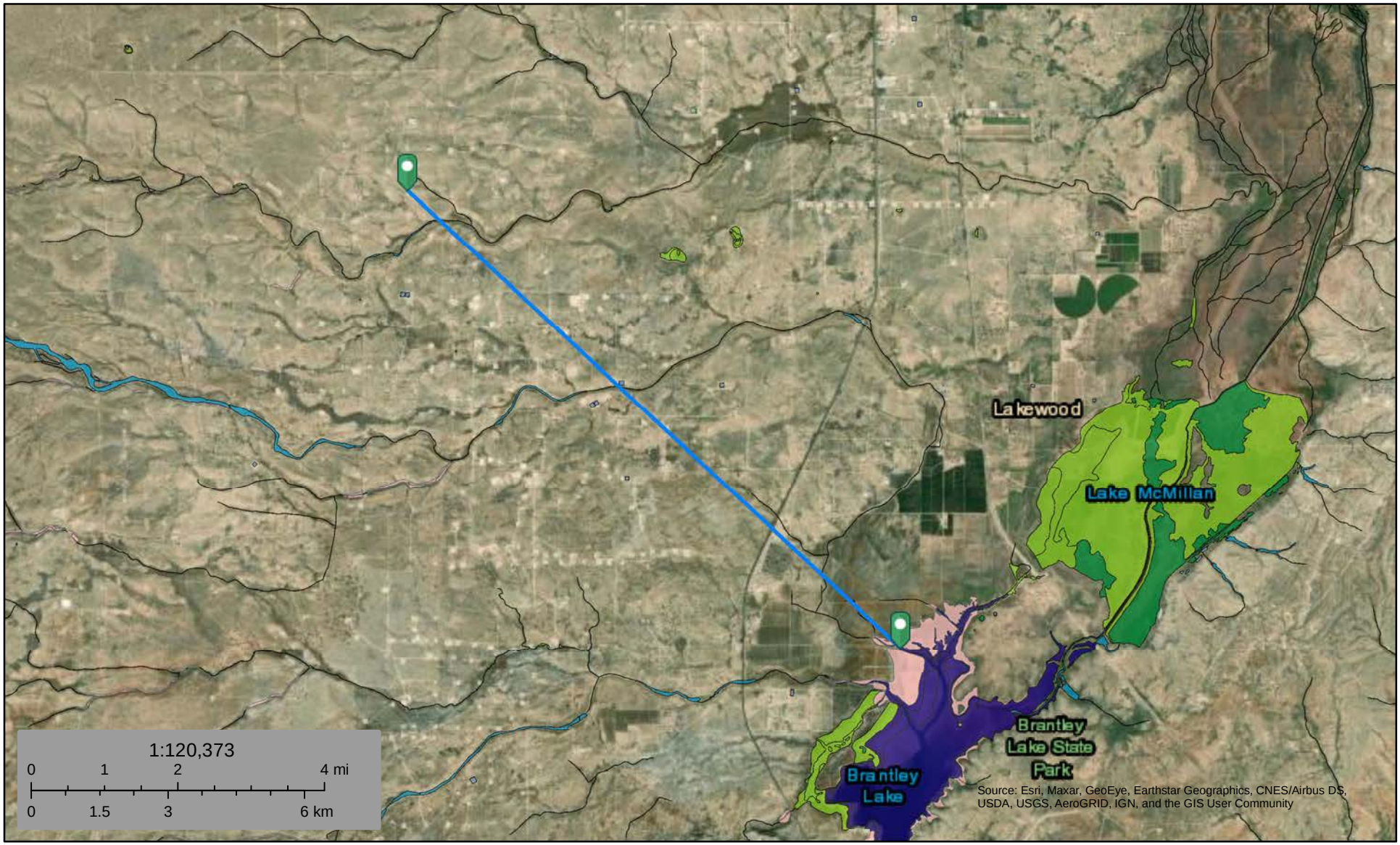
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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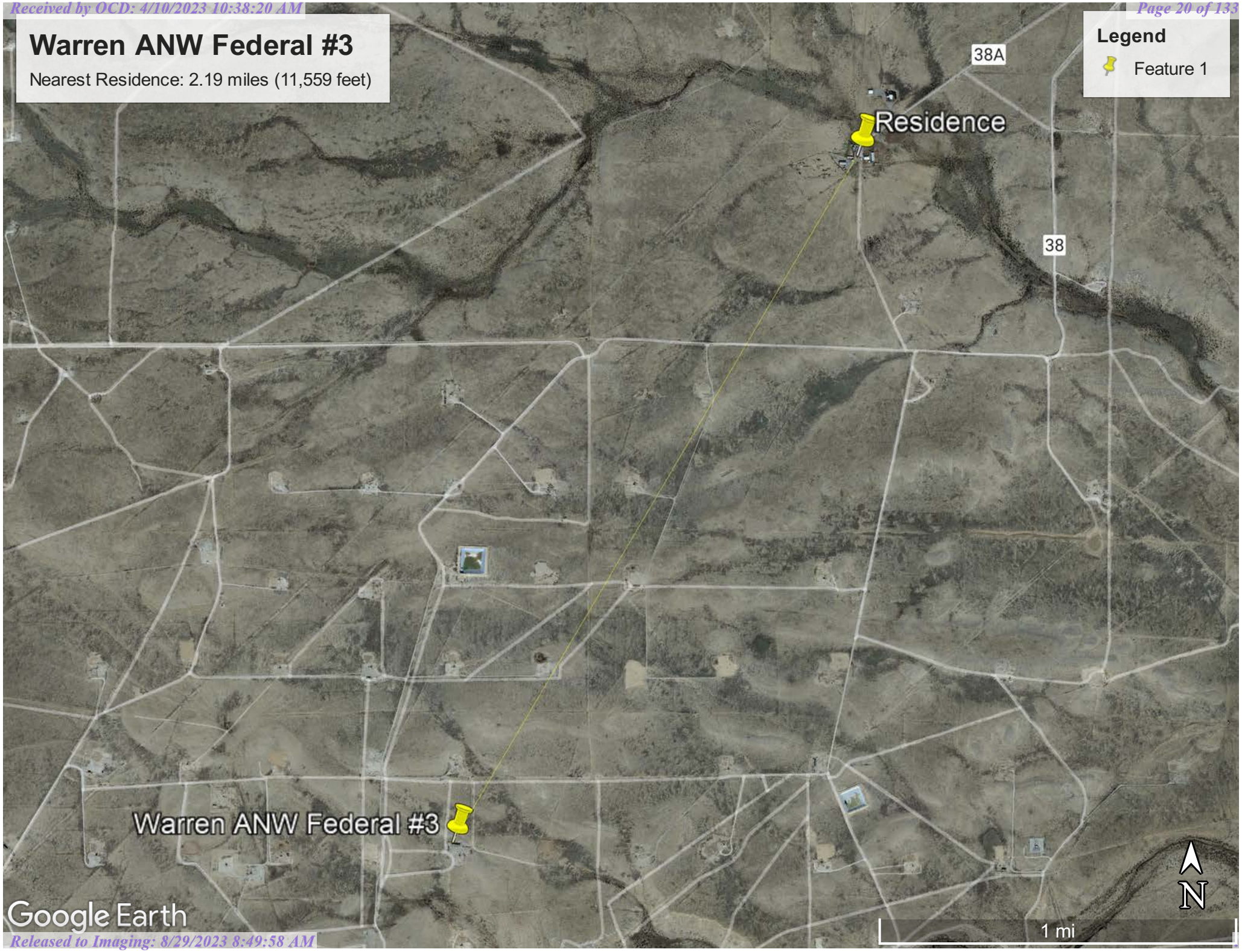
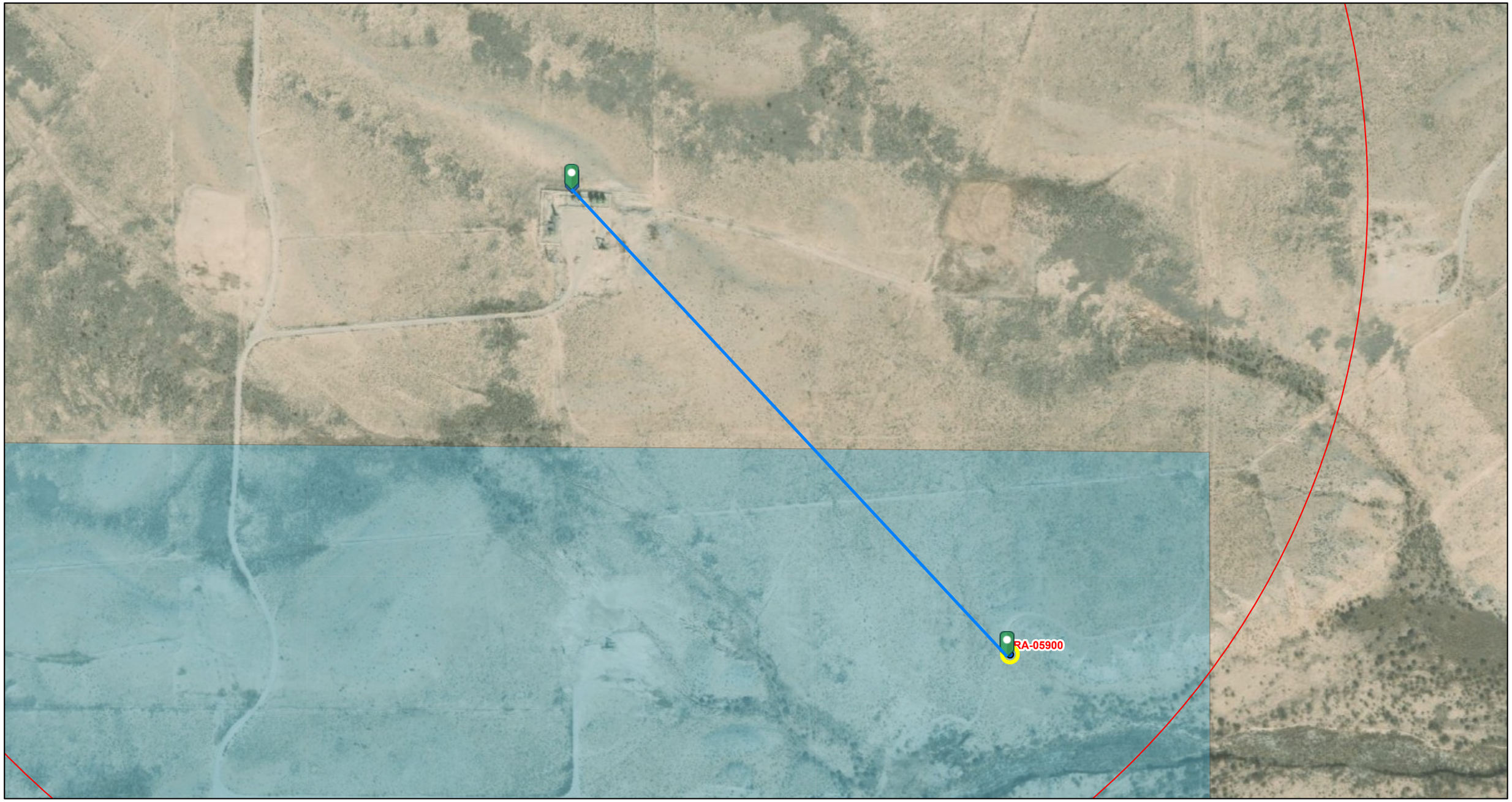
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper


Warren ANW Federal #3
Nearest Residence: 2.19 miles (11,559 feet)
Legend
Feature 1
38A
Residence
38
Warren ANW Federal #3
Google Earth
N
1 mi

Warren ANW Federal #3



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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

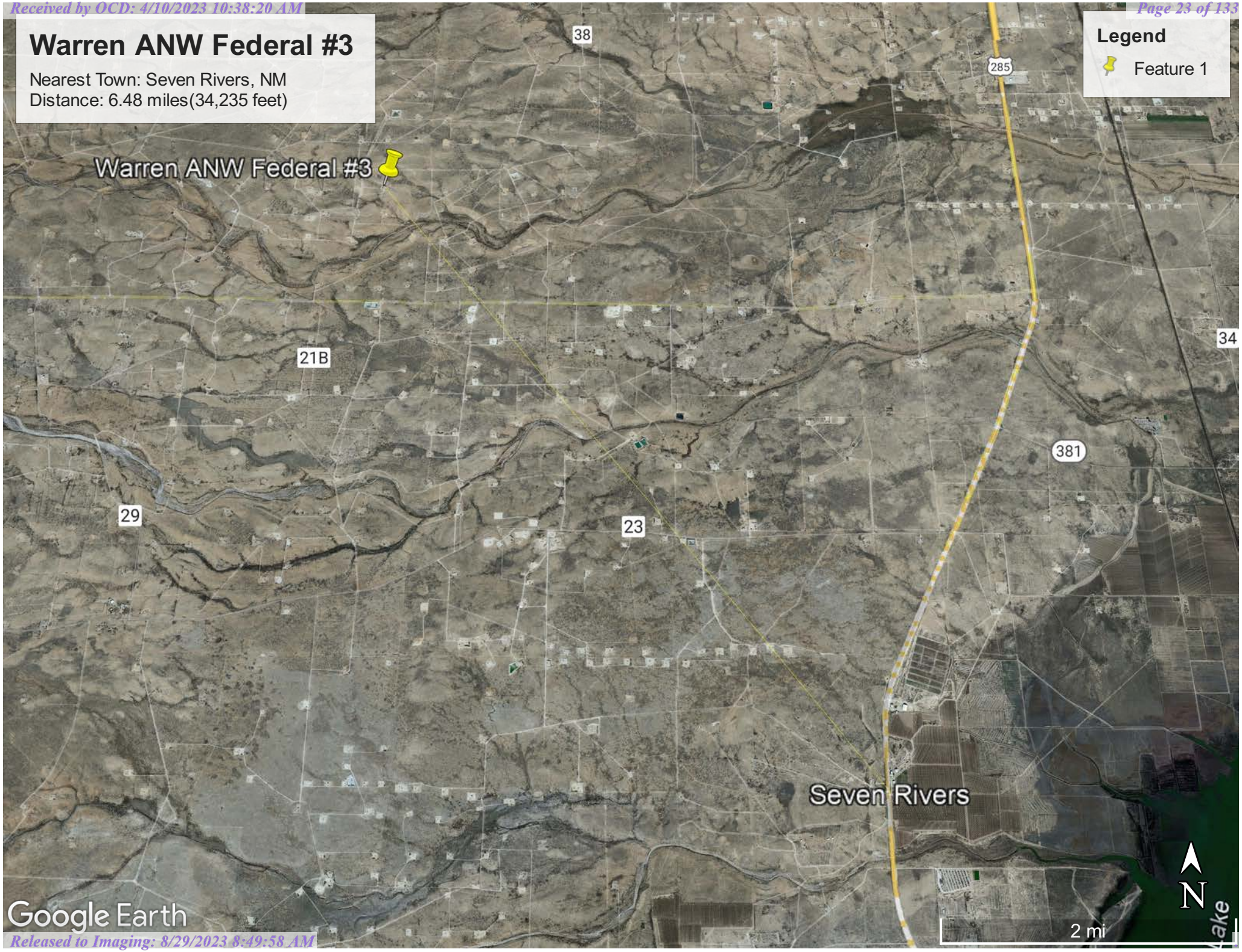
	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	507618	72121	2012-07-18	PMT	APR	RA 05900	T		3	
get images	507613	COWNF	2012-07-11	CHG	PRC	RA 05900	T		0	
	247729	72121	1974-03-19	PMT	LOG	RA 05900	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

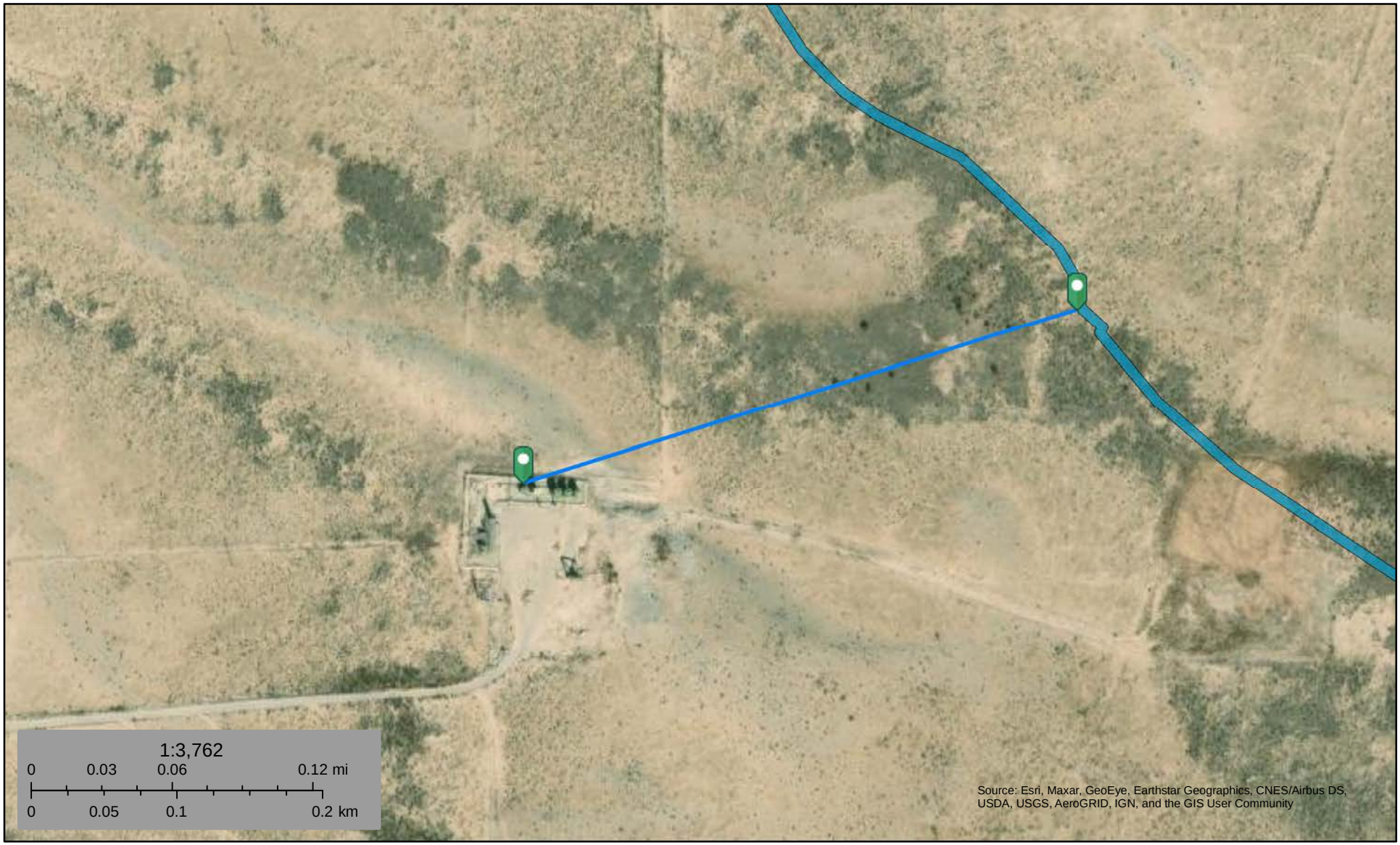
POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 05900		Shallow		2	2	16	19S	25E	548442	3614424*	

***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)
Legend
Feature 1
Warren ANW Federal #3
38
285
34
21B
381
29
23
Seven Rivers
N
2 mi
Google Earth

U.S. Fish and Wildlife Service
National Wetlands Inventory

Warren ANW Federal #3



March 15, 2022

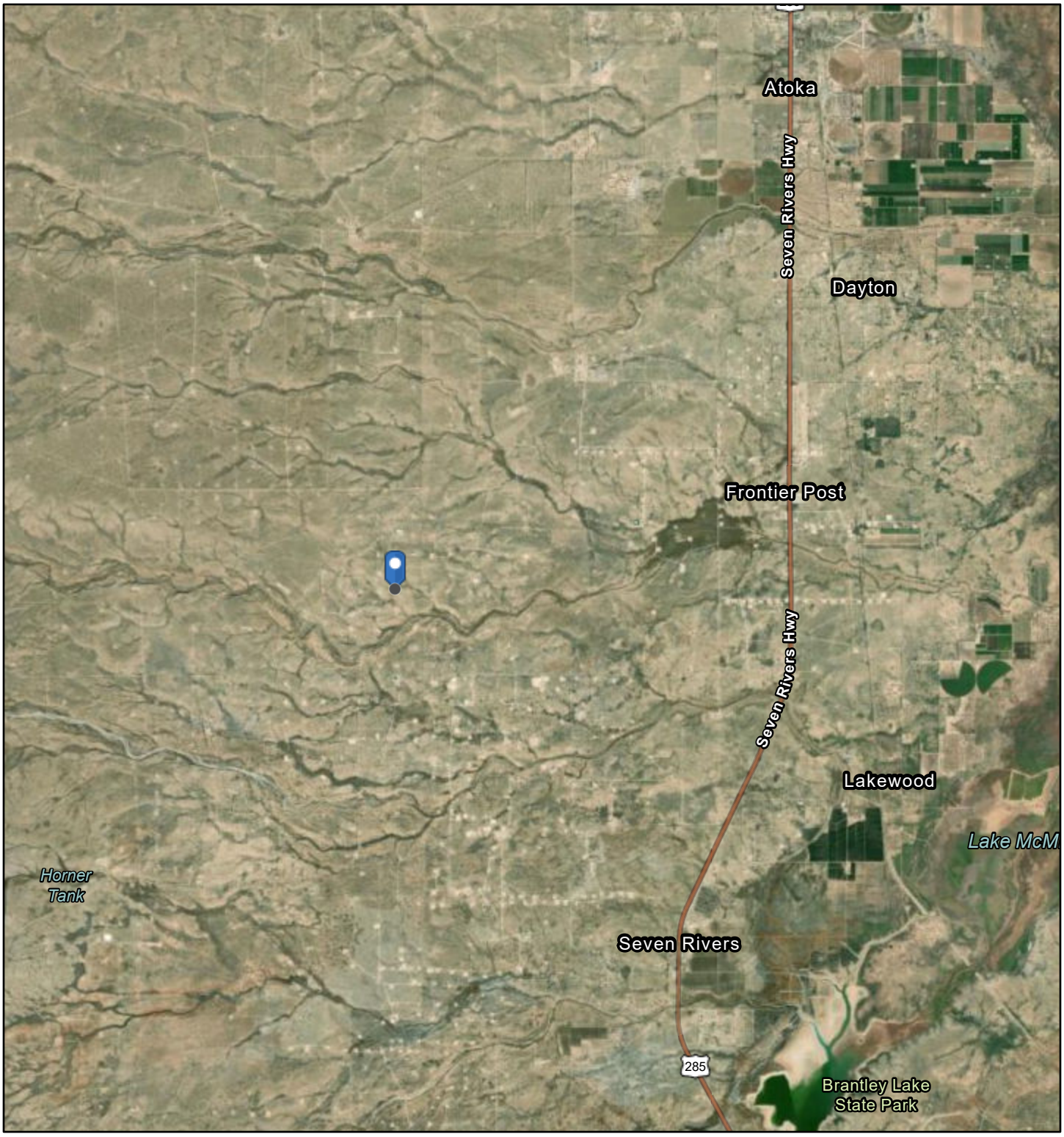
Wetlands

- 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



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

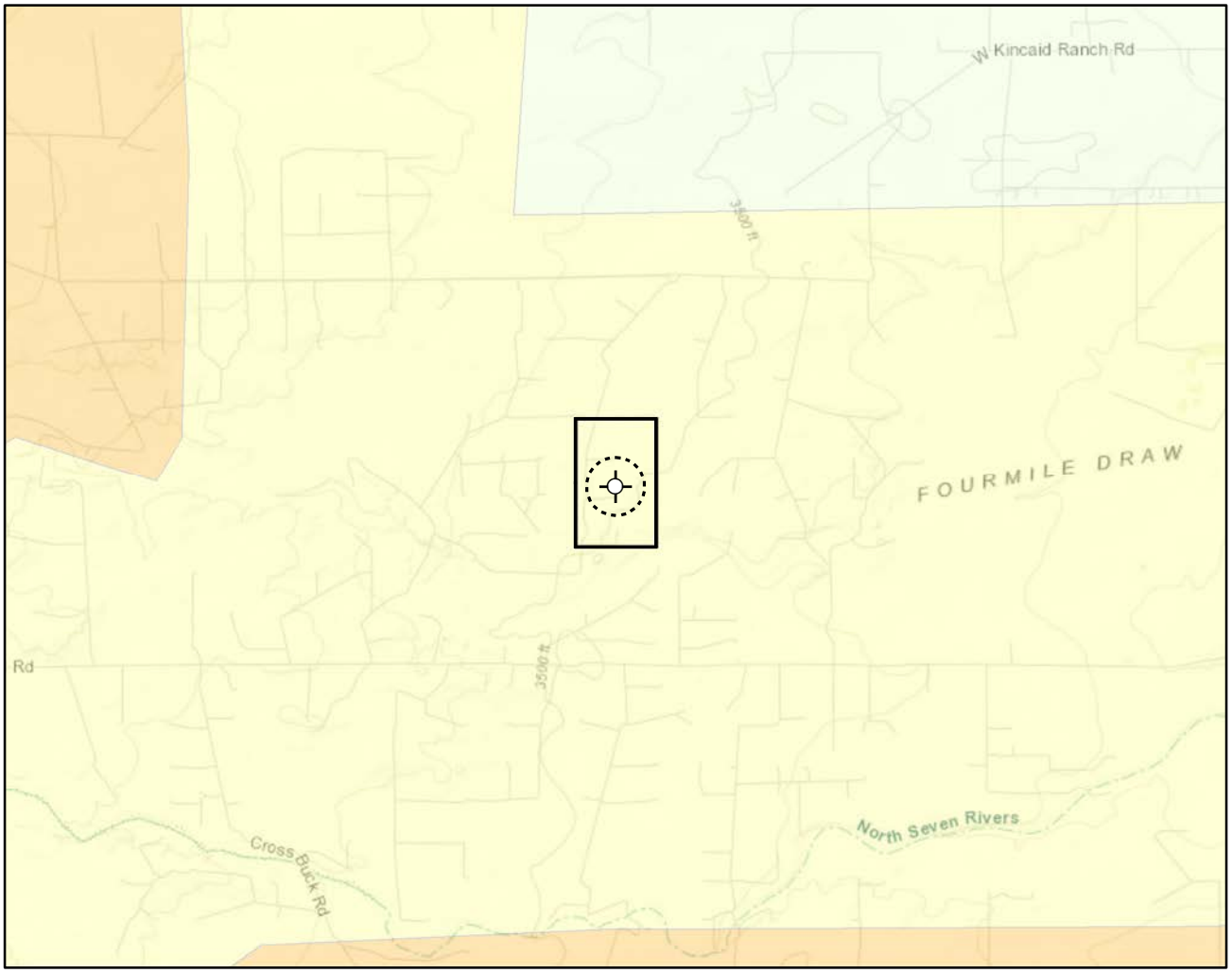
1:144,448

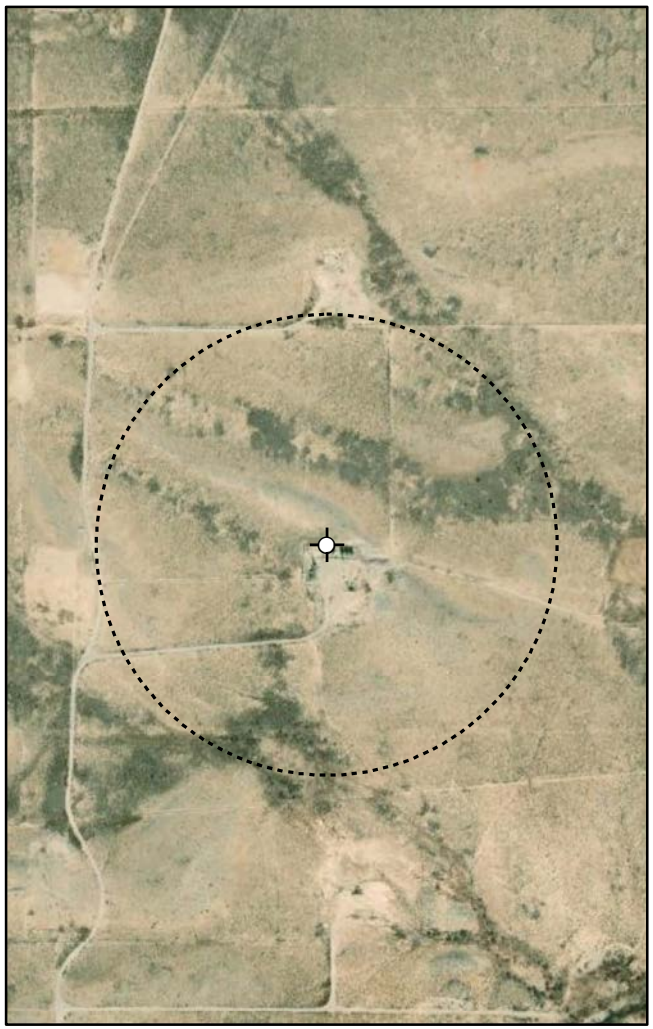
0 1 2 4 mi

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.

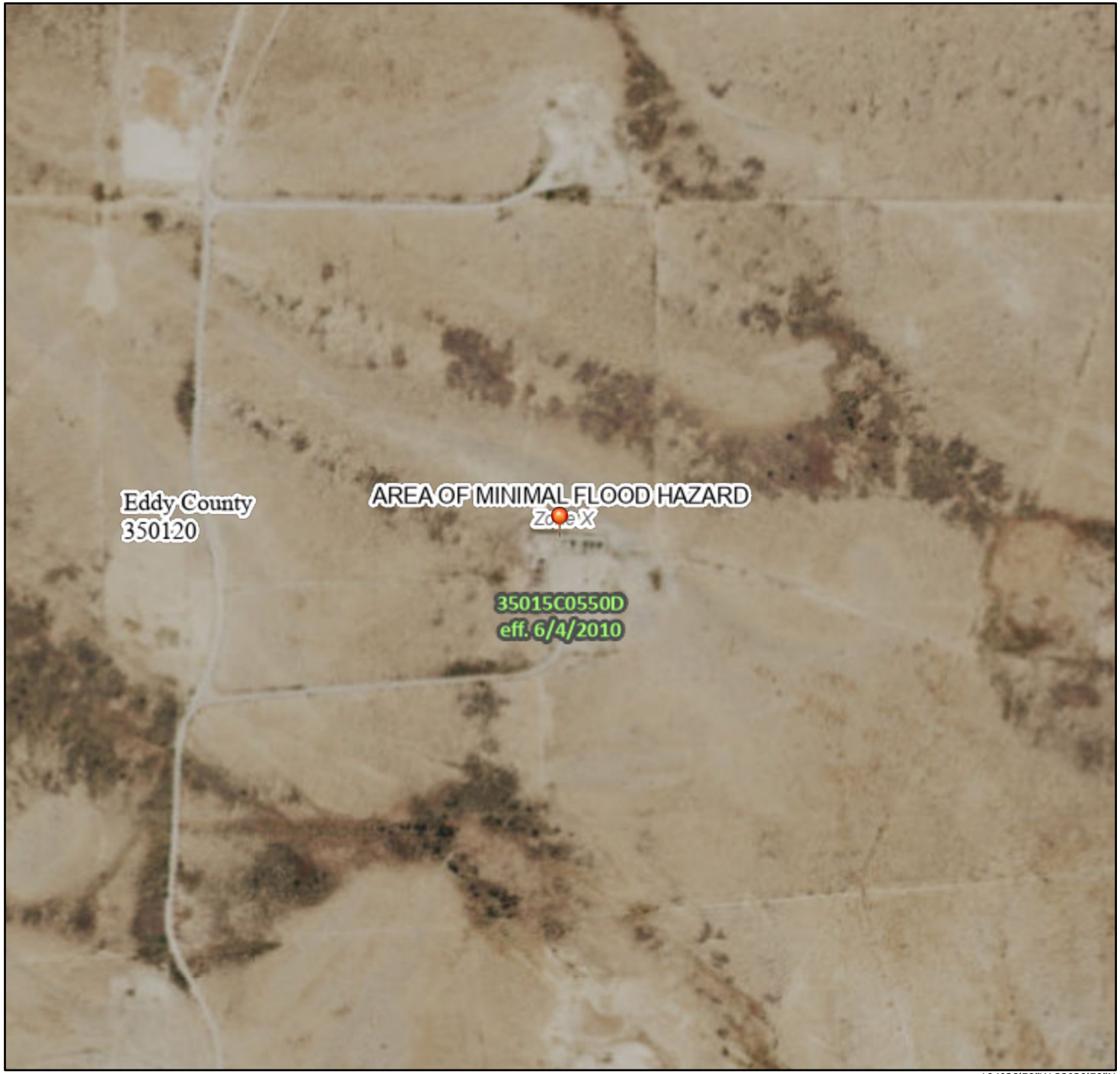
VERSATILITY. EXPERTISE.

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 Scale: 1:739 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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)

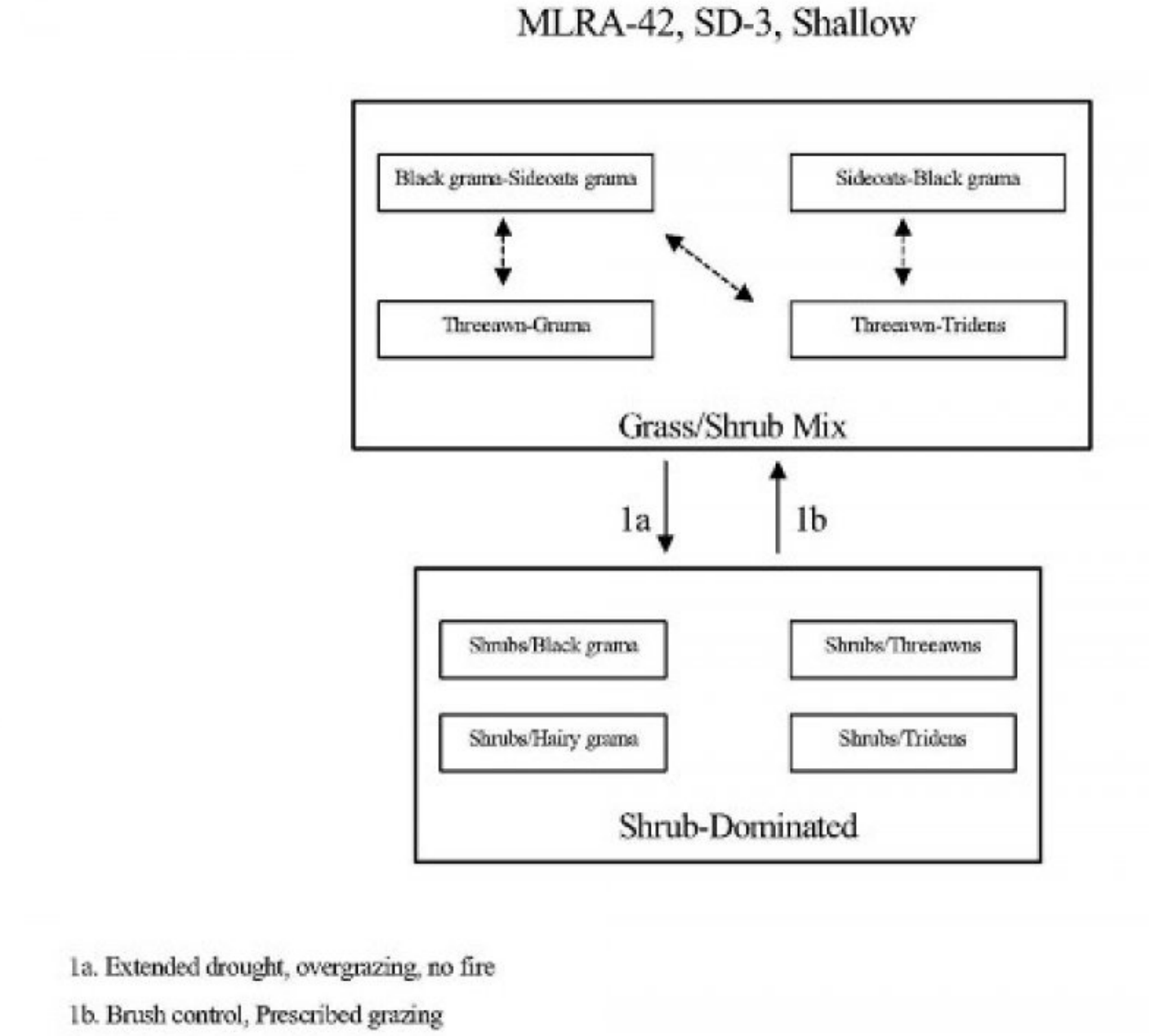


Figure 4.

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):**

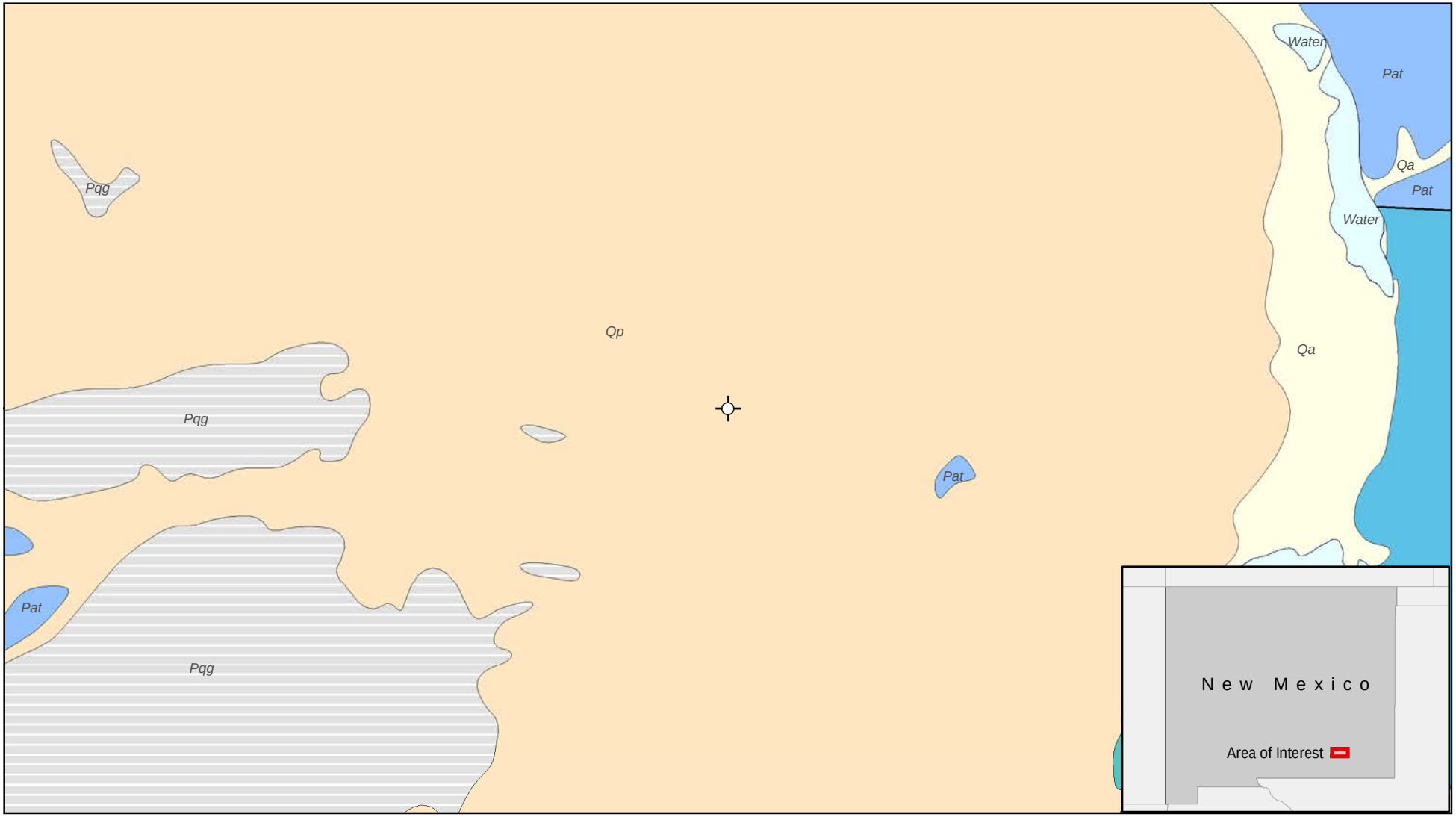
---

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

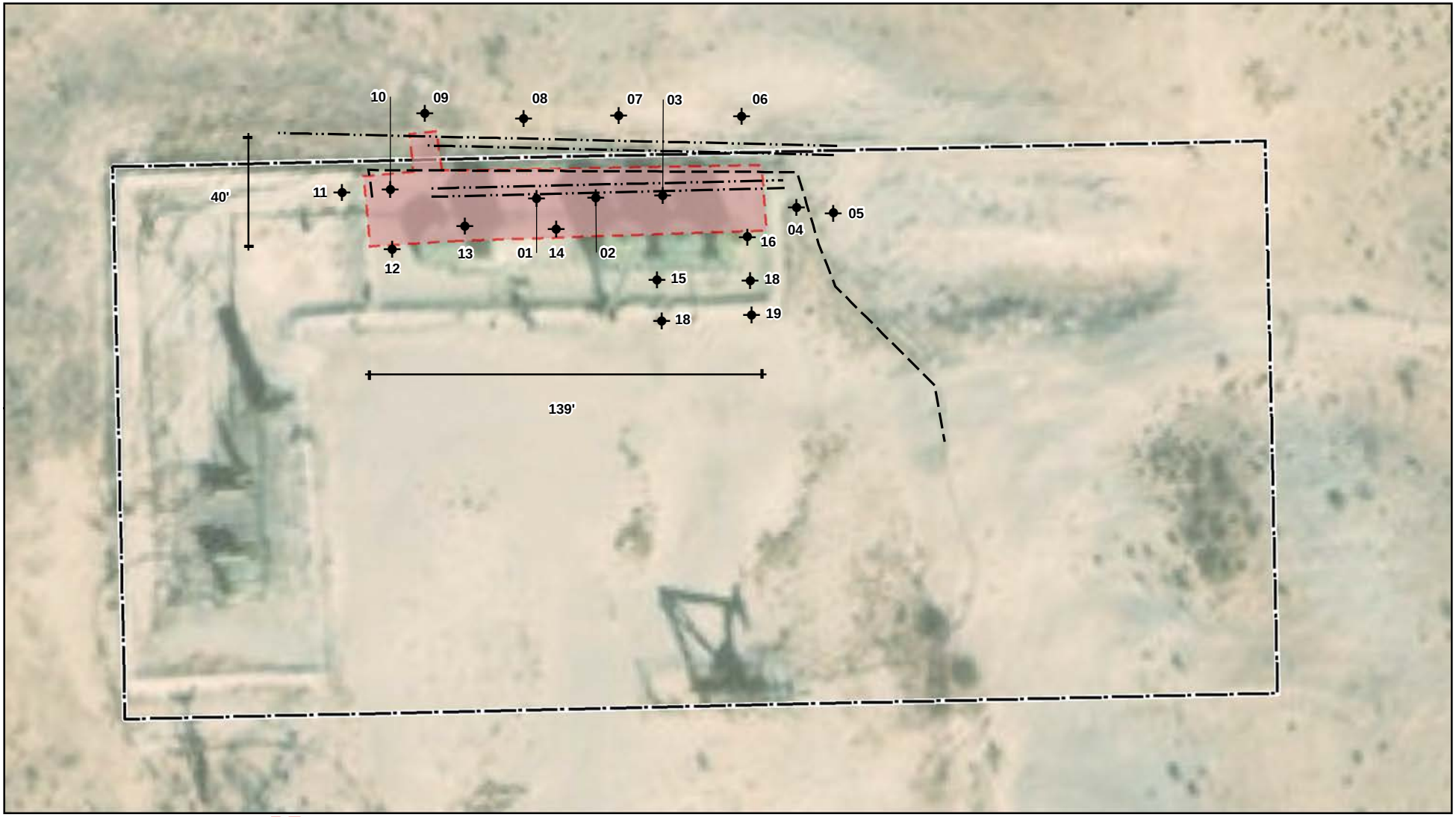
Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

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

ATTACHMENT 3



Borehole (Prefixed by "BH21-")

Approximate Extent of Spill (~3,438 sq. ft.)

Pipeline (Aboveground)

Approximate Lease Boundary

Pipeline (Underground)

VERTEX

0 12.5 25 50 Feet

Map Center:
Lat/Long: 32.670372, -104.487757

NAD 1983 UTM Zone 12N
Date: May 16/22

N

Characterization Schematic
Warren ANW Federal #3

FIGURE:
1

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: Background imagery from ESRI, 2020. Feature locations from GPS, Vertex Professional Services Ltd., 2022.

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Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\22E-00954\Figure 1 Characterization Schematic Warren ANW Federal #003.mxd

Borehole (Prefixed by "BH21-")
Pipeline (Aboveground)
Pipeline (Underground)
Proposed Excavation 1 (350 sq. ft.)
Proposed Excavation 2 (280 sq. ft.)
Proposed Excavation 3 (322 sq. ft.)
Proposed Excavation 4 (280 sq. ft.)

VERTEX

0 5 10 20 ft.

Map Center:
Lat/Long: 32.670589, -104.487960

NAD 1983 UTM Zone 13N
Date: Jun 01/22

N

Proposed Borehole 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: Background imagery from ESRI, 2020. Feature locations from GPS, Vertex Professional Services Ltd., 2022.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\22E-00954\Figure 2 Proposed Excavation Schematic Warren ANW Federal #003.mxd

ATTACHMENT 4

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

Table 2. Initial 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	0	2022-03-22	5	238	8,853	0.11	0.166	ND	37	66	103	**12000**
BH22-01	2	2022-03-22	2	-	**15,374**	-	-	-	-	-	-	-
BH22-01	4	2022-03-22	2	62	**14,809**	-	-	-	-	-	-	-
BH22-01	6	2022-03-22	0	-	**12,780**	-	-	-	-	-	-	-
BH22-01	8	2022-03-22	0	26	5,996	ND	ND	ND	ND	ND	ND	5000
BH22-01	12	2022-03-22	0	26	4,934	-	-	-	-	-	-	-
BH22-01	16	2022-03-22	0	23	2,213	ND	ND	ND	ND	ND	ND	2600
BH22-02	0	2022-03-22	55	1,238	**11,132**	0.082	0.082	ND	440	1100	1540	**11000**
BH22-02	4	2022-03-22	1	-	**13,178**	-	-	-	-	-	-	-
BH22-02	8	2022-03-22	1	40	**12,263**	ND	ND	ND	ND	ND	ND	**15000**
BH22-03	0	2022-03-22	3	6,500	3,058	ND	ND	ND	2000	2200	**4200**	2900
BH22-03	4	2022-03-22	0	8	652	ND	ND	ND	ND	ND	ND	200
BH22-04	0	2022-03-23	0	933	3,352	ND	ND	6.1	24	ND	30.1	ND
BH22-04	2	2022-03-23	0	149	1,078	-	-	-	-	-	-	-
BH22-04	4	2022-03-23	0	18	815	ND	ND	ND	ND	ND	ND	ND
BH22-04	6	2022-03-23	0	14	692	-	-	-	-	-	-	-
BH22-05	0	2022-03-23	0	768	160	ND	ND	ND	ND	ND	ND	ND
BH22-05	2	2022-03-23	0	43	135	ND	ND	ND	ND	ND	ND	ND
BH22-05	4	2022-03-23	0	96	232	ND	ND	ND	ND	ND	ND	180
BH22-05	7	2022-03-23	0	23	522	-	-	-	-	-	-	-
BH22-06	0	2022-03-23	0	25	280	ND	ND	ND	ND	ND	ND	ND
BH22-06	2	2022-03-23	0	30	85	-	-	-	-	-	-	-
BH22-06	4	2022-03-23	0	24	75	ND	ND	ND	ND	ND	ND	ND
BH22-07	0	2022-03-23	0	17	232	ND	ND	ND	ND	ND	ND	ND
BH22-07	2	2022-03-23	0	44	320	-	-	-	-	-	-	-
BH22-07	4	2022-03-23	0	66	375	ND	ND	ND	ND	ND	ND	320
BH22-08	0	2022-03-23	0	30	190	ND	ND	ND	ND	ND	ND	ND
BH22-08	2	2022-03-23	0	20	175	-	-	-	-	-	-	-
BH22-08	4	2022-03-23	0	54	525	ND	ND	ND	ND	ND	ND	570
BH22-09	0	2022-03-23	0	55	167	-	-	-	-	-	-	-
BH22-09	0	2022-04-29	0	70	0	ND	ND	ND	ND	ND	ND	ND
BH22-09	2	2022-03-23	0	41	192	-	-	-	-	-	-	-
BH22-09	2	2022-04-29	1	28	2	ND	ND	ND	ND	ND	ND	ND
BH22-09	4	2022-03-23	0	42	537	-	-	-	-	-	-	-
BH22-10	0	2022-03-24	100	3,700	14,715	ND	ND	ND	360	380	740	**16000**
BH22-10	2	2022-03-24	5	99	12,888	-	-	-	-	-	-	-
BH22-10	4	2022-03-24	0	66	5,390	ND	ND	ND	ND	ND	ND	5700
BH22-11	0	2022-03-24	1	4,620	772	ND	ND	ND	600	1100	1700	460
BH22-11	2	2022-03-24	2	113	1,595	-	-	-	-	-	-	-
BH22-11	4	2022-03-24	2	34	2,860	ND	ND	ND	ND	ND	ND	2600
BH22-12	0	2022-03-24	2	635	185	ND	ND	ND	96	240	336	ND
BH22-12	2	2022-03-24	2	11	195	-	-	-	-	-	-	-
BH22-12	4	2022-03-24	2	21	260	ND	ND	ND	ND	ND	ND	ND
BH22-13	0	2022-03-24	0	56	1,105	ND	ND	ND	ND	ND	ND	770
BH22-13	1	2022-03-24	1	272	2,620	ND	ND	ND	37	56	93	2800
BH22-14	0	2022-03-24	0	83	2,065	-	-	-	-	-	-	-
BH22-14	1	2022-03-24	1	155	4,375	ND	ND	ND	26	47	73	5000
BH22-15	0	2022-04-28	1	2,000	0	ND	ND	ND	410	870	1280	73
BH22-15	2	2022-04-28	0	143	38	ND	ND	ND	22	53	75	ND

VERTEX

BH22-15	3	2022-04-28	0	43	76	-	-	-	-	-	-	-
BH22-16	0	2022-04-29	0	1,282	11,674	ND	ND	ND	400	950	1350	18000
BH22-16	2	2022-04-29	1	266	6,663	ND	ND	ND	74	75	149	6800
BH22-17	0	2022-04-29	0	2,000	12,155	ND	ND	ND	480	1100	1580	16000
BH22-17	2	2022-04-29	0	85	11,126	ND	ND	ND	12	ND	12	10000
BH22-18	0	2022-04-28	0	243	2,270	ND	ND	ND	ND	ND	ND	2800
BH22-18	2	2022-04-28	0	28	310	ND	ND	ND	ND	ND	ND	440
BH22-18	4	2022-04-28	0	54	482	-	-	-	-	-	-	-
BH22-19	0	2022-04-29	0	246	0	ND	ND	ND	ND	ND	ND	ND
BH22-19	2	2022-04-29	1	121	554	ND	ND	ND	ND	ND	ND	410

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

ATTACHMENT 5

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

April 06, 2022

Monica Peppin

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

RE: Warren ANW Federal 3 OrderNo.: 2203D60

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 15 sample(s) on 3/25/2022 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 **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-01 0'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 10:15:00 AM
Lab ID: 2203D60-001 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	12000	600		mg/Kg	200	4/1/2022 10:38:24 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	37	9.8		mg/Kg	1	3/30/2022 12:02:49 AM	66433
Motor Oil Range Organics (MRO)	66	49		mg/Kg	1	3/30/2022 12:02:49 AM	66433
Surr: DNOP	88.8	51.1-141		%Rec	1	3/30/2022 12:02:49 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2022 8:19:29 PM	66416
Surr: BFB	98.4	37.7-212		%Rec	1	3/29/2022 8:19:29 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.11	0.024		mg/Kg	1	3/29/2022 8:19:29 PM	66416
Toluene	0.056	0.049		mg/Kg	1	3/29/2022 8:19:29 PM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2022 8:19:29 PM	66416
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2022 8:19:29 PM	66416
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	3/29/2022 8:19:29 PM	66416

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-01 8'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 10:35:00 AM
Lab ID: 2203D60-002 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	5000	300		mg/Kg	100	4/1/2022 10:50:45 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/30/2022 12:44:44 AM	66433
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 12:44:44 AM	66433
Surr: DNOP	91.9	51.1-141		%Rec	1	3/30/2022 12:44:44 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2022 9:29:54 PM	66416
Surr: BFB	99.4	37.7-212		%Rec	1	3/29/2022 9:29:54 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/29/2022 9:29:54 PM	66416
Toluene	ND	0.049		mg/Kg	1	3/29/2022 9:29:54 PM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2022 9:29:54 PM	66416
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2022 9:29:54 PM	66416
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	3/29/2022 9:29:54 PM	66416

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-01 16'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 10:45:00 AM
Lab ID: 2203D60-003 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	2600	150		mg/Kg	50	4/1/2022 11:03:06 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/30/2022 12:55:13 AM	66433
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2022 12:55:13 AM	66433
Surr: DNOP	89.7	51.1-141		%Rec	1	3/30/2022 12:55:13 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2022 10:40:33 PM	66416
Surr: BFB	97.4	37.7-212		%Rec	1	3/29/2022 10:40:33 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/29/2022 10:40:33 PM	66416
Toluene	ND	0.049		mg/Kg	1	3/29/2022 10:40:33 PM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2022 10:40:33 PM	66416
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2022 10:40:33 PM	66416
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	3/29/2022 10:40:33 PM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-02 0'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 11:30:00 AM
Lab ID: 2203D60-004 **Matrix:** SOIL
Received Date: 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	11000	600		mg/Kg	200	4/1/2022 11:15:27 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	440	180		mg/Kg	20	3/30/2022 9:45:09 PM	66433
Motor Oil Range Organics (MRO)	1100	920		mg/Kg	20	3/30/2022 9:45:09 PM	66433
Surr: DNOP	0	51.1-141	S	%Rec	20	3/30/2022 9:45:09 PM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2022 11:04:07 PM	66416
Surr: BFB	97.5	37.7-212		%Rec	1	3/29/2022 11:04:07 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.082	0.024		mg/Kg	1	3/29/2022 11:04:07 PM	66416
Toluene	ND	0.049		mg/Kg	1	3/29/2022 11:04:07 PM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2022 11:04:07 PM	66416
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2022 11:04:07 PM	66416
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	3/29/2022 11:04:07 PM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-02 8'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 11:40:00 AM
Lab ID: 2203D60-005 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	15000	600		mg/Kg	200	4/1/2022 11:52:28 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/30/2022 1:05:43 AM	66433
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/30/2022 1:05:43 AM	66433
Surr: DNOP	92.3	51.1-141		%Rec	1	3/30/2022 1:05:43 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2022 11:27:32 PM	66416
Surr: BFB	100	37.7-212		%Rec	1	3/29/2022 11:27:32 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/29/2022 11:27:32 PM	66416
Toluene	ND	0.048		mg/Kg	1	3/29/2022 11:27:32 PM	66416
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2022 11:27:32 PM	66416
Xylenes, Total	ND	0.096		mg/Kg	1	3/29/2022 11:27:32 PM	66416
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	3/29/2022 11:27:32 PM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-03 0'
Project: Warren ANW Federal 3
Collection Date: 3/22/2022 11:45:00 AM
Lab ID: 2203D60-006 **Matrix:** SOIL
Received Date: 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	2900	150		mg/Kg	50	4/1/2022 12:04:48 PM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	2000	190		mg/Kg	20	3/30/2022 9:55:47 PM	66433
Motor Oil Range Organics (MRO)	2200	930		mg/Kg	20	3/30/2022 9:55:47 PM	66433
Surr: DNOP	0	51.1-141	S	%Rec	20	3/30/2022 9:55:47 PM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	3/29/2022 11:51:13 PM	66416
Surr: BFB	94.8	37.7-212		%Rec	5	3/29/2022 11:51:13 PM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.12		mg/Kg	5	3/29/2022 11:51:13 PM	66416
Toluene	ND	0.25		mg/Kg	5	3/29/2022 11:51:13 PM	66416
Ethylbenzene	ND	0.25		mg/Kg	5	3/29/2022 11:51:13 PM	66416
Xylenes, Total	ND	0.49		mg/Kg	5	3/29/2022 11:51:13 PM	66416
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	5	3/29/2022 11:51:13 PM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG **Client Sample ID:** BH22-03 4'
Project: Warren ANW Federal 3 **Collection Date:** 3/22/2022 11:50:00 AM
Lab ID: 2203D60-007 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	200	60		mg/Kg	20	4/1/2022 3:45:56 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/30/2022 1:16:15 AM	66433
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 1:16:15 AM	66433
Surr: DNOP	92.4	51.1-141		%Rec	1	3/30/2022 1:16:15 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/30/2022 12:14:43 AM	66416
Surr: BFB	98.8	37.7-212		%Rec	1	3/30/2022 12:14:43 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 12:14:43 AM	66416
Toluene	ND	0.050		mg/Kg	1	3/30/2022 12:14:43 AM	66416
Ethylbenzene	ND	0.050		mg/Kg	1	3/30/2022 12:14:43 AM	66416
Xylenes, Total	ND	0.099		mg/Kg	1	3/30/2022 12:14:43 AM	66416
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	3/30/2022 12:14:43 AM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-04 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 11:15:00 AM
Lab ID: 2203D60-010 **Matrix:** SOIL
Received Date: 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 3:58:16 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	24	9.2		mg/Kg	1	3/30/2022 1:26:47 AM	66433
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 1:26:47 AM	66433
Surr: DNOP	84.5	51.1-141		%Rec	1	3/30/2022 1:26:47 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	6.1	4.9		mg/Kg	1	3/30/2022 12:38:18 AM	66416
Surr: BFB	127	37.7-212		%Rec	1	3/30/2022 12:38:18 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 12:38:18 AM	66416
Toluene	ND	0.049		mg/Kg	1	3/30/2022 12:38:18 AM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 12:38:18 AM	66416
Xylenes, Total	ND	0.098		mg/Kg	1	3/30/2022 12:38:18 AM	66416
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	3/30/2022 12:38:18 AM	66416

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-04 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 11:25:00 AM
Lab ID: 2203D60-011 **Matrix:** SOIL
Received Date: 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 4:10:38 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/30/2022 1:37:21 AM	66433
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2022 1:37:21 AM	66433
Surr: DNOP	92.8	51.1-141		%Rec	1	3/30/2022 1:37:21 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/30/2022 1:01:55 AM	66416
Surr: BFB	97.4	37.7-212		%Rec	1	3/30/2022 1:01:55 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 1:01:55 AM	66416
Toluene	ND	0.050		mg/Kg	1	3/30/2022 1:01:55 AM	66416
Ethylbenzene	ND	0.050		mg/Kg	1	3/30/2022 1:01:55 AM	66416
Xylenes, Total	ND	0.099		mg/Kg	1	3/30/2022 1:01:55 AM	66416
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	3/30/2022 1:01:55 AM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-05 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 12:00:00 PM
Lab ID: 2203D60-013 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 4:22:57 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/30/2022 1:47:54 AM	66433
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 1:47:54 AM	66433
Surr: DNOP	81.0	51.1-141		%Rec	1	3/30/2022 1:47:54 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 1:25:28 AM	66416
Surr: BFB	97.0	37.7-212		%Rec	1	3/30/2022 1:25:28 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 1:25:28 AM	66416
Toluene	ND	0.049		mg/Kg	1	3/30/2022 1:25:28 AM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 1:25:28 AM	66416
Xylenes, Total	ND	0.098		mg/Kg	1	3/30/2022 1:25:28 AM	66416
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	3/30/2022 1:25:28 AM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-05 2'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 12:05:00 PM
Lab ID: 2203D60-014 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 4:35:18 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/30/2022 1:58:30 AM	66433
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/30/2022 1:58:30 AM	66433
Surr: DNOP	78.9	51.1-141		%Rec	1	3/30/2022 1:58:30 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 2:12:41 AM	66416
Surr: BFB	95.4	37.7-212		%Rec	1	3/30/2022 2:12:41 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 2:12:41 AM	66416
Toluene	ND	0.048		mg/Kg	1	3/30/2022 2:12:41 AM	66416
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 2:12:41 AM	66416
Xylenes, Total	ND	0.097		mg/Kg	1	3/30/2022 2:12:41 AM	66416
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	3/30/2022 2:12:41 AM	66416

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203D60**
Date Reported: **4/6/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-05 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 12:10:00 PM
Lab ID: 2203D60-015 **Matrix:** SOIL **Received Date:** 3/25/2022 7:23:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	180	60		mg/Kg	20	4/1/2022 4:47:40 AM	66549
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/30/2022 2:09:06 AM	66433
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 2:09:06 AM	66433
Surr: DNOP	86.2	51.1-141		%Rec	1	3/30/2022 2:09:06 AM	66433
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 2:36:18 AM	66416
Surr: BFB	96.0	37.7-212		%Rec	1	3/30/2022 2:36:18 AM	66416
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 2:36:18 AM	66416
Toluene	ND	0.049		mg/Kg	1	3/30/2022 2:36:18 AM	66416
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 2:36:18 AM	66416
Xylenes, Total	ND	0.098		mg/Kg	1	3/30/2022 2:36:18 AM	66416
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	3/30/2022 2:36:18 AM	66416

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203D60**
06-Apr-22

Client: EOG
Project: Warren ANW Federal 3

Sample ID: **MB-66549**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66549**	RunNo: **86884**
Prep Date: **3/31/2022**	Analysis Date: **3/31/2022**	SeqNo: **3070434** Units: **mg/Kg**

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

Sample ID: **LCS-66549**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66549**	RunNo: **86884**
Prep Date: **3/31/2022**	Analysis Date: **3/31/2022**	SeqNo: **3070435** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.7	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203D60**
06-Apr-22

Client: EOG
Project: Warren ANW Federal 3

Sample ID: **LCS-66433**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **66433**	RunNo: **86803**
Prep Date: **3/28/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066789** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.8	68.9	135			
Surr: DNOP	3.8		5.000		75.1	51.1	141			

Sample ID: **MB-66433**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **66433**	RunNo: **86803**
Prep Date: **3/28/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066793** 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		90.2	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203D60**
06-Apr-22

Client: EOG
Project: Warren ANW Federal 3

Sample ID: **mb-66416**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66416**	RunNo: **86824**
Prep Date: **3/25/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066214** 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	970		1000		97.0	37.7	212			

Sample ID: **lcs-66416**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66416**	RunNo: **86824**
Prep Date: **3/25/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066215** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	72.3	137			
Surr: BFB	2100		1000		209	37.7	212			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203D60**

06-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **mb-66416**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66416**	RunNo: **86824**
Prep Date: **3/25/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066262** 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	0.98		1.000		98.0	70	130			

Sample ID: **LCS-66416**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66416**	RunNo: **86824**
Prep Date: **3/25/2022**	Analysis Date: **3/29/2022**	SeqNo: **3066263** 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	88.3	80	120			
Toluene	0.91	0.050	1.000	0	91.4	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG Work Order Number: 2203D60 RcptNo: 1

Received By: Cheyenne Cason 3/25/2022 7:23:00 AM
Completed By: Sean Livingston 3/25/2022 8:24:46 AM
Reviewed By: TMC 3/25/22

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: TM 3/25/22

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	2.9	Good				
2	1.6	Good				
3	2.8	Good				

Chain-of-Custody Record

Client: EOG

Chase Settle

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day

☑ Standard ☐ Rush

Project Name: Warren ANW Federal #3

Project #: 22E-

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks (°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. 2203960	(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)
3/22	10:15	Soil	BH22-01 0'	4oz	ice	001	✓	✓					✓			
	10:35		BH22-01 8'			002										
	10:45		BH22-01 16'			003										
	11:30		BH22-02 0'			004										
	11:40		BH22-02 8'			005										
	11:45		BH22-03 0'			006										
	11:50		BH22-03 4'			007										
	12:00		BH22-03 8'			008	PLEASE HOLD									
3/22	12:10		BH22-03 16'			009	PLEASE HOLD									
3/23	11:15		BH22-04 0'			010										
3/23	11:25		BH22-04 4'			011										
3/23	11:30		BH22-04 6'			012	PLEASE HOLD									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/24/22	1060				3/24/22	1000
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/24/22	1900		CHE COUR		3/25/22	0723

Remarks:

CC: M. Peppin Final results

2.9-0=2.9

1.6-0=1.6

2.8-0=2.8

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.

Chain-of-Custody Record

Client: EOG

Chase Settle

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day

☑ Standard ☐ Rush

Project Name: Warren AN W Federal #3

Project #: 22E -

Project Manager: Monica Peppin

Sampler: MP

On Ice: ☑ Yes ☐ No

# of Coolers: 3

Cooler Temp (including CF): See first page (°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.
3/23	12:00	Soil	BH22-05 0'	4 oz	ice	013
	12:05		BH22-05 2'			014
	12:10		BH22-05 4'			015

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
					3/24/22	1000
Date: 3/24/22	Time: 1900	Relinquished by:	Received by:	Via:	Date	Time
					3/25/22	0723

Remarks:

cc: M. Peppin final report

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.

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

April 04, 2022

Monica Peppin

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

RE: Warren ANW Federal 3 OrderNo.: 2203E12

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/26/2022 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 **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-08 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 1:30:00 PM
Lab ID: 2203E12-001 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 5:29:18 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/30/2022 12:35:09 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 12:35:09 PM	66475
Surr: DNOP	81.5	51.1-141		%Rec	1	3/30/2022 12:35:09 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 2:05:00 PM	66457
Surr: BFB	105	37.7-212		%Rec	1	3/30/2022 2:05:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 2:05:00 PM	66457
Toluene	ND	0.048		mg/Kg	1	3/30/2022 2:05:00 PM	66457
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 2:05:00 PM	66457
Xylenes, Total	ND	0.096		mg/Kg	1	3/30/2022 2:05:00 PM	66457
Surr: 4-Bromofluorobenzene	85.3	70-130		%Rec	1	3/30/2022 2:05:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-08 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 1:40:00 PM
Lab ID: 2203E12-002 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	320	61		mg/Kg	20	4/1/2022 6:31:21 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/30/2022 1:06:51 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 1:06:51 PM	66475
Surr: DNOP	76.4	51.1-141		%Rec	1	3/30/2022 1:06:51 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 3:05:00 PM	66457
Surr: BFB	104	37.7-212		%Rec	1	3/30/2022 3:05:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 3:05:00 PM	66457
Toluene	ND	0.049		mg/Kg	1	3/30/2022 3:05:00 PM	66457
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 3:05:00 PM	66457
Xylenes, Total	ND	0.098		mg/Kg	1	3/30/2022 3:05:00 PM	66457
Surr: 4-Bromofluorobenzene	85.5	70-130		%Rec	1	3/30/2022 3:05:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-08 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 2:00:00 PM
Lab ID: 2203E12-003 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 6:43:46 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/30/2022 1:17:25 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 1:17:25 PM	66475
Surr: DNOP	75.3	51.1-141		%Rec	1	3/30/2022 1:17:25 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/30/2022 4:04:00 PM	66457
Surr: BFB	106	37.7-212		%Rec	1	3/30/2022 4:04:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 4:04:00 PM	66457
Toluene	ND	0.047		mg/Kg	1	3/30/2022 4:04:00 PM	66457
Ethylbenzene	ND	0.047		mg/Kg	1	3/30/2022 4:04:00 PM	66457
Xylenes, Total	ND	0.095		mg/Kg	1	3/30/2022 4:04:00 PM	66457
Surr: 4-Bromofluorobenzene	85.5	70-130		%Rec	1	3/30/2022 4:04:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-08 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 2:10:00 PM
Lab ID: 2203E12-004 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	570	60		mg/Kg	20	4/1/2022 6:56:11 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/30/2022 1:28:02 PM	66475
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 1:28:02 PM	66475
Surr: DNOP	71.6	51.1-141		%Rec	1	3/30/2022 1:28:02 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 4:24:00 PM	66457
Surr: BFB	106	37.7-212		%Rec	1	3/30/2022 4:24:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 4:24:00 PM	66457
Toluene	ND	0.049		mg/Kg	1	3/30/2022 4:24:00 PM	66457
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 4:24:00 PM	66457
Xylenes, Total	ND	0.098		mg/Kg	1	3/30/2022 4:24:00 PM	66457
Surr: 4-Bromofluorobenzene	87.9	70-130		%Rec	1	3/30/2022 4:24:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-06 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 12:30:00 PM
Lab ID: 2203E12-005 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	61		mg/Kg	20	4/1/2022 7:08:35 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/30/2022 1:38:39 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 1:38:39 PM	66475
Surr: DNOP	85.4	51.1-141		%Rec	1	3/30/2022 1:38:39 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/30/2022 4:44:00 PM	66457
Surr: BFB	102	37.7-212		%Rec	1	3/30/2022 4:44:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.023		mg/Kg	1	3/30/2022 4:44:00 PM	66457
Toluene	ND	0.046		mg/Kg	1	3/30/2022 4:44:00 PM	66457
Ethylbenzene	ND	0.046		mg/Kg	1	3/30/2022 4:44:00 PM	66457
Xylenes, Total	ND	0.092		mg/Kg	1	3/30/2022 4:44:00 PM	66457
Surr: 4-Bromofluorobenzene	83.1	70-130		%Rec	1	3/30/2022 4:44:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-06 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 12:40:00 PM
Lab ID: 2203E12-006 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 7:20:59 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/30/2022 1:49:20 PM	66475
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/30/2022 1:49:20 PM	66475
Surr: DNOP	82.8	51.1-141		%Rec	1	3/30/2022 1:49:20 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 5:03:00 PM	66457
Surr: BFB	97.1	37.7-212		%Rec	1	3/30/2022 5:03:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 5:03:00 PM	66457
Toluene	ND	0.049		mg/Kg	1	3/30/2022 5:03:00 PM	66457
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 5:03:00 PM	66457
Xylenes, Total	ND	0.097		mg/Kg	1	3/30/2022 5:03:00 PM	66457
Surr: 4-Bromofluorobenzene	81.8	70-130		%Rec	1	3/30/2022 5:03:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-07 0'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 1:00:00 PM
Lab ID: 2203E12-007 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	4/1/2022 7:33:24 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/30/2022 2:00:03 PM	66475
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2022 2:00:03 PM	66475
Surr: DNOP	71.0	51.1-141		%Rec	1	3/30/2022 2:00:03 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/30/2022 5:23:00 PM	66457
Surr: BFB	97.4	37.7-212		%Rec	1	3/30/2022 5:23:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.023		mg/Kg	1	3/30/2022 5:23:00 PM	66457
Toluene	ND	0.046		mg/Kg	1	3/30/2022 5:23:00 PM	66457
Ethylbenzene	ND	0.046		mg/Kg	1	3/30/2022 5:23:00 PM	66457
Xylenes, Total	ND	0.092		mg/Kg	1	3/30/2022 5:23:00 PM	66457
Surr: 4-Bromofluorobenzene	79.5	70-130		%Rec	1	3/30/2022 5:23:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E12**
Date Reported: **4/4/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-07 4'
Project: Warren ANW Federal 3
Collection Date: 3/23/2022 1:10:00 PM
Lab ID: 2203E12-008 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	320	60		mg/Kg	20	4/1/2022 7:45:50 AM	66550
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/30/2022 2:36:41 PM	66475
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/30/2022 2:36:41 PM	66475
Surr: DNOP	75.4	51.1-141		%Rec	1	3/30/2022 2:36:41 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 6:22:00 PM	66457
Surr: BFB	103	37.7-212		%Rec	1	3/30/2022 6:22:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 6:22:00 PM	66457
Toluene	ND	0.048		mg/Kg	1	3/30/2022 6:22:00 PM	66457
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 6:22:00 PM	66457
Xylenes, Total	ND	0.096		mg/Kg	1	3/30/2022 6:22:00 PM	66457
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	3/30/2022 6:22:00 PM	66457

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E12**
04-Apr-22

Client: EOG
Project: Warren ANW Federal 3

Sample ID: **MB-66550**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **66550**	RunNo: **86885**							
Prep Date: **3/31/2022**	Analysis Date: **4/1/2022**	SeqNo: **3070608**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-66550**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **66550**	RunNo: **86885**							
Prep Date: **3/31/2022**	Analysis Date: **4/1/2022**	SeqNo: **3070609**	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E12**

04-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **LCS-66475** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **66475** RunNo: **86840**

Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	68.9	135			
Surr: DNOP	4.5		5.000		89.8	51.1	141			

Sample ID: **MB-66475** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **66475** RunNo: **86840**

Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067457** 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	9.4		10.00		94.4	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E12**

04-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **lcs-66457**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068287** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	114	72.3	137			
Surr: BFB	2300		1000		231	37.7	212			S

Sample ID: **mb-66457**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068289** 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		106	37.7	212			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E12**

04-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **lcs-66457**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068372** 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	90.6	80	120			
Toluene	0.93	0.050	1.000	0	92.5	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		87.1	70	130			

Sample ID: **mb-66457**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068373** 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		84.7	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG Work Order Number: 2203E12 RcptNo: 1

Received By: **Tracy Casarrubias** 3/26/2022 1:50:00 PM

Completed By: **Tracy Casarrubias** 3/26/2022 10:13:15 AM

Reviewed By: **Tracy Casarrubias** 3/26/2022 2:17:23 PM

KPG 3/28/22

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 3/28/22

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	5.1	Good	Yes			
2	5.8	Good	Yes			

Chain-of-Custody Record

Client: EOG

Chase Settle

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day

☑ Standard ☐ Rush

Project Name: Warren ANW Federal #3

Project #: 22E-00954

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 5.1 Ø = 5.1 (°C)

5.6 - 0 = 5.6

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. 2203E12	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)
3/23	1:30	Soil	BH22-08 0'	4 oz	ice	001	✓	✓					✓			
"	1:40	"	BH22-08 4'	"	"	002	"	"					"			
"	2:00	"	BH22-08 0'	"	"	003	"	"					"			
"	2:10	"	BH22-08 4'	"	"	004	"	"					"			
	12:30		BH22-06 0'	"	"	005	"	"					"			
	12:40		BH22-06 4'	"	"	006	"	"					"			
	1:00		BH22-07 0'	"	"	007	"	"					"			
	1:10		BH22-07 4'	"	"	008	"	"					"			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/25/22	1135				3/25/22	1135
3/25/22	1900				8/26/22	1315

Remarks:

CC: M. Peppin Final Report

Direct bill 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

April 11, 2022

Monica Peppin

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

RE: Warren ANW Federal 3 OrderNo.: 2203E17

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/26/2022 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 **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-10 0'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203E17-001 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	16000	610		mg/Kg	200	4/4/2022 12:24:24 PM	66562
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	360	40		mg/Kg	5	3/31/2022 10:46:50 PM	66475
Motor Oil Range Organics (MRO)	380	200		mg/Kg	5	3/31/2022 10:46:50 PM	66475
Surr: DNOP	78.6	51.1-141		%Rec	5	3/31/2022 10:46:50 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/30/2022 6:42:00 PM	66457
Surr: BFB	112	37.7-212		%Rec	5	3/30/2022 6:42:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.12		mg/Kg	5	3/30/2022 6:42:00 PM	66457
Toluene	ND	0.24		mg/Kg	5	3/30/2022 6:42:00 PM	66457
Ethylbenzene	ND	0.24		mg/Kg	5	3/30/2022 6:42:00 PM	66457
Xylenes, Total	ND	0.48		mg/Kg	5	3/30/2022 6:42:00 PM	66457
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	5	3/30/2022 6:42:00 PM	66457

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-10 4'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 9:30:00 AM
Lab ID: 2203E17-002 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	5700	300		mg/Kg	100	4/4/2022 12:36:48 PM	66562
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/30/2022 2:58:20 PM	66475
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2022 2:58:20 PM	66475
Surr: DNOP	87.4	51.1-141		%Rec	1	3/30/2022 2:58:20 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 7:02:00 PM	66457
Surr: BFB	107	37.7-212		%Rec	1	3/30/2022 7:02:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 7:02:00 PM	66457
Toluene	ND	0.048		mg/Kg	1	3/30/2022 7:02:00 PM	66457
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 7:02:00 PM	66457
Xylenes, Total	ND	0.097		mg/Kg	1	3/30/2022 7:02:00 PM	66457
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	3/30/2022 7:02:00 PM	66457

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-11 0'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 9:45:00 AM
Lab ID: 2203E17-003 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	460	60		mg/Kg	20	4/1/2022 7:01:04 PM	66562
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**SB**
Diesel Range Organics (DRO)	600	190		mg/Kg	20	3/30/2022 3:19:52 PM	66475
Motor Oil Range Organics (MRO)	1100	970		mg/Kg	20	3/30/2022 3:19:52 PM	66475
Surr: DNOP	0	51.1-141	S	%Rec	20	3/30/2022 3:19:52 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	3/30/2022 7:23:00 PM	66457
Surr: BFB	108	37.7-212		%Rec	5	3/30/2022 7:23:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.12		mg/Kg	5	3/30/2022 7:23:00 PM	66457
Toluene	ND	0.25		mg/Kg	5	3/30/2022 7:23:00 PM	66457
Ethylbenzene	ND	0.25		mg/Kg	5	3/30/2022 7:23:00 PM	66457
Xylenes, Total	ND	0.50		mg/Kg	5	3/30/2022 7:23:00 PM	66457
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	5	3/30/2022 7:23:00 PM	66457

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-11 4'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 9:45:00 AM
Lab ID: 2203E17-004 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	2600	150		mg/Kg	50	4/4/2022 12:49:13 PM	66562
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/30/2022 3:30:43 PM	66475
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/30/2022 3:30:43 PM	66475
Surr: DNOP	96.7	51.1-141		%Rec	1	3/30/2022 3:30:43 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 7:43:00 PM	66457
Surr: BFB	103	37.7-212		%Rec	1	3/30/2022 7:43:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 7:43:00 PM	66457
Toluene	ND	0.048		mg/Kg	1	3/30/2022 7:43:00 PM	66457
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 7:43:00 PM	66457
Xylenes, Total	ND	0.097		mg/Kg	1	3/30/2022 7:43:00 PM	66457
Surr: 4-Bromofluorobenzene	85.9	70-130		%Rec	1	3/30/2022 7:43:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-12 0'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 10:00:00 AM
Lab ID: 2203E17-005 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	ND	60		mg/Kg	20	4/1/2022 1:06:32 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	96	8.6		mg/Kg	1	4/4/2022 2:05:51 PM	66475
Motor Oil Range Organics (MRO)	240	43		mg/Kg	1	4/4/2022 2:05:51 PM	66475
Surr: DNOP	119	51.1-141		%Rec	1	4/4/2022 2:05:51 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/30/2022 8:03:00 PM	66457
Surr: BFB	101	37.7-212		%Rec	1	3/30/2022 8:03:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	3/30/2022 8:03:00 PM	66457
Toluene	ND	0.049		mg/Kg	1	3/30/2022 8:03:00 PM	66457
Ethylbenzene	ND	0.049		mg/Kg	1	3/30/2022 8:03:00 PM	66457
Xylenes, Total	ND	0.099		mg/Kg	1	3/30/2022 8:03:00 PM	66457
Surr: 4-Bromofluorobenzene	83.7	70-130		%Rec	1	3/30/2022 8:03:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-12 4'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 10:00:00 AM
Lab ID: 2203E17-006 **Matrix:** SOIL
Received Date: 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LRN**	
Chloride	ND	60		mg/Kg	20	4/1/2022 1:18:54 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/30/2022 3:52:26 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 3:52:26 PM	66475
Surr: DNOP	88.7	51.1-141		%Rec	1	3/30/2022 3:52:26 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/30/2022 8:23:00 PM	66457
Surr: BFB	98.4	37.7-212		%Rec	1	3/30/2022 8:23:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.023		mg/Kg	1	3/30/2022 8:23:00 PM	66457
Toluene	ND	0.047		mg/Kg	1	3/30/2022 8:23:00 PM	66457
Ethylbenzene	ND	0.047		mg/Kg	1	3/30/2022 8:23:00 PM	66457
Xylenes, Total	ND	0.094		mg/Kg	1	3/30/2022 8:23:00 PM	66457
Surr: 4-Bromofluorobenzene	79.7	70-130		%Rec	1	3/30/2022 8:23:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-13 0'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 1:15:00 PM
Lab ID: 2203E17-007 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	770	60		mg/Kg	20	4/1/2022 1:31:14 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/30/2022 4:03:15 PM	66475
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/30/2022 4:03:15 PM	66475
Surr: DNOP	90.8	51.1-141		%Rec	1	3/30/2022 4:03:15 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/30/2022 8:43:00 PM	66457
Surr: BFB	103	37.7-212		%Rec	5	3/30/2022 8:43:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.12		mg/Kg	5	3/30/2022 8:43:00 PM	66457
Toluene	ND	0.24		mg/Kg	5	3/30/2022 8:43:00 PM	66457
Ethylbenzene	ND	0.24		mg/Kg	5	3/30/2022 8:43:00 PM	66457
Xylenes, Total	ND	0.48		mg/Kg	5	3/30/2022 8:43:00 PM	66457
Surr: 4-Bromofluorobenzene	83.9	70-130		%Rec	5	3/30/2022 8:43:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-13 1'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 1:15:00 PM
Lab ID: 2203E17-008 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LRN**
Chloride	2800	150		mg/Kg	50	4/4/2022 4:20:08 PM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**SB**
Diesel Range Organics (DRO)	37	8.7		mg/Kg	1	3/30/2022 4:14:07 PM	66475
Motor Oil Range Organics (MRO)	56	43		mg/Kg	1	3/30/2022 4:14:07 PM	66475
Surr: DNOP	93.6	51.1-141		%Rec	1	3/30/2022 4:14:07 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**BRM**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/30/2022 9:03:00 PM	66457
Surr: BFB	95.9	37.7-212		%Rec	1	3/30/2022 9:03:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst:	**BRM**
Benzene	ND	0.023		mg/Kg	1	3/30/2022 9:03:00 PM	66457
Toluene	ND	0.046		mg/Kg	1	3/30/2022 9:03:00 PM	66457
Ethylbenzene	ND	0.046		mg/Kg	1	3/30/2022 9:03:00 PM	66457
Xylenes, Total	ND	0.092		mg/Kg	1	3/30/2022 9:03:00 PM	66457
Surr: 4-Bromofluorobenzene	78.7	70-130		%Rec	1	3/30/2022 9:03:00 PM	66457

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2203E17**
Date Reported: **4/11/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-14 1'
Project: Warren ANW Federal 3
Collection Date: 3/24/2022 1:45:00 PM
Lab ID: 2203E17-009 **Matrix:** SOIL **Received Date:** 3/26/2022 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4400	150		mg/Kg	50	4/6/2022 10:37:54 AM	66575
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	26	8.9		mg/Kg	1	3/30/2022 4:35:36 PM	66475
Motor Oil Range Organics (MRO)	47	45		mg/Kg	1	3/30/2022 4:35:36 PM	66475
Surr: DNOP	96.1	51.1-141		%Rec	1	3/30/2022 4:35:36 PM	66475
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/30/2022 9:23:00 PM	66457
Surr: BFB	96.0	37.7-212		%Rec	1	3/30/2022 9:23:00 PM	66457
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	3/30/2022 9:23:00 PM	66457
Toluene	ND	0.048		mg/Kg	1	3/30/2022 9:23:00 PM	66457
Ethylbenzene	ND	0.048		mg/Kg	1	3/30/2022 9:23:00 PM	66457
Xylenes, Total	ND	0.096		mg/Kg	1	3/30/2022 9:23:00 PM	66457
Surr: 4-Bromofluorobenzene	78.5	70-130		%Rec	1	3/30/2022 9:23:00 PM	66457

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2203E17**

11-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **MB-66562**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66562**	RunNo: **86923**
Prep Date: **4/1/2022**	Analysis Date: **4/1/2022**	SeqNo: **3072115** Units: **mg/Kg**

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

Sample ID: **LCS-66562**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66562**	RunNo: **86923**
Prep Date: **4/1/2022**	Analysis Date: **4/1/2022**	SeqNo: **3072116** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.2	90	110			

Sample ID: **MB-66575**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **66575**	RunNo: **86918**
Prep Date: **4/1/2022**	Analysis Date: **4/1/2022**	SeqNo: **3072574** Units: **mg/Kg**

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

Sample ID: **LCS-66575**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **66575**	RunNo: **86918**
Prep Date: **4/1/2022**	Analysis Date: **4/1/2022**	SeqNo: **3072575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E17**

11-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **LCS-66475** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **66475** RunNo: **86840**

Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	68.9	135			
Surr: DNOP	4.5		5.000		89.8	51.1	141			

Sample ID: **MB-66475** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **66475** RunNo: **86840**

Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3067457** 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	9.4		10.00		94.4	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E17**
11-Apr-22

Client: EOG
Project: Warren ANW Federal 3

Sample ID: **lcs-66457** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **66457** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068287** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	114	72.3	137			
Surr: BFB	2300		1000		231	37.7	212			S

Sample ID: **mb-66457** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **66457** RunNo: **86864**
Prep Date: **3/29/2022** Analysis Date: **3/30/2022** SeqNo: **3068289** 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		106	37.7	212			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2203E17**

11-Apr-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **lcs-66457**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068372** 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	90.6	80	120			
Toluene	0.93	0.050	1.000	0	92.5	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		87.1	70	130			

Sample ID: **mb-66457**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **66457**	RunNo: **86864**
Prep Date: **3/29/2022**	Analysis Date: **3/30/2022**	SeqNo: **3068373** 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		84.7	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG Resources Work Order Number: 2203E17 RcptNo: 1

Received By: Tracy Casarrubias 3/26/2022 1:50:00 PM

Completed By: Tracy Casarrubias 3/26/2022 2:08:27 PM

Reviewed By: KPA 3/28/22

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: JR 3/28/22

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	5.1	Good	Yes			
2	5.8	Good	Yes			

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:
☑ Standard ☐ Rush 5 days

Project Name: Warren ANW Federal #3

Project #: 22E-00954

Project Manager: Monica Peppin

Sampler: Sally Carttar

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 5.1-0=5.1 (°C) 5.8-0=5.8

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. 2203617
3/24	9:30	Soil	BH22-10 0'	4oz jar	ice	001
	9:30		BH22-10 4'			002
	9:45		BH22-11 0'			003
	9:45		BH22-11 4'			004
	10:00		BH22-12 0'			005
	10:00		BH22-12 4'			006
	13:15		BH22-13 0'			007
	13:15		BH22-13 1'			008
	13:45		BH22-14 1'			009

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
			CCummings		3/25/22	1135
3/25/22	1900	ACummings				
					3/26/22	1350

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.

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 13, 2022

Monica Peppin

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

RE: Warren ANW Federal 3 OrderNo.: 2204D49

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/30/2022 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 **2204D49**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-15 0'
Project: Warren ANW Federal 3
Collection Date: 4/28/2022 2:15:00 PM
Lab ID: 2204D49-001 **Matrix:** SOIL **Received Date:** 4/30/2022 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	73	60		mg/Kg	20	5/6/2022 4:53:00 AM	67297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	410	44		mg/Kg	5	5/9/2022 4:06:19 PM	67249
Motor Oil Range Organics (MRO)	870	220		mg/Kg	5	5/9/2022 4:06:19 PM	67249
Surr: DNOP	112	51.1-141		%Rec	5	5/9/2022 4:06:19 PM	67249
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2022 6:16:00 AM	67229
Surr: BFB	97.4	37.7-212		%Rec	1	5/5/2022 6:16:00 AM	67229
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	5/5/2022 6:16:00 AM	67229
Toluene	ND	0.049		mg/Kg	1	5/5/2022 6:16:00 AM	67229
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2022 6:16:00 AM	67229
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2022 6:16:00 AM	67229
Surr: 4-Bromofluorobenzene	79.8	70-130		%Rec	1	5/5/2022 6:16:00 AM	67229

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204D49**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-15 2'
Project: Warren ANW Federal 3
Collection Date: 4/28/2022 2:30:00 PM
Lab ID: 2204D49-002 **Matrix:** SOIL
Received Date: 4/30/2022 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	5/6/2022 5:05:24 AM	67297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	22	9.8		mg/Kg	1	5/5/2022 4:58:46 PM	67249
Motor Oil Range Organics (MRO)	53	49		mg/Kg	1	5/5/2022 4:58:46 PM	67249
Surr: DNOP	107	51.1-141		%Rec	1	5/5/2022 4:58:46 PM	67249
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2022 10:25:00 AM	67229
Surr: BFB	103	37.7-212		%Rec	1	5/5/2022 10:25:00 AM	67229
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	5/5/2022 10:25:00 AM	67229
Toluene	ND	0.050		mg/Kg	1	5/5/2022 10:25:00 AM	67229
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2022 10:25:00 AM	67229
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2022 10:25:00 AM	67229
Surr: 4-Bromofluorobenzene	83.1	70-130		%Rec	1	5/5/2022 10:25:00 AM	67229

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2204D49**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-18 0'
Project: Warren ANW Federal 3
Collection Date: 4/28/2022 11:15:00 AM
Lab ID: 2204D49-003 **Matrix:** SOIL **Received Date:** 4/30/2022 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **NAI**	
Chloride	2800	150		mg/Kg	50	5/6/2022 1:00:40 PM	67297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/5/2022 5:25:53 PM	67249
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/5/2022 5:25:53 PM	67249
Surr: DNOP	94.7	51.1-141		%Rec	1	5/5/2022 5:25:53 PM	67249
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2022 10:45:00 AM	67229
Surr: BFB	107	37.7-212		%Rec	1	5/5/2022 10:45:00 AM	67229
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.025		mg/Kg	1	5/5/2022 10:45:00 AM	67229
Toluene	ND	0.050		mg/Kg	1	5/5/2022 10:45:00 AM	67229
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2022 10:45:00 AM	67229
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2022 10:45:00 AM	67229
Surr: 4-Bromofluorobenzene	87.9	70-130		%Rec	1	5/5/2022 10:45:00 AM	67229

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2204D49**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-18 2'
Project: Warren ANW Federal 3
Collection Date: 4/28/2022 11:25:00 AM
Lab ID: 2204D49-004 **Matrix:** SOIL
Received Date: 4/30/2022 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	440	60		mg/Kg	20	5/6/2022 5:30:13 AM	67297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/5/2022 5:39:31 PM	67249
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2022 5:39:31 PM	67249
Surr: DNOP	104	51.1-141		%Rec	1	5/5/2022 5:39:31 PM	67249
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2022 11:04:00 AM	67229
Surr: BFB	106	37.7-212		%Rec	1	5/5/2022 11:04:00 AM	67229
EPA METHOD 8021B: VOLATILES						Analyst: **BRM**	
Benzene	ND	0.024		mg/Kg	1	5/5/2022 11:04:00 AM	67229
Toluene	ND	0.049		mg/Kg	1	5/5/2022 11:04:00 AM	67229
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2022 11:04:00 AM	67229
Xylenes, Total	ND	0.097		mg/Kg	1	5/5/2022 11:04:00 AM	67229
Surr: 4-Bromofluorobenzene	87.3	70-130		%Rec	1	5/5/2022 11:04:00 AM	67229

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204D49**

13-May-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **MB-67297**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **67297**	RunNo: **87792**
Prep Date: **5/5/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110210** Units: **mg/Kg**

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

Sample ID: **LCS-67297**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **67297**	RunNo: **87792**
Prep Date: **5/5/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110211** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204D49**

13-May-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **MB-67249**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **67249**	RunNo: **87770**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110446** 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	9.7		10.00		97.1	51.1	141			

Sample ID: **LCS-67249**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **67249**	RunNo: **87770**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110447** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.9	68.9	135			
Surr: DNOP	5.0		5.000		99.0	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204D49**

13-May-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **lcs-67229**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67229**	RunNo: **87721**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3107557** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	72.3	137			
Surr: BFB	2200		1000		224	37.7	212			S

Sample ID: **mb-67229**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67229**	RunNo: **87721**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3107558** 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	1000		1000		102	37.7	212			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2204D49**

13-May-22

Client: EOG

Project: Warren ANW Federal 3

Sample ID: **lcs-67229**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **67229**	RunNo: **87721**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3107604** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.7	80	120			
Toluene	0.91	0.050	1.000	0	90.7	80	120			
Ethylbenzene	0.91	0.050	1.000	0	90.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.5	80	120			
Surr: 4-Bromofluorobenzene	0.83		1.000		82.8	70	130			

Sample ID: **mb-67229**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **67229**	RunNo: **87721**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3107605** 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	0.84		1.000		83.7	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: 2204D49 RcptNo: 1

Received By: **Juan Rojas** 4/30/2022 8:30:00 AM

Completed By: **Juan Rojas** 4/30/2022 9:56:51 AM

Reviewed By: KPG 5.2.22 ~~4-2~~ 5.2.22

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: JN 4/30/22

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	0.1	Good				

Chain-of-Custody Record

Client: EOG / C Settle

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 5 DAY

Project Name: Warren ANW Federal #3

Project #: 22E-00954

Project Manager: Monica Peppin

Sampler: Sally Carthar

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.2-0.1=0.1 (°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. 2204049	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)
4/28	14:15	soil	BH22-15 0'	4oz jar	ice	-001	✓	✓					✓			
"	14:30	"	BH22-15 2'	"	"	-002	"	"					"			
"	11:15	"	BH22-18 0'	"	"	003	"	"					"			
"	11:25	"	BH22-18 2'	"	"	-004	"	"					"			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			Cummings		4/29/22	900
4/29/22	1900	Cummings		courier	4/30/22	8:30

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.

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 13, 2022

Monica Peppin

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

RE: Warren AN W Federal 3 OrderNo.: 2205061

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/3/2022 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 **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-09 0'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 9:10:00 AM
Lab ID: 2205061-001 **Matrix:** SOIL
Received Date: 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	5/9/2022 6:22:08 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2022 10:08:23 PM	67237
Surr: BFB	109	70-130		%Rec	1	5/5/2022 10:08:23 PM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **ED**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/6/2022 12:52:14 AM	67261
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/6/2022 12:52:14 AM	67261
Surr: DNOP	74.0	51.1-141		%Rec	1	5/6/2022 12:52:14 AM	67261
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.023		mg/Kg	1	5/5/2022 10:08:23 PM	67237
Toluene	ND	0.047		mg/Kg	1	5/5/2022 10:08:23 PM	67237
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2022 10:08:23 PM	67237
Xylenes, Total	ND	0.093		mg/Kg	1	5/5/2022 10:08:23 PM	67237
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%Rec	1	5/5/2022 10:08:23 PM	67237
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	5/5/2022 10:08:23 PM	67237
Surr: Dibromofluoromethane	121	70-130		%Rec	1	5/5/2022 10:08:23 PM	67237
Surr: Toluene-d8	91.3	70-130		%Rec	1	5/5/2022 10:08:23 PM	67237

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-09 2'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 9:15:00 AM
Lab ID: 2205061-002 **Matrix:** SOIL
Received Date: 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	5/9/2022 6:34:33 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/6/2022 12:31:04 AM	67237
Surr: BFB	110	70-130		%Rec	1	5/6/2022 12:31:04 AM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/7/2022 2:47:06 AM	67262
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/7/2022 2:47:06 AM	67262
Surr: DNOP	77.0	51.1-141		%Rec	1	5/7/2022 2:47:06 AM	67262
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.025		mg/Kg	1	5/6/2022 12:31:04 AM	67237
Toluene	ND	0.049		mg/Kg	1	5/6/2022 12:31:04 AM	67237
Ethylbenzene	ND	0.049		mg/Kg	1	5/6/2022 12:31:04 AM	67237
Xylenes, Total	ND	0.098		mg/Kg	1	5/6/2022 12:31:04 AM	67237
Surr: 1,2-Dichloroethane-d4	92.7	70-130		%Rec	1	5/6/2022 12:31:04 AM	67237
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	5/6/2022 12:31:04 AM	67237
Surr: Dibromofluoromethane	114	70-130		%Rec	1	5/6/2022 12:31:04 AM	67237
Surr: Toluene-d8	90.4	70-130		%Rec	1	5/6/2022 12:31:04 AM	67237

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-16 0'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 9:45:00 AM
Lab ID: 2205061-003 **Matrix:** SOIL
Received Date: 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	18000	1500		mg/Kg	500	5/10/2022 1:46:12 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/6/2022 12:59:36 AM	67237
Surr: BFB	111	70-130		%Rec	1	5/6/2022 12:59:36 AM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	400	180		mg/Kg	20	5/7/2022 3:10:48 AM	67262
Motor Oil Range Organics (MRO)	950	890		mg/Kg	20	5/7/2022 3:10:48 AM	67262
Surr: DNOP	0	51.1-141	S	%Rec	20	5/7/2022 3:10:48 AM	67262
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.025		mg/Kg	1	5/6/2022 12:59:36 AM	67237
Toluene	ND	0.050		mg/Kg	1	5/6/2022 12:59:36 AM	67237
Ethylbenzene	ND	0.050		mg/Kg	1	5/6/2022 12:59:36 AM	67237
Xylenes, Total	ND	0.10		mg/Kg	1	5/6/2022 12:59:36 AM	67237
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	1	5/6/2022 12:59:36 AM	67237
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	5/6/2022 12:59:36 AM	67237
Surr: Dibromofluoromethane	122	70-130		%Rec	1	5/6/2022 12:59:36 AM	67237
Surr: Toluene-d8	92.2	70-130		%Rec	1	5/6/2022 12:59:36 AM	67237

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-16 2'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 10:05:00 AM
Lab ID: 2205061-004 **Matrix:** SOIL **Received Date:** 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	6800	300		mg/Kg	100	5/10/2022 1:58:36 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/6/2022 1:28:15 AM	67237
Surr: BFB	111	70-130		%Rec	1	5/6/2022 1:28:15 AM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	74	9.6		mg/Kg	1	5/7/2022 3:34:28 AM	67262
Motor Oil Range Organics (MRO)	75	48		mg/Kg	1	5/7/2022 3:34:28 AM	67262
Surr: DNOP	110	51.1-141		%Rec	1	5/7/2022 3:34:28 AM	67262
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.024		mg/Kg	1	5/6/2022 1:28:15 AM	67237
Toluene	ND	0.048		mg/Kg	1	5/6/2022 1:28:15 AM	67237
Ethylbenzene	ND	0.048		mg/Kg	1	5/6/2022 1:28:15 AM	67237
Xylenes, Total	ND	0.096		mg/Kg	1	5/6/2022 1:28:15 AM	67237
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%Rec	1	5/6/2022 1:28:15 AM	67237
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	5/6/2022 1:28:15 AM	67237
Surr: Dibromofluoromethane	119	70-130		%Rec	1	5/6/2022 1:28:15 AM	67237
Surr: Toluene-d8	91.7	70-130		%Rec	1	5/6/2022 1:28:15 AM	67237

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-17 0'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 10:15:00 AM
Lab ID: 2205061-005 **Matrix:** SOIL
Received Date: 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	16000	600		mg/Kg	200	5/10/2022 2:11:00 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/6/2022 1:56:45 AM	67237
Surr: BFB	110	70-130		%Rec	1	5/6/2022 1:56:45 AM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	480	190		mg/Kg	20	5/7/2022 3:58:08 AM	67262
Motor Oil Range Organics (MRO)	1100	940		mg/Kg	20	5/7/2022 3:58:08 AM	67262
Surr: DNOP	0	51.1-141	S	%Rec	20	5/7/2022 3:58:08 AM	67262
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.024		mg/Kg	1	5/6/2022 1:56:45 AM	67237
Toluene	ND	0.048		mg/Kg	1	5/6/2022 1:56:45 AM	67237
Ethylbenzene	ND	0.048		mg/Kg	1	5/6/2022 1:56:45 AM	67237
Xylenes, Total	ND	0.097		mg/Kg	1	5/6/2022 1:56:45 AM	67237
Surr: 1,2-Dichloroethane-d4	94.8	70-130		%Rec	1	5/6/2022 1:56:45 AM	67237
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	1	5/6/2022 1:56:45 AM	67237
Surr: Dibromofluoromethane	118	70-130		%Rec	1	5/6/2022 1:56:45 AM	67237
Surr: Toluene-d8	91.6	70-130		%Rec	1	5/6/2022 1:56:45 AM	67237

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	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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-17 2'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 10:50:00 AM
Lab ID: 2205061-006 **Matrix:** SOIL **Received Date:** 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	10000	600		mg/Kg	200	5/10/2022 2:23:25 PM	67328
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/6/2022 2:25:07 AM	67237
Surr: BFB	107	70-130		%Rec	1	5/6/2022 2:25:07 AM	67237
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	12	9.4		mg/Kg	1	5/7/2022 4:22:02 AM	67262
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/7/2022 4:22:02 AM	67262
Surr: DNOP	112	51.1-141		%Rec	1	5/7/2022 4:22:02 AM	67262
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**	
Benzene	ND	0.024		mg/Kg	1	5/6/2022 2:25:07 AM	67237
Toluene	ND	0.048		mg/Kg	1	5/6/2022 2:25:07 AM	67237
Ethylbenzene	ND	0.048		mg/Kg	1	5/6/2022 2:25:07 AM	67237
Xylenes, Total	ND	0.095		mg/Kg	1	5/6/2022 2:25:07 AM	67237
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%Rec	1	5/6/2022 2:25:07 AM	67237
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	5/6/2022 2:25:07 AM	67237
Surr: Dibromofluoromethane	119	70-130		%Rec	1	5/6/2022 2:25:07 AM	67237
Surr: Toluene-d8	89.2	70-130		%Rec	1	5/6/2022 2:25:07 AM	67237

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-19 0'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 12:50:00 PM
Lab ID: 2205061-007 **Matrix:** SOIL **Received Date:** 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	ND	60		mg/Kg	20	5/9/2022 7:36:34 PM	67328
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/7/2022 4:45:43 AM	67262
Motor Oil Range Organics (MRO)	100	49		mg/Kg	1	5/7/2022 4:45:43 AM	67262
Surr: DNOP	107	51.1-141		%Rec	1	5/7/2022 4:45:43 AM	67262
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2022 6:49:04 PM	67243
Surr: BFB	103	37.7-212		%Rec	1	5/5/2022 6:49:04 PM	67243
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/5/2022 6:49:04 PM	67243
Toluene	ND	0.049		mg/Kg	1	5/5/2022 6:49:04 PM	67243
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2022 6:49:04 PM	67243
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2022 6:49:04 PM	67243
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	5/5/2022 6:49:04 PM	67243

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2205061**
Date Reported: **5/13/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BH22-19 2'
Project: Warren AN W Federal 3
Collection Date: 4/29/2022 1:30:00 PM
Lab ID: 2205061-008 **Matrix:** SOIL **Received Date:** 5/3/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	410	60		mg/Kg	20	5/9/2022 10:05:26 PM	67328
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/7/2022 5:09:26 AM	67262
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/7/2022 5:09:26 AM	67262
Surr: DNOP	93.7	51.1-141		%Rec	1	5/7/2022 5:09:26 AM	67262
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2022 7:59:22 PM	67243
Surr: BFB	102	37.7-212		%Rec	1	5/5/2022 7:59:22 PM	67243
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/5/2022 7:59:22 PM	67243
Toluene	ND	0.050		mg/Kg	1	5/5/2022 7:59:22 PM	67243
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2022 7:59:22 PM	67243
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2022 7:59:22 PM	67243
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/5/2022 7:59:22 PM	67243

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	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **MB-67328**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **67328**	RunNo: **87845**							
Prep Date: **5/6/2022**	Analysis Date: **5/9/2022**	SeqNo: **3112998**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-67328**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **67328**	RunNo: **87845**							
Prep Date: **5/6/2022**	Analysis Date: **5/9/2022**	SeqNo: **3112999**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **MB-67279**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67279**	RunNo: **87770**							
Prep Date: **5/5/2022**	Analysis Date: **5/5/2022**	SeqNo: **3108790**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		96.5	51.1	141			

Sample ID: **LCS-67279**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67279**	RunNo: **87770**							
Prep Date: **5/5/2022**	Analysis Date: **5/5/2022**	SeqNo: **3108791**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.1	51.1	141			

Sample ID: **LCS-67260**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67260**	RunNo: **87762**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109550**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.7		5.000		73.5	51.1	141			

Sample ID: **LCS-67262**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **67262**	RunNo: **87762**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109551**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	127	68.9	135			
Surr: DNOP	5.6		5.000		113	51.1	141			

Sample ID: **MB-67260**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67260**	RunNo: **87762**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109554**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		84.4	51.1	141			

Sample ID: **MB-67262**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **67262**	RunNo: **87762**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109555**	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		110	51.1	141			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **LCS-67261**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **67261**	RunNo: **87770**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110540** 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	81.4	68.9	135			
Surr: DNOP	4.7		5.000		93.5	51.1	141			

Sample ID: **MB-67261**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **67261**	RunNo: **87770**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3110541** 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	9.8		10.00		98.3	51.1	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **mb-67268**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67268**	RunNo: **87759**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109013** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	37.7	212			

Sample ID: **lcs-67268**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67268**	RunNo: **87759**
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109014** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		202	37.7	212			

Sample ID: **mb-67243**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **67243**	RunNo: **87759**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109031** 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	980		1000		98.4	37.7	212			

Sample ID: **lcs-67243**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67243**	RunNo: **87759**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109032** 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	96.9	72.3	137			
Surr: BFB	2100		1000		206	37.7	212			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **mb-67268**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **67268**	RunNo: **87759**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109057**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		100	70	130			

Sample ID: **LCS-67268**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **67268**	RunNo: **87759**							
Prep Date: **5/4/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109058**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: **mb-67243**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **67243**	RunNo: **87759**							
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109075**	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	0.99		1.000		99.2	70	130			

Sample ID: **LCS-67243**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **67243**	RunNo: **87759**							
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109076**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.8	80	120			
Toluene	0.92	0.050	1.000	0	92.2	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **mb-67237**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **67237**	RunNo: **87785**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109334** 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: 1,2-Dichloroethane-d4	0.48		0.5000		96.3	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.1	70	130			
Surr: Dibromofluoromethane	0.62		0.5000		123	70	130			
Surr: Toluene-d8	0.45		0.5000		90.7	70	130			

Sample ID: **LCS-67237**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **67237**	RunNo: **87830**
Prep Date: **5/3/2022**	Analysis Date: **5/6/2022**	SeqNo: **3111395** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	80	120			
Toluene	0.84	0.050	1.000	0	84.2	80	120			
Ethylbenzene	0.88	0.050	1.000	0	88.0	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.6	80	120			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.3	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.7	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: Toluene-d8	0.45		0.5000		90.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2205061**

13-May-22

Client: EOG

Project: Warren AN W Federal 3

Sample ID: **LCS-67237**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **67237**	RunNo: **87785**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109370** 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	94.9	70	130			
Surr: BFB	550		500.0		110	70	130			

Sample ID: **mb-67237**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **67237**	RunNo: **87785**
Prep Date: **5/3/2022**	Analysis Date: **5/5/2022**	SeqNo: **3109371** 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	550		500.0		110	70	130			

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	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: 2205061 | RcptNo: 1

Received By: **Juan Rojas** 5/3/2022 7:00:00 AM

Completed By: **Sean Livingston** 5/3/2022 8:38:01 AM

Reviewed By: KPG 5.3.22

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: JMS 5/3/22

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	1.7	Good				

Chain-of-Custody Record

Client: EOG / C Settle

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 5 Day

Project Name: Warren AN W Federal #3

Project #: 22E-00954

Project Manager: Monica Peppin

Sampler: Sally Carttar

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.6+0.1=1.7 (°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. 2205061	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)
4/29	9:10	soil	BH22-09 0'	4oz jar	ice	001	✓	✓					✓			
	9:15		BH22-09 2'			002										
	9:45		BH22-16 0'			003										
	10:05		BH22-16 2'			004										
	10:15		BH22-17 0'			005										
	10:50		BH22-17 2'			006										
	12:50		BH22-19 0'			007										
	13:30		BH22-19 2'			008										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			Acumming		5/2/22	1255
5/2/22	1900	Acumming		courier	5/3/22	7:00

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.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 205553

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 205553
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	A Remediation Plan has already been approved for this incident. Please move the site toward closure. Please let me know if you have any further questions.	8/29/2023