December 2, 2021 Vertex Project #: 21E-03278-04

Spill Closure Report: Dagger Draw Water System
Section 1, Township 20 South, Range 34 East
API: 30-015-26299
County: Eddy
Incident Report: NKMW1110142039/2RP-729

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

New Mexico Oil Conservation Division - District 2
811 South 1st Street
Artesia, New Mexico 88210

EOG Y Resources, Inc. (EOG) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release of produced water caused by a hole in the dresser sleeve on the poly line on the right-of-way on Dagger Draw Water System, API: 30-015-26299 (hereafter referred to as "Cooper ROW"). EOG provided notification to New Mexico Oil Conservation District (NMOCD) District 2 and the State of New Mexico Land Office, who own the land, via submission of an initial C-141 Release Notification (Attachment 1). The NMOCD tracking number assigned to this incident is NKMW1110142039/2RP-729. This letter provides a description of the Spill Assessment and includes a request for Spill Closure. The spill area is located at N 32.60511, W -104.54680.

Background

The site is located approximately seven miles West of Seven Rivers, New Mexico. The legal location for the site is Section 1, Township 20 South and Range 34 East in Eddy County, New Mexico. The spill area is located on State property. An aerial photograph and site schematic are included in Attachment 2.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2021) indicates the site's surface geology is comprised primarily of Qp - Piedmont alluvial deposits (Holocene to lower Pleistocene) and is characterized as Reagon loam. Predominant soil texture on the site is loamy. Ecological settings of the area consist of of grasslands with uniformly distributed grass patches on uncompacted soils. Dominant vegetation within this area includes black grama, tobosa, bunchgrasses, soaptree yucca, forbs, broom snakeweed, prickly pear and threeawns. Mesquite, tarbrush, creosote, and lovegrass are the greatest threat to dominate the area in the long term after disturbance.

The surrounding landscape is associated with alluvial fans and fan remnants typical of elevations between 1,100 to 4,400 feet above sea level. The climate is semi-arid with an average annual precipitation ranging between 7 to 14 inches. This soil tends to be well drained with low runoff and moderate available water supply (United States Department of Agriculture, Natural Resource Conservation Service, 2021).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 of the New Mexico Administrative Code (NMAC), is Brantley Lake, located approximately 8.58 miles east-southeast of the site (United States Fish and Wildlife Service, 2021). There are no continuously flowing watercourses, lakebeds, sinkholes, play lakes, or other critical water or community features at Cooper ROW, as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Incident Description

The spill occurred on June 22, 2010, due to a dresser sleeve developing a hole on a buried polyline and resulted in the release of approximately 100 bbls of produced water. Approximately 80 bbls was recovered during initial spill clean-up. The spill was reported on June 22, 2010, followed with an email. The NMOCD C-141 Report: NKMW1110142039/2RP-729 is included in Attachment 1. The Daily Field Report (DFR) and site photographs are included in Attachment 3.

Closure Criteria Determination

The depth to groundwater was determined using information from the New Mexico Office of the State Engineer Water Column/Average Depth to Water report and United States Department of the Interior, United States Geological Survey. A 0.5-mile search radius was used to determine groundwater depth. As there are no groundwater monitoring wells within the 0.5-mile radius and the site is located within pastureland, it was determined that the site must meet the strictest criteria for closure. The closest recorded depth to groundwater was determined to be 226 feet below ground surface (bgs) and 0.61 miles from the site. This site is also located within a high karst potential area and within 1,000 feet of a fresh water well. Documentation used in Closure Criteria Determination research is included in Attachment 4.

Closure Criteria Worksheet			
Site Name: Cooper AHH #1 Battery			
Spill Coordinates:		**X: 32.60511**	**Y: -104.54680**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**226**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	45,311	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	45,311	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	8,900	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**	710	feet
	ii) Within 1000 feet of any fresh water well or spring	**710**	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	2,097	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	**High**	Critical High Medium Low
10	Within a 100-year Floodplain	Zone X unshaded	year
11	Soil Type	Reagan Loam	
12	Ecological Classification	Loamy	
13	Geology	Qp	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'

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

Table 1. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/L TDS	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

Remedial Actions Taken

An initial site inspection of the spill area was completed on September 30, 2021, which identified the area of the spill specified in the initial C-141 Report, estimated the approximate volume of the spill and white lined the area required for the 811 One Call request. After the initial site inspection was completed, samples determined that there was no impacted area around the perimeter of the release location. The total area sampled was determined to be approximately 42 feet long and 32 feet wide; or 685 square feet. An aerial photograph and site schematic of the determined sampling area is included on Figure 1 (Attachment 2). The DFR associated with the site inspection is included in Attachment 3.

Field screening was completed on a total of four sample points and consisted of analysis using a photoionization detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and EC meter (chlorides). Field screening results were used to identify and differentiate areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were collected as discrete samples from 0 to 4 feet bgs, field screened for contaminants and sent for laboratory analysis. Laboratory analysis verified that no further remediation was needed and that the surrounding area could move to confirmation sampling. Field screening results are presented in Table 2 (Attachment 5).

EOG provided notification of confirmation sample collection to NMOCD on November 18, 2021, as required by Subparagraph (a) of Paragraph (1) of 19.15.29.12 NMAC (Attachment 6).

On November 23, 2021, Vertex collected six composite samples from the surrounding area ranging from 0 to 4 feet bgs. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NMOCD approval. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody (COC) protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 3 (Attachment 5), and the laboratory data report and COCs are included in Attachment 7. All confirmatory samples collected and analyzed were below closure criteria for the site.

A GeoExplorer 7000 series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations are present on Figure 2 (Attachment 2). Relevant equipment and prominent features/reference points at the site are mapped as well.

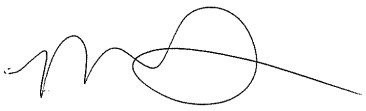
Closure Request

Vertex recommends no additional action to address the release at Cooper ROW. Laboratory analysis of confirmatory samples found constituent of concern concentrations to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a Release locations “under 50 feet to groundwater”. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident (NKMW1110142039/2RP-729) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. EOG certifies that all information in this report and the attachments

is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the June 22, 2010, release at Cooper ROW.

Should you have any questions or concerns, please do not hesitate to contact Monica Peppin at 575.361.9880 or mpeppin@vertex.ca.



December 8, 2021

Monica Peppin
SR. ENVIRONMENTAL TECHNICIAN, REPORTING

Date

December 8, 2021

Dhugal Hanton, B.Sc., P.Ag., SR/WA, P. Biol
VP – US OPERATIONS, REPORT REVIEW

Date

Attachments

Attachment 1. NMOCD C-141 Report
Attachment 2. Figures
Attachment 3. Daily Field Report with Pictures
Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 5. Characterization and Confirmatory Sampling Laboratory Results Tables
Attachment 6. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies
Attachment 7. Laboratory Data Reports and Chain of Custody Forms

References

Water Column/Average Depth to Water Report. New Mexico Water Rights Reporting System. (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

Assessed and Impaired Waters of New Mexico. New Mexico Department of Surface Water Quality Bureau, (2019). Retrieved from https://gis.web.env.nm.gov/oem/?map=swqb

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Interactive Geologic Map. New Mexico Bureau of Geology and Mineral Resources, (2021). Retrieved from http://geoinfo.nmt.edu

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Point of Diversion Location Report. New Mexico Water Rights Reporting System, (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html

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Well Log/Meter Information Report. NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html

Natural Resources and Wildlife Oil and Gas Releases. New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.

Soil Survey, New Mexico. United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

Limitations

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

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

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

nKmw 1110142039

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	OGRID Number	Contact
Yates Petroleum Corporation	25575	Robert Asher
Address		Telephone No.
104 S. 4TH Street		575-748-1471
Facility Name	API Number	Facility Type
Dagger Draw Water System	30-015-26299	Water Line

Surface Owner	Mineral Owner	Lease No.
Fee	State	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	1	20S	24E					Eddy

Latitude 32.60511 Longitude 104.54680

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced Water	100 B/PW	80 B/PW
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Water line	6/22/2010; PM	6/22/2010; PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Mike Bratcher/NMOCD Artesia
By Whom?	Date and Hour	
Robert Asher/Yates Petroleum Corporation	6/22/2010 (Voicemail & e-mail)	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	N/A

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Dresser sleeve on buried poly line developed hole, causing release. Vacuum truck called, line repaired.

Describe Area Affected and Cleanup Action Taken.*
An approximate area of 5' X 25'. Water line is located approximately 0.2 miles west of the Cooper AHH State #1 Tank Battery. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX. Chlorides will be documented. If results are above RRAL's for TPH & BTEX with the site ranking of zero (0), a work plan or corrective action plan will be submitted. If results are below RRAL's for TPH & BTEX with the site ranking of ten (10), a Final Report C-141 will be submitted requesting closure. **Depth to Ground Water: >100' (approximately 300' per the New Mexico Office of the State Engineer), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.**

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

Signature: Robert Asher

Printed Name: Robert Asher

Title: Environmental Regulatory Agent

E-mail Address: boba@yatespetroleum.com

Date: Monday, June 28, 2010 Phone: 575-748-4217

OIL CONSERVATION DIVISION

Approved by District Supervisor: Mike Bratcher

Approval Date: 4/11/11 Expiration Date:

Conditions of Approval:
Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 5/11/11

Attached ☐

2RP-729

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1110142039
District RP	2RP-729
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?	<50 (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
- ☐ N/A 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
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1110142039
District RP	2RP-729
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: Chase Settle Title: Rep Safety & Environmental Sr

Signature: Chase Settle Date: 02/08/2022

email: chase_settle@eogresources.com Telephone: 575-748-4171

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1110142039
District RP	2RP-729
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

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

Signature: Chase Settle Date: 02/08/2022

email: chase_settle@eogresources.com Telephone: 575-748-4171

OCD Only

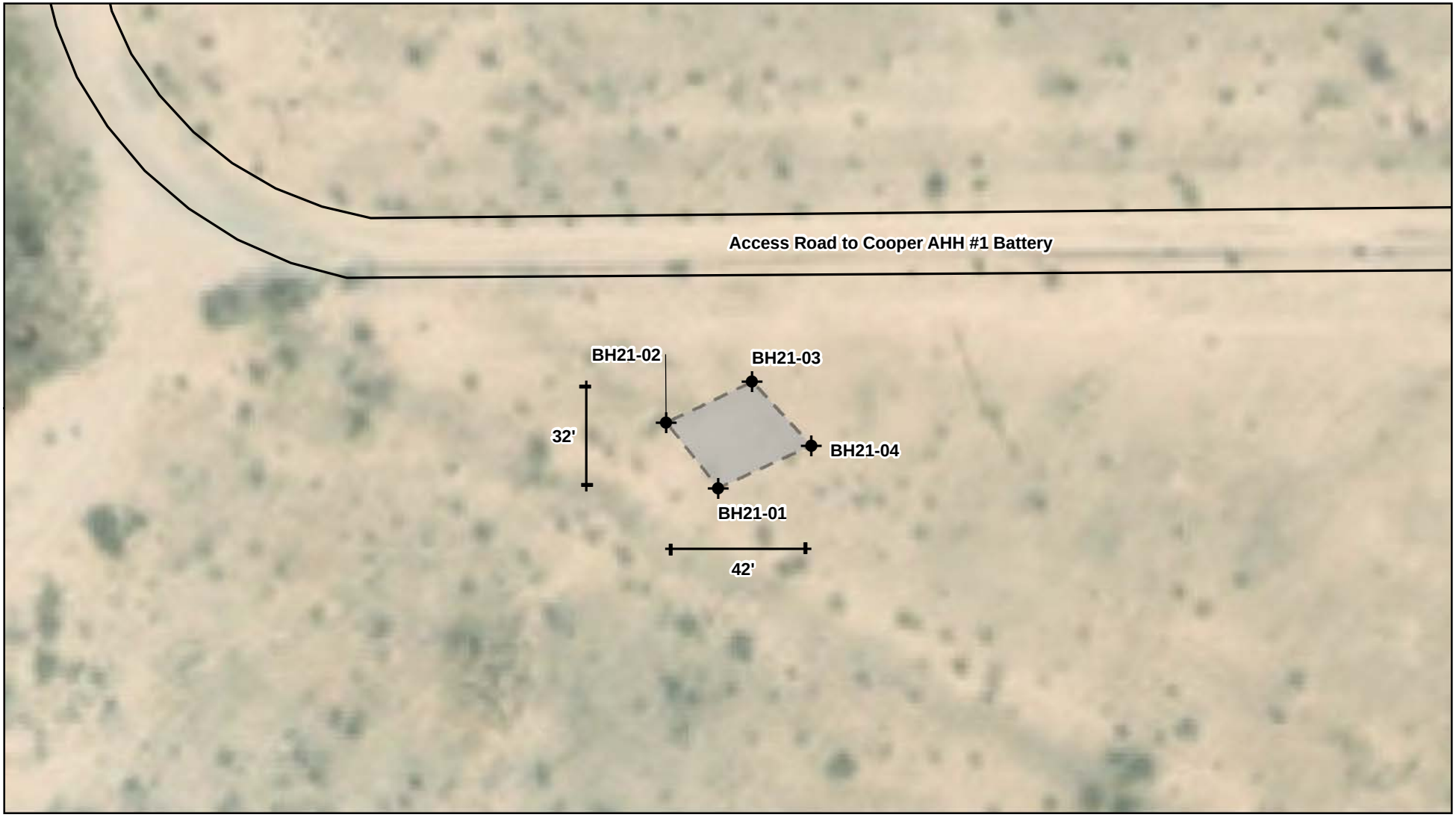
Received by: _____ Date: _____

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

Closure Approved by: Jennifer Nobui Date: 03/24/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

ATTACHMENT 2



Borehole

Road

Sampling Area (685 sq. ft.)

VERTEX

0 10 20 40 ft

Map Center:
Lat/Long: 32.605193, -104.546785

NAD 1983 UTM Zone 13N

Date: Nov 23/21

N

Initial Characterization Dagger Draw Water System

FIGURE: **1**

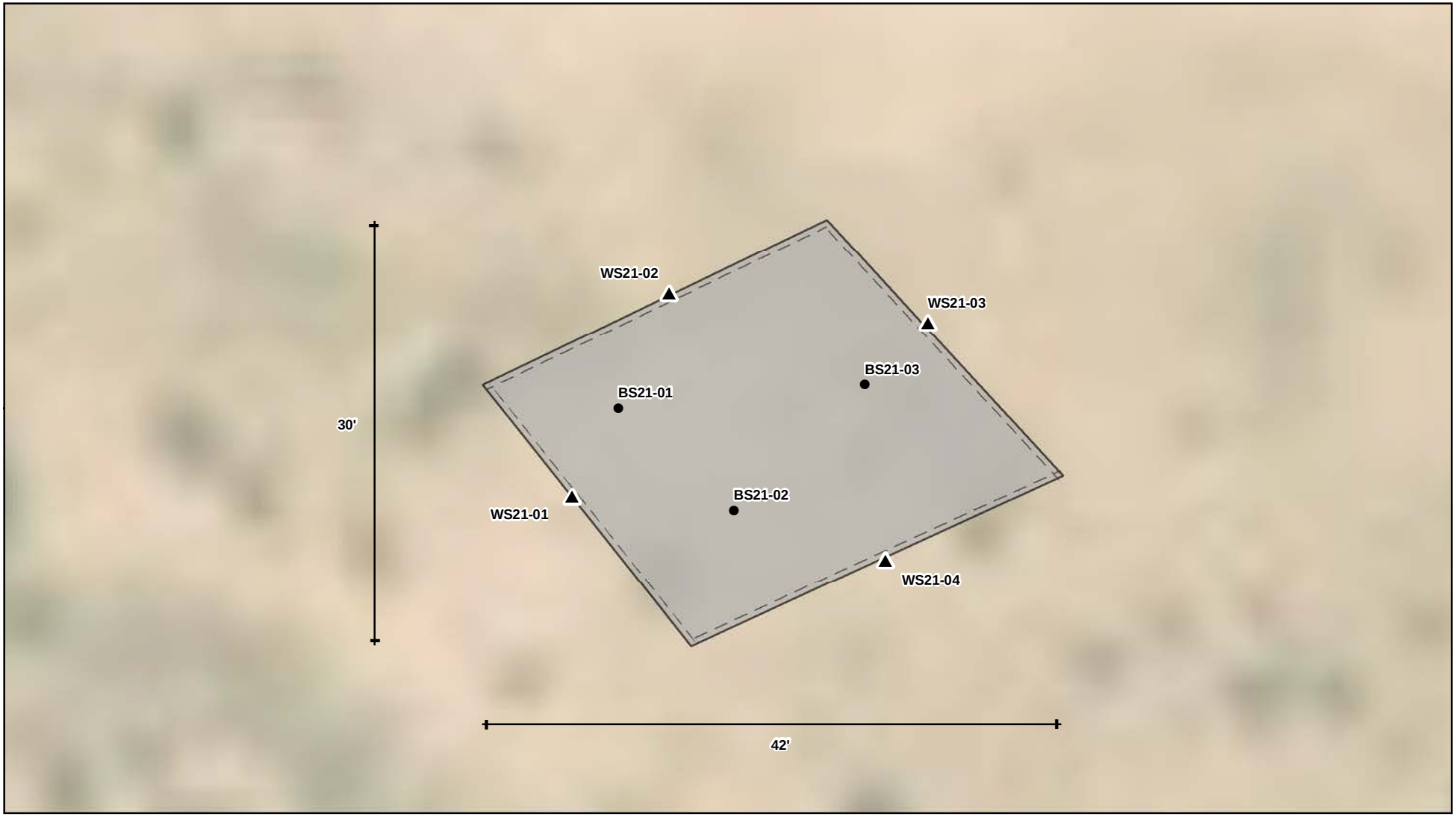
eog resources

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: Imagery from ESRI, 2020. Testpit locations from GPS, Vertex Professional Services, Ltd., 2019.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\21E-03278\004 - Cooper AHH #1 Battery\Figures\Figure 1 Initial Characterization Cooper AHH #1 ROW.mxd



● Base Sample

▲ Wall Sample

Approximate Excavation Extent (685 sq. ft.)

VERTEX

0 5 10 ft

Map Center:
Lat/Long: 32.605177, -104.546786

NAD 1983 UTM Zone 13N
Date: Dec 01/21

N

Confirmatory Schematic
Dagger Draw Water System

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: Imagery from ESRI, 2020. Testpit locations from GPS, Vertex Professional Services, Ltd., 2019.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\21E-03278\004 - Cooper AHH #1 Battery\Figure 2 Confirmatory Schematic Cooper AHH #1 ROW.mxd

ATTACHMENT 3

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	11/16/2021
Site Location Name:	Dagger Draw Water System	Report Run Date:	11/16/2021 7:32 PM
Client Contact Name:	Chase Settle	API #:	30-015-26299
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	11/16/2021 8:30 AM
Departed Site	11/16/2021 11:30 AM

Field Notes

8:31 Delineation of pipeline release

8:34 Lush vegetation in area. No distinct signs of contamination visible

9:52 Soil is maintaining same consistency at each depth. No odor or discoloration

Next Steps & Recommendations

1 Wait on lab analysis

2 Confirmation sampling

3 Closure report

Daily Site Visit Report

Site Photos

Viewing Direction: South

Pasture area

Viewing Direction: East

BH21-04

Viewing Direction: North

BH21-03

Viewing Direction: West

BH21-02

Daily Site Visit Report

Viewing Direction: South

BH21-01

Viewing Direction: Northeast

Sample area

Viewing Direction: Northwest

Sample area

Viewing Direction: Southwest

Sample area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Dagger Draw Water System

Date: (SD: 11/16/21)

Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BH21-01	0.0	0	5	0.08	18.9	108		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-01	1.0	0	8	0.09	19	118		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-01	2.0	0	14	0.17	18.9	238		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-01	3.0	0	10	0.28	18.3	422		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-01	4.0	0	18	0.33	18.6	482		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-02	0.0	0	12	0.08	19.2	95		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BH21-02	1.0	0	6	0.09	19	118		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-02	2.0	0	10	0.16	19	219		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-02	3.0	0	15	0.28	19.4	375		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-02	4.0	0	12	0.32	19.5	428		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-03	0.0	0	7	0.08	19.2	95		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-03	1.0	0	14	0.08	19.1	99		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-03	2.0	0	30	0.35	18.9	497		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-03	3.0	0	16	0.35	18.9	497		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-03	4.0	0	22	0.24	19.1	330		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

BH21-04	0.0	0	10	0.08	19.2	95		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-04	1.0	0	20	0.13	18.9	180		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-04	2.0	0	17	0.23	18.8	329		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-04	3.0	0	25	0.30	18.8	430		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BH21-04	4.0	0	19	0.30	19	421		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	11/23/2021
Site Location Name:	Dagger Draw Water System	Report Run Date:	11/23/2021 7:32 PM
Client Contact Name:	Chase Settle	API #:	30-015-26299
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	11/23/2021 11:09 AM
Departed Site	11/23/2021 1:28 PM

Field Notes

11:10 Confirmation sampling of ROW area. Characterization showed no contamination present. Samples to be taken in five point composite samples 0-4’

12:13 Samples have no signs of contamination and vegetation shows no signs of stress. Characterization shows that no contamination is present

12:29 A total of four wall samples and three base samples taken within area marked out from characterization. Each samples is representing surface to 4 ft bgs to show that no contamination is within the top four feet as characterization showed in the discreet sampling event

Next Steps & Recommendations

1 Closure report

2 Lab tables

Daily Site Visit Report

Site Photos

Viewing Direction: South

Sample area

Viewing Direction: East

Sample area

Viewing Direction: East

Sample area

Viewing Direction: North

Sample area

Daily Site Visit Report

Viewing Direction: West

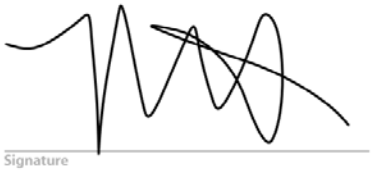
Sample area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Monica Peppin

Signature:



Daily Soil Sampling

Client: Client: EOG Resources Inc.

Location: Site: Dagger Draw Water System

Date: (SD: 11/23/21)

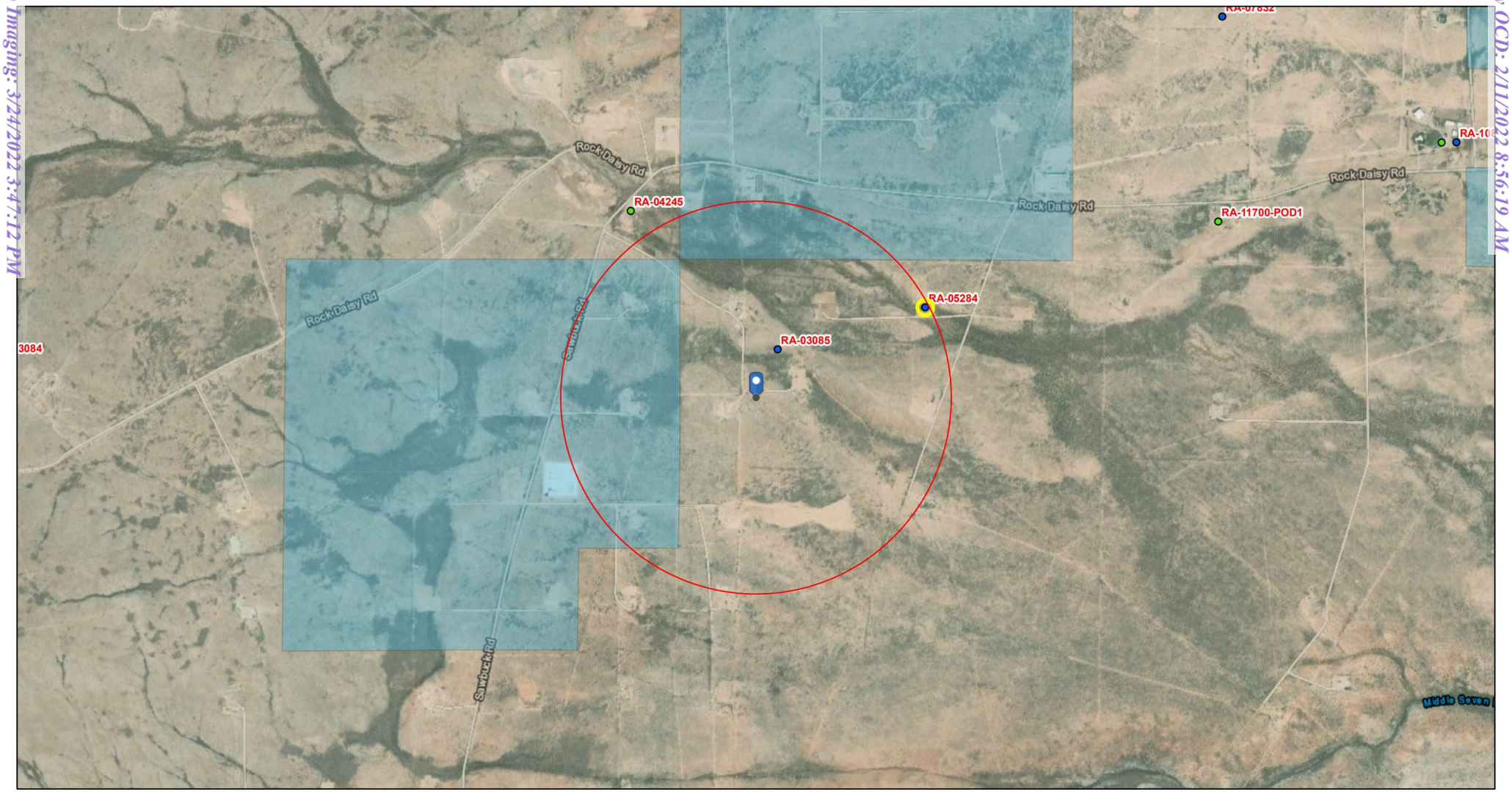
Sampling											
		Field Screening							Data Collection		
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES21-01	4.0	0	26	0.11	15.3	307		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BES21-02	4.0	0	18	0.08	15.6	251		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
BES21-03	4.0	0	21	0.09	15.5	269		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
WES21-01	4.0	0	20	0.09	15.5	269		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
WES21-02	4.0	0	25	0.08	15.2	268		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	
WES21-03	4.0	0	23	0.10	15.3	292		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

Daily Soil Sampling

WES21-04	4.0	0	45	0.09	15.2	282		Benzene (EPA SW-846 Method 8021B/8260B), BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	√	√	

ATTACHMENT 4

Dagger Draw Water System



12/7/2021, 3:14:36 PM

GIS WATERS PODs
- Active
- Pending

OSE District Boundary

Water Right Regulations
- Closure Area

New Mexico State Trust Lands
- Both Estates
- SiteBoundaries

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

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

OSE POD Locations Web Map
These maps are distributed "as is" without warranty of any kind.

Dagger Draw Water System

USGS 0.5 Mile Radius

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 03085	RA	CH		1		01	20S	24E	542613	3607799*	173	465	300	165
RA 05284	RA	ED	1	2		01	20S	24E	543220	3607973*	599	282	273	9
RA 04245	RA	ED	4	4		35	19S	24E	542005	3608363*	998	300		

Average Depth to Water: **286 feet**

Minimum Depth: **273 feet**

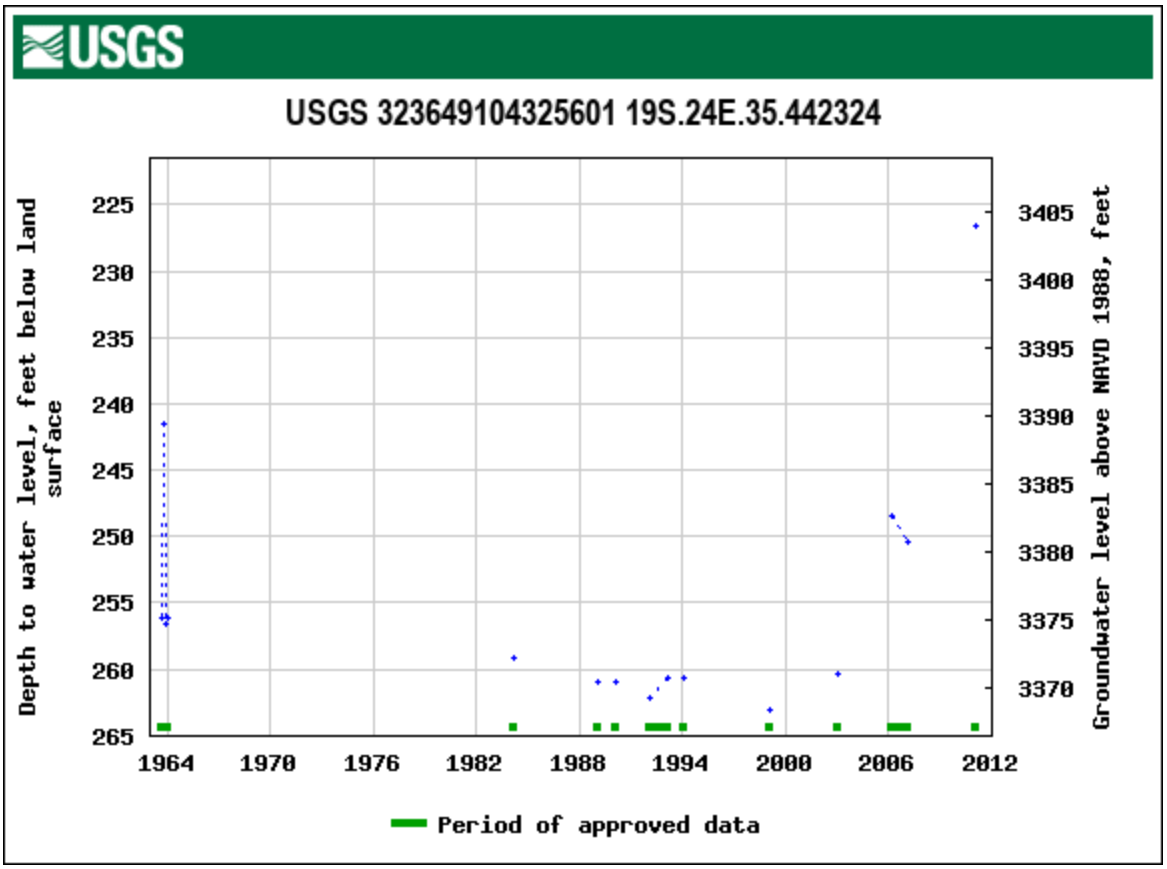
Maximum Depth: **300 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 542711.26 **Northing (Y):** 3607656.53 **Radius:** 1610

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


USGS
USGS 323649104325601 19S.24E.35.442324
Depth to water level, feet below land surface
225
230
235
240
245
250
255
260
265
Groundwater level above NAVD 1988, feet
3405
3400
3395
3390
3385
3380
3375
3370
1964
1970
1976
1982
1988
1994
2000
2006
2012
Period of approved data

Dagger Draw Water System

12/7/2021, 3:17:20 PM

Override 1

GIS WATERS PODs

Active

Pending

OSE District Boundary

Water Right Regulations

Closure Area

New Mexico State Trust Lands

Both Estates

SiteBoundaries

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

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

OSE POD Locations Web Map

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

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 10826	4	2	4	31	19S	25E	545405	3608659

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

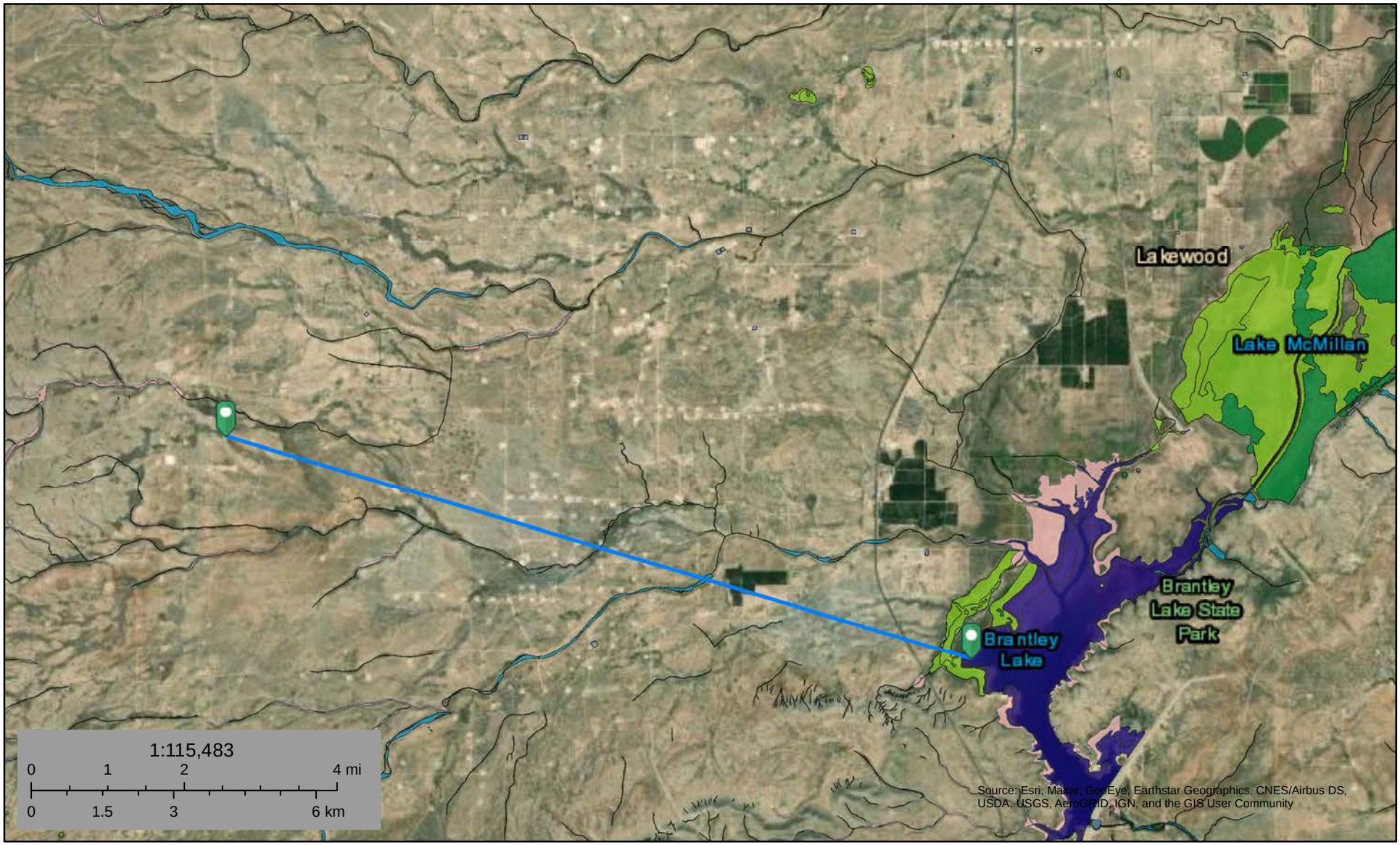
Driller License:	1064	**Driller Company:**	DELFORD W. MARTIN		
Driller Name:	MARTIN, DELFORD				
Drill Start Date:	08/07/2007	**Drill Finish Date:**	08/14/2007	**Plug Date:**	
Log File Date:	08/28/2007	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	100 GPM
Casing Size:	7.00	**Depth Well:**	330 feet	**Depth Water:**	250 feet

Water Bearing Stratifications:	Top	Bottom	Description
	259	288	Sandstone/Gravel/Conglomerate
	290	315	Sandstone/Gravel/Conglomerate
	319	326	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	250	330

U.S. Fish and Wildlife Service
National Wetlands Inventory

Dagger Draw Water System
Watercourse 45,311ft



September 11, 2021

Wetlands

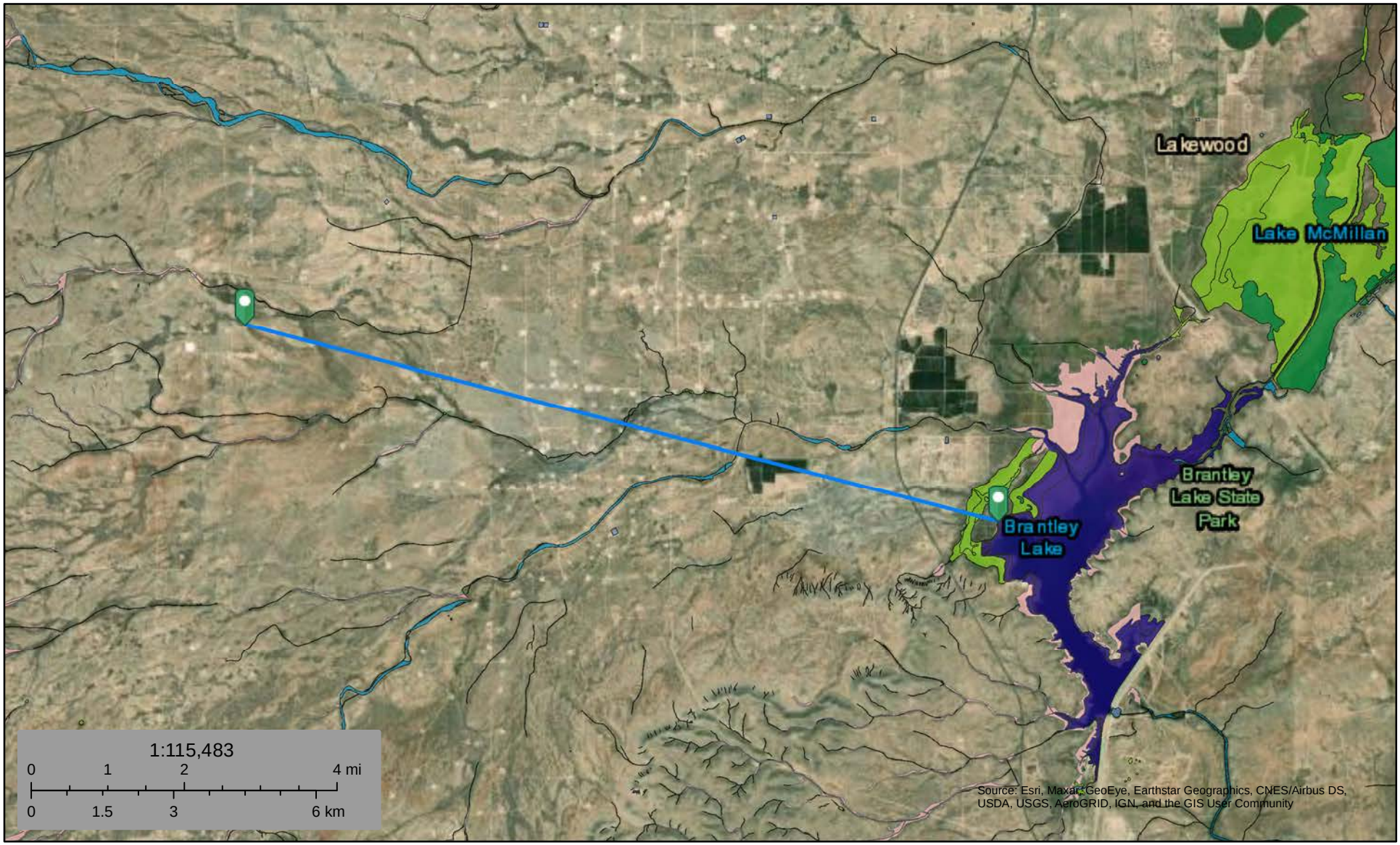
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

Dagger Draw Water System Lake 45,311ft



September 11, 2021

Wetlands

- Estuarine and Marine Deepwater
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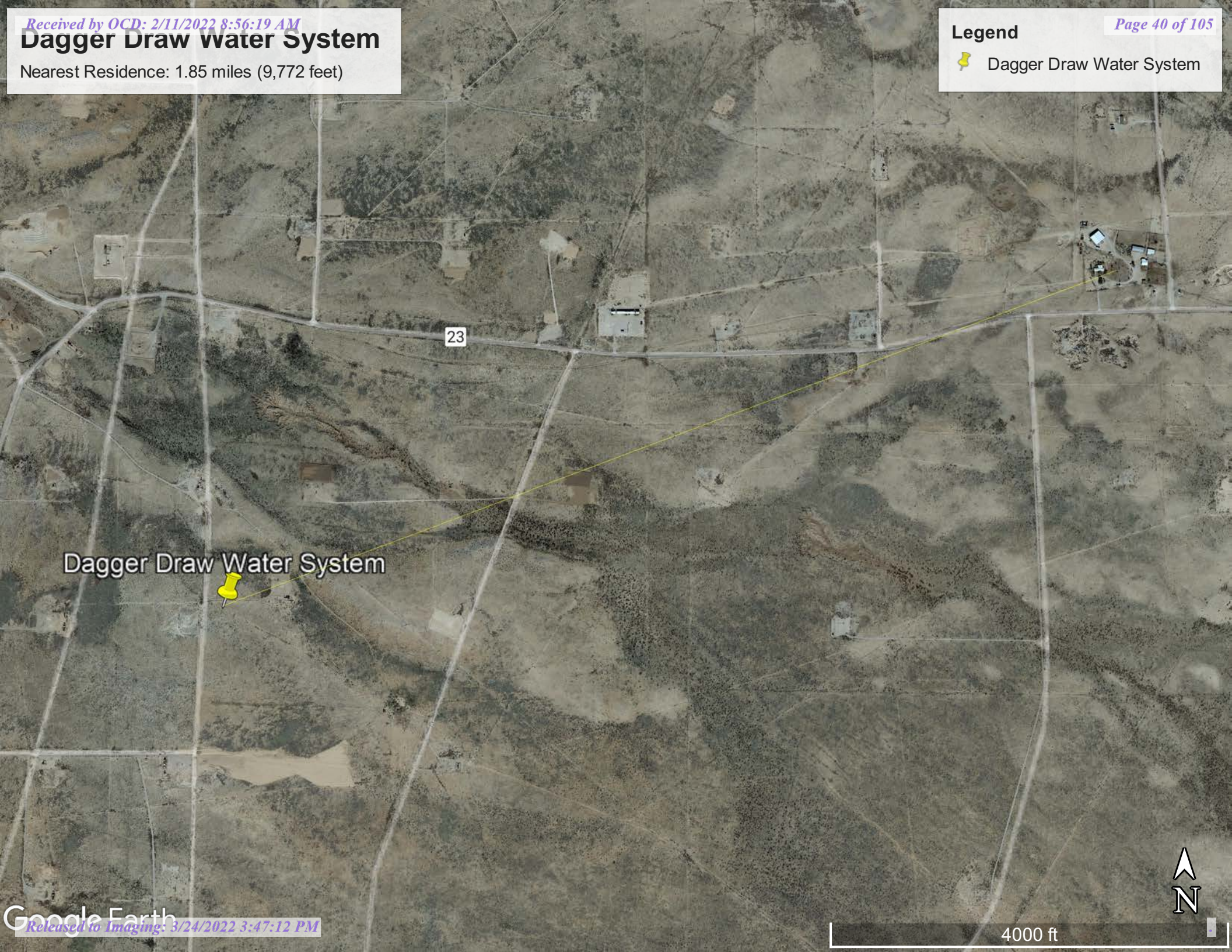
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Dagger Draw Water System

Nearest Residence: 1.85 miles (9,772 feet)



New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	RA 03085			1	01	20S	24E	542613	3607799*

Driller License:		**Driller Company:**			
Driller Name:	LONE STAR				
Drill Start Date:	06/24/1953	**Drill Finish Date:**	07/06/1953	**Plug Date:**	
Log File Date:	11/19/1953	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	7.00	**Depth Well:**	465 feet	**Depth Water:**	300 feet

Water Bearing Stratifications:	Top	Bottom	Description
	278	285	Sandstone/Gravel/Conglomerate
	285	292	Sandstone/Gravel/Conglomerate

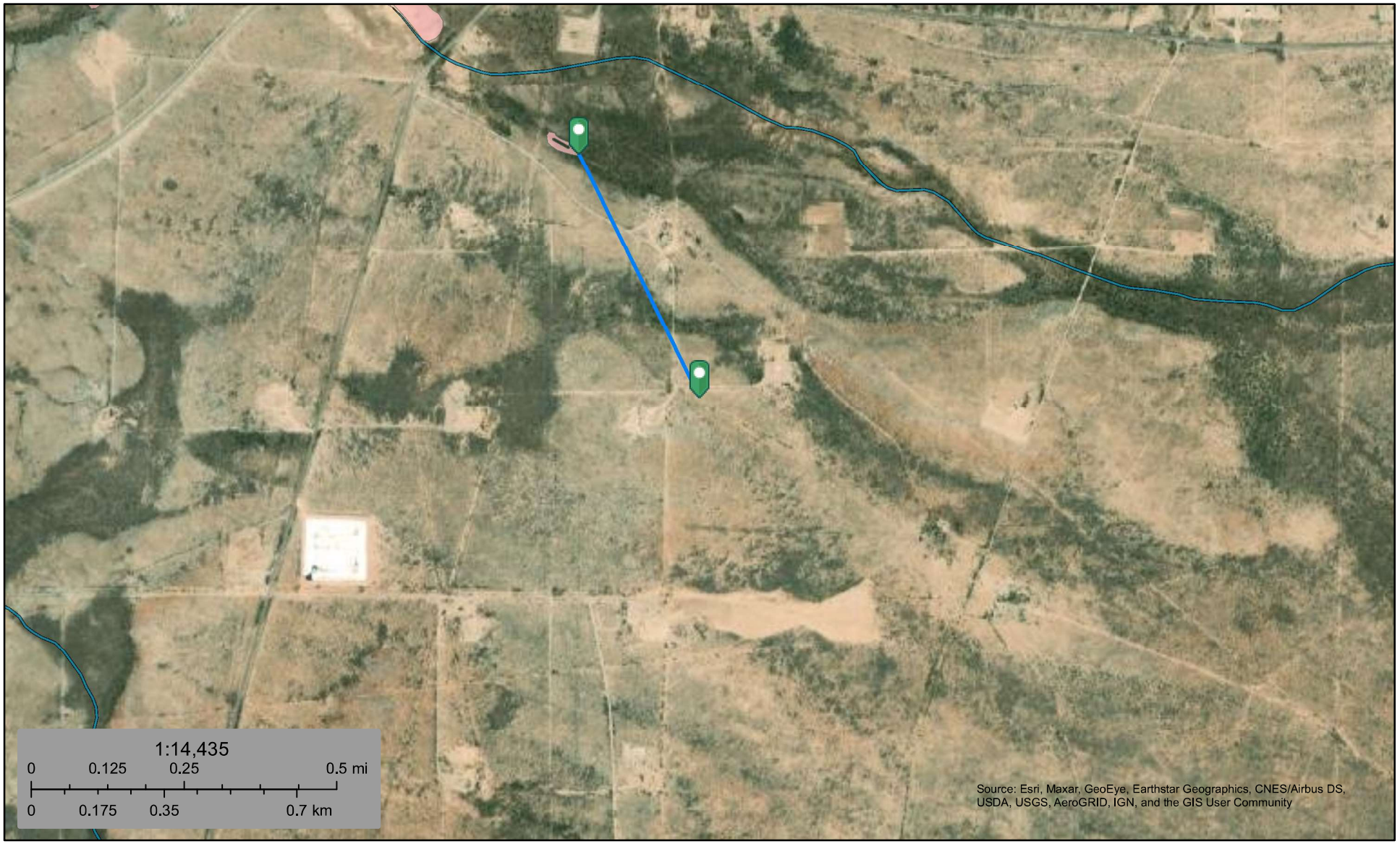
***UTM location was derived from PLSS - see Help**

Dagger Draw Water System

Nearest Town: Seven Rivers, NM
Distance: 7.21 miles

U.S. Fish and Wildlife Service
National Wetlands Inventory

Dagger Draw Water System



December 8, 2021

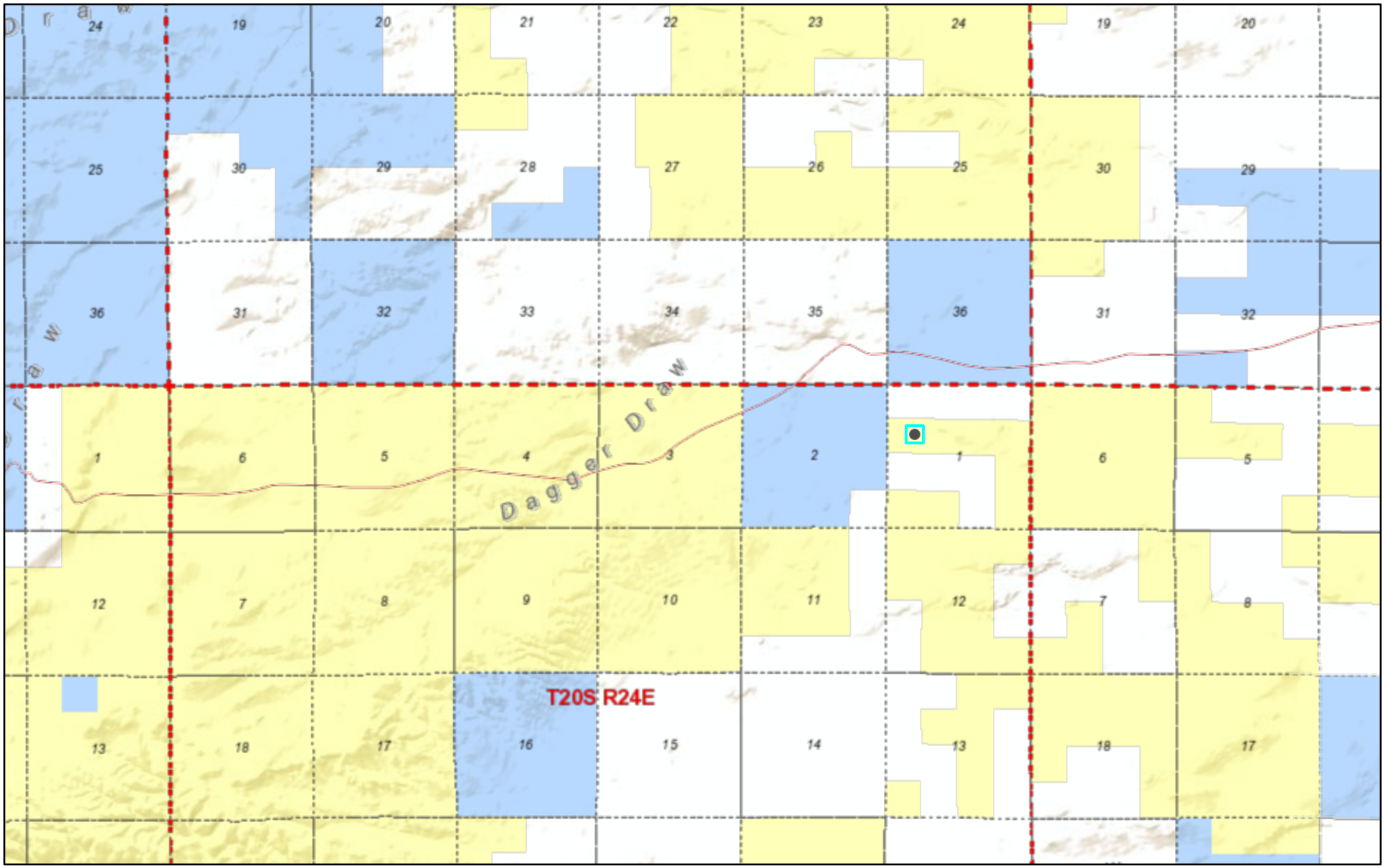
Wetlands

- 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

Active Mines in New Mexico



9/11/2021, 9:49:57 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Township / Range

Sections

Land Ownership

Bureau of Land Management

Bureau of Reclamation

Department of Agriculture

Department of Defense

Department of Energy

National Park Service

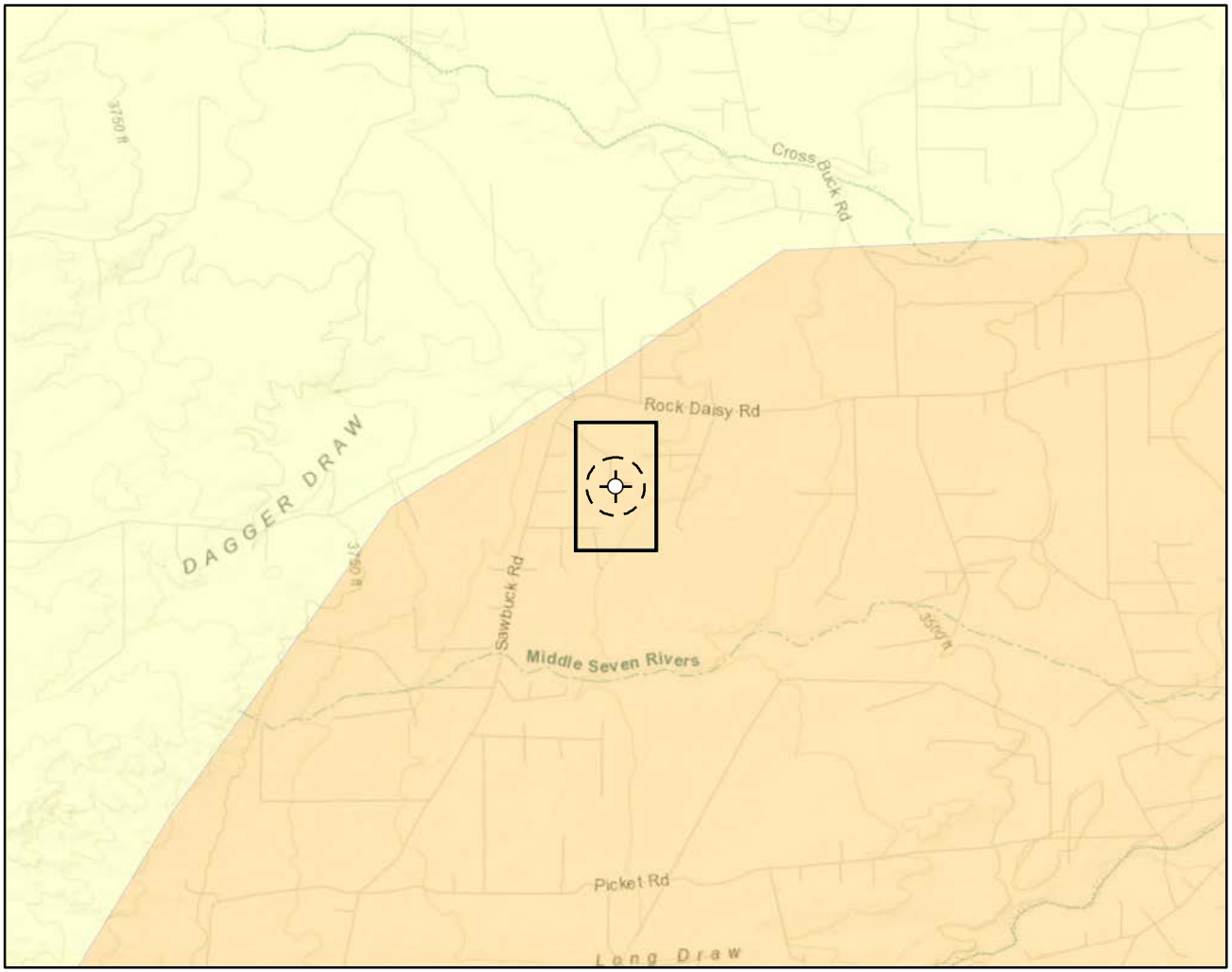
Private Land

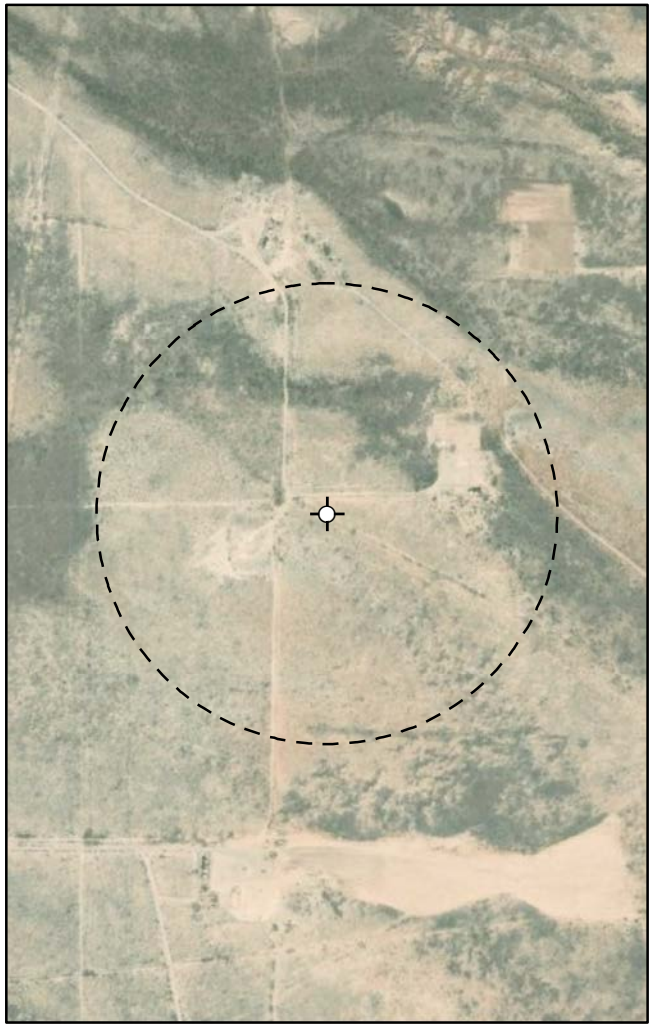
State Game and Fish

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri,

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)





Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.605110, -104.546783

NAD 1983 UTM Zone 13N
Date: Sep 21/21

N

Karst Potential
Dagger Draw Water System

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.

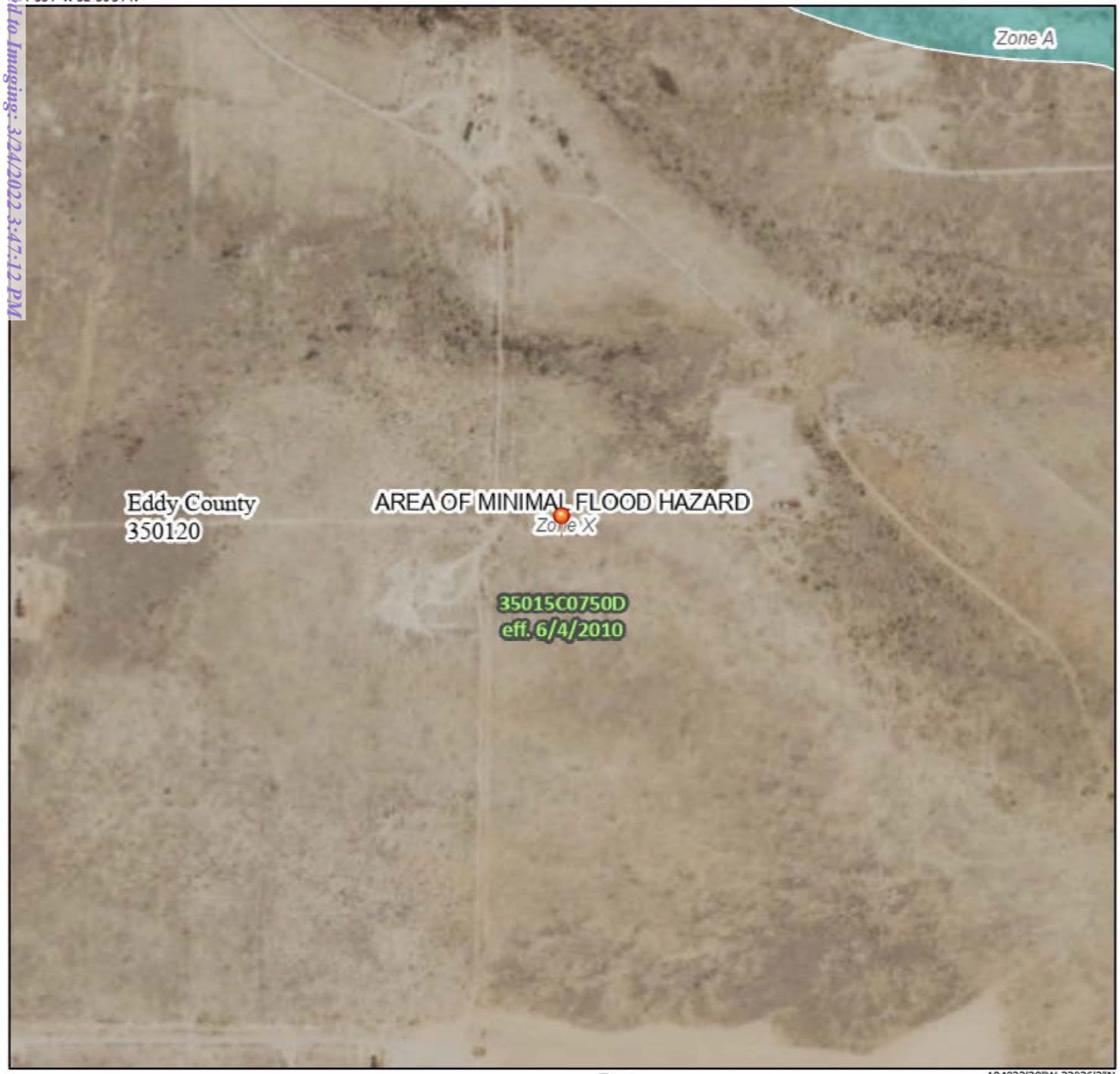
Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\EOG Resources Inc\21E-03278\004 - Cooper AHH #1 Battery\Fig X Karst Potential Cooper AHH #1 Battery.mxd

National Flood Hazard Layer FIRMette

FEMA



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*
- 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*

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 / 17.5 Cross Sections with 1% Annual Chance / 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

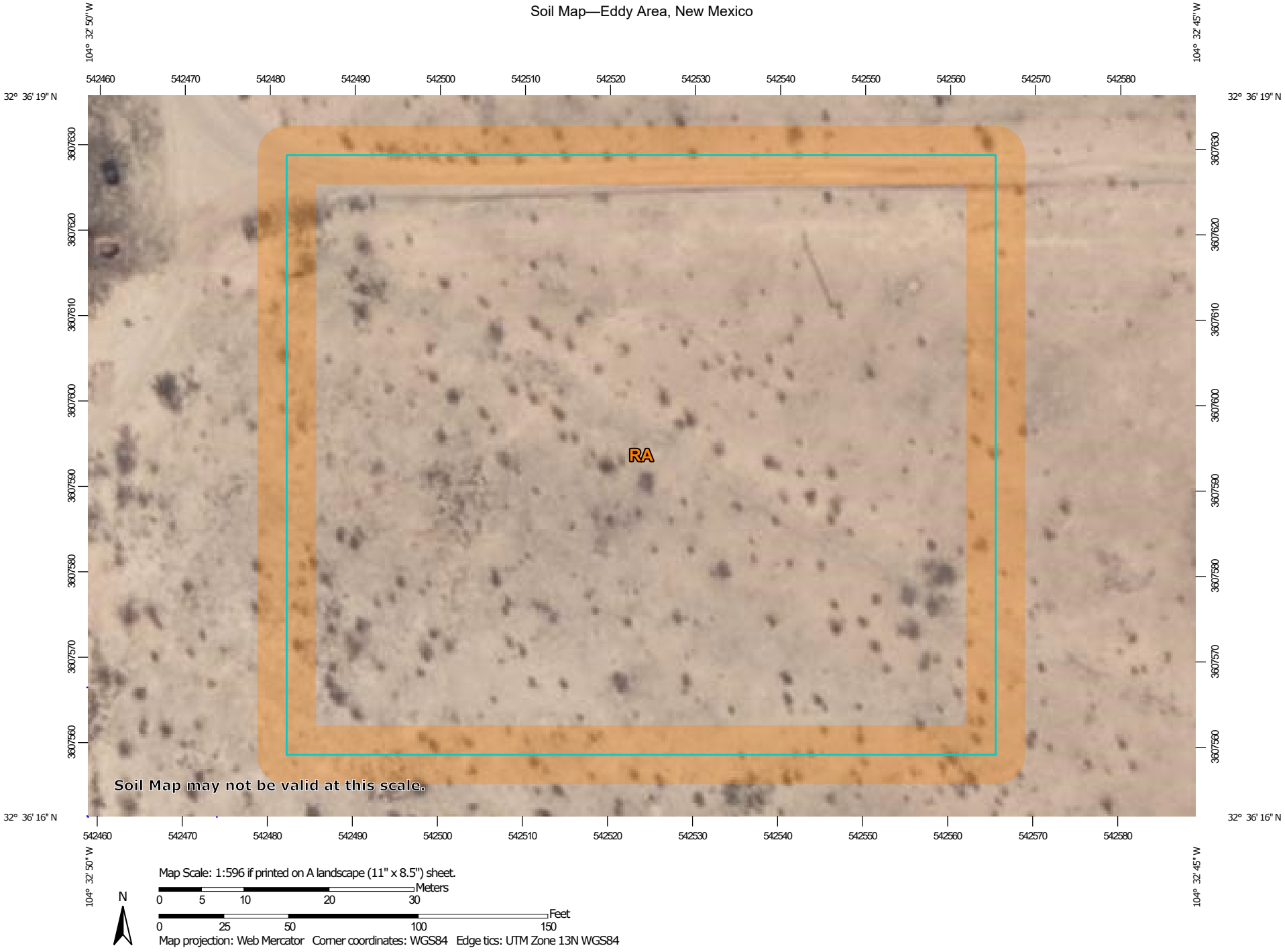
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 12/8/2021 at 9:47 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RA	Reagan loam, 0 to 3 percent slopes	1.5	100.0%
Totals for Area of Interest		**1.5**	**100.0%**

Eddy Area, New Mexico

RA—Reagan loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5c
Elevation: 1,100 to 4,400 feet
Mean annual precipitation: 7 to 14 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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: Very slightly saline to moderately saline (2.0 to 8.0 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

Upton
Percent of map unit: 1 percent
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Atoka
Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Data Source Information

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

Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg,

Contact for lead author : 505-761-4488 **Reference site used? Yes/No** No

Date: 2/12/2010 **MLRA:** 42.3 **Ecological Site:** Loamy This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

1. Number and extent of rills There should not be any rills.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

2. Presence of water flow patterns: There can be evidence of sheet flow.

There can be a few flow patterns that should be short and discontinuous. There can be some sheet flow. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

3. Number and height of erosional pedestals or terracettes: Pedestals should be rare. Terracettes can occure and should be discontinuous

There can be a few pedestals that should be less than 1 inch high. Terracettes can be common and should be discontinuous. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can make up to 50% of the ground cover on this site according to the ESD. Bare patch size should be small.

5. Number of gullies and erosion associated with gullies:

Gullies and erosion associated with gullies should be rare are infrequent. Typically, gullies if present will only follow the micro topography. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

6. Extent of wind scoured, blowouts and/or depositional area

There should not be any wind scoured, blowouts and/or depositional areas. However there can be potential for depositional areas. Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

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

Litter should be small (less than “1 in diameter) and its movement should be minimal. This site has adequate vegetation to stop litter movement after short distances. Most of the litter movement on this site will be litter that has been transported onto the site from adjacent sites. Litter produced on this site stays on the site and only travels short distances.

8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :

This site can be susceptible to alluvial erosion. Stability values are estimated to be 1-2 in interspaces and 3-5 at bases of vegetation. This would l

9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :

The SOM content should be less than 1%. A--0 to 6 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky; surface 1/2 to 2 inches has weak thin to medium platy structure; common very fine and fine pores; common very fine, fine and medium roots; strongly calcareous; slightly alkaline (pH 7.6); clear smooth boundary. (4 to 8 inches thick)

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

Overall, infiltration rates should be slow for this site but can be higher around bases of grasses than in interspaces and around bases of shrubs. The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches. Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate.

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

There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>) , greater than (>) , and equal to (=) :

black grama >> tobosa > C 4 bunch grasses (dropseeds) > C4 midgrasses (threeawns) >= soaptree yucca, ephedra, fourwing saltbush >= forbs (croton, desert marigold, globemallow, > broom snakeweed, prickly pear, = other forbs.

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

Black grama and bunchgrasses can show decadence in centers of plants.

14. Average percent litter cover (_____ %) and depth (_____ inches).

Average 15% cover and 0.75 inch deep. (As per ESD)

15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):

(Low Production 650 lbs./ac.) (Average RV Production 925 lbs./ac.) (High Production 1200 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

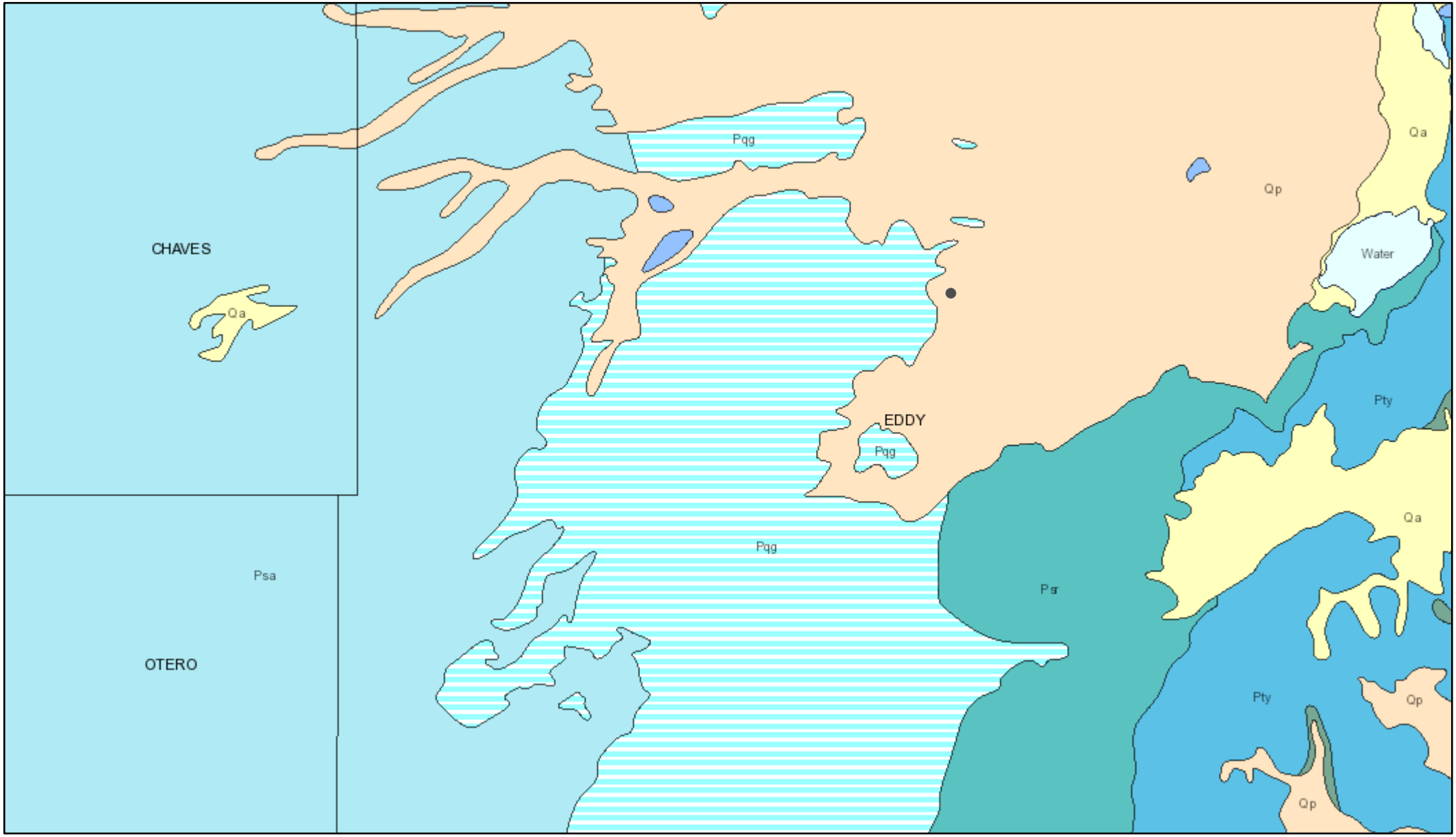
16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Tarbush, creosote and mesquite can be invaders to this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and tarbush and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and tarbush and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The C4 midgrasses should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

ArcGIS Web Map



9/11/2021, 10:19:59 AM

1:288,895

0 2 4 8 mi

0 3.25 6.5 13 km

NM Counties

Contact, Gradational

Map Boundary

Lithologic Contacts

Nomenclature change

Contact, Exposed

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

ArcGIS Web AppBuilder

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

ATTACHMENT 5

Client Name: EOG Y Resources, Inc.
Site Name: Dagger Draw Water System (Cooper ROW)
NM OCD Tracking #: NKMW1110142039/2RP-729 Project #: 21E-03278-04
Lab Report: 2111923

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 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)
BH21-01	0	11/16/2021	0	5	108	ND	ND	ND	ND	ND	ND	ND
BH21-01	1	11/16/2021	0	8	118	ND	ND	ND	ND	ND	ND	ND
BH21-01	2	11/16/2021	0	14	238	ND	ND	ND	ND	ND	ND	ND
BH21-01	3	11/16/2021	0	10	422	ND	ND	ND	ND	ND	ND	120
BH21-01	4	11/16/2021	0	18	482	ND	ND	ND	ND	ND	ND	210
BH21-02	0	11/16/2021	0	12	95	ND	ND	ND	ND	ND	ND	ND
BH21-02	1	11/16/2021	0	6	118	ND	ND	ND	ND	ND	ND	ND
BH21-02	2	11/16/2021	0	10	219	ND	ND	ND	ND	ND	ND	ND
BH21-02	3	11/16/2021	0	15	375	ND	ND	ND	ND	ND	ND	240
BH21-02	4	11/16/2021	0	12	428	ND	ND	ND	ND	ND	ND	220
BH21-03	0	11/16/2021	0	7	95	ND	ND	ND	ND	ND	ND	ND
BH21-03	1	11/16/2021	0	14	99	ND	ND	ND	ND	ND	ND	ND
BH21-03	2	11/16/2021	0	30	497	ND	ND	ND	ND	ND	ND	140
BH21-03	3	11/16/2021	0	16	497	ND	ND	ND	ND	ND	ND	260
BH21-03	4	11/16/2021	0	22	330	ND	ND	ND	ND	ND	ND	200
BH21-04	0	11/16/2021	0	10	95	ND	ND	ND	ND	ND	ND	ND
BH21-04	1	11/16/2021	0	20	180	ND	ND	ND	ND	ND	ND	ND
BH21-04	2	11/16/2021	0	17	329	ND	ND	ND	ND	ND	ND	69
BH21-04	3	11/16/2021	0	25	430	ND	ND	ND	ND	ND	ND	150
BH21-04	4	11/16/2021	0	19	421	ND	ND	ND	ND	ND	ND	130

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

Client Name: EOG Y Resources, Inc.
Site Name: Dagger Draw Water System (Cooper ROW)
NM OCD Tracking #: NKMW1110142039/2RP-729
Project #: 21E-03278
Lab Report: 2111C03

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 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)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS21-01	0-4	11/23/2021	0	26	307	ND	ND	ND	ND	ND	ND	ND	ND
BS21-02	0-4	11/23/2021	0	18	251	ND	ND	ND	ND	ND	ND	ND	ND
BS21-03	0-4	11/23/2021	0	21	269	ND	ND	ND	ND	ND	ND	ND	ND
WS21-01	0-4	11/23/2021	0	20	269	ND	ND	ND	ND	ND	ND	ND	ND
WS21-02	0-4	11/23/2021	0	25	268	ND	ND	ND	ND	ND	ND	ND	ND
WS21-03	0-4	11/23/2021	0	23	292	ND	ND	ND	ND	ND	ND	ND	ND
WS21-04	0-4	11/23/2021	0	0	282	ND	ND	ND	ND	ND	ND	ND	ND

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

ATTACHMENT 6

Monica Peppin

From: Chase Settle <Chase_Settle@eogresources.com>
Sent: Tuesday, November 23, 2021 9:29 AM
To: Monica Peppin
Subject: FW: Cooper AHH 1 (NKMW1110142039/2RP-729) Sampling Notification

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From: Tina Huerta <Tina_Huerta@eogresources.com>
Sent: Thursday, November 18, 2021 12:29 PM
To: Robert.Hamlet@state.nm.us; blm_nm_cfo_spill@blm.gov
Cc: Artesia Regulatory <Artesia_Regulatory@eogresources.com>; Chase Settle <Chase_Settle@eogresources.com>; Yvette Moore <Yvette_Moore@eogresources.com>; Ashley Bravo <Ashley_Bravo@eogresources.com>; Katie Jamison <Katie_Jamison@eogresources.com>
Subject: Cooper AHH 1 (NKMW1110142039/2RP-729) Sampling Notification

Good Afternoon,

EOG Resources, Inc. respectfully submits notification of sampling activities to be conducted at the below location.

Cooper AHH 1
NKMW1110142039/2RP-729

Sampling will begin at 8:00 a.m. on Tuesday, November 23, 2021.

Thank you,

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

eog resources
Artesia Division

ATTACHMENT 7

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

November 30, 2021

Dennis Williams

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

RE: Cooper AAH 1 Row OrderNo.: 2111923

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 20 sample(s) on 11/18/2021 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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-01 0'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 8:45:00 AM
Lab ID: 2111923-001 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/23/2021 7:17:29 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/23/2021 7:17:29 PM
Surr: DNOP	88.7	70-130		%Rec	1	11/23/2021 7:17:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2021 10:31:00 PM
Surr: BFB	95.4	70-130		%Rec	1	11/19/2021 10:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/19/2021 10:31:00 PM
Toluene	ND	0.049		mg/Kg	1	11/19/2021 10:31:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/19/2021 10:31:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/19/2021 10:31:00 PM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	11/19/2021 10:31:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 5:08:34 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-01 1'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 8:50:00 AM
Lab ID: 2111923-002 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/23/2021 7:49:06 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2021 7:49:06 PM
Surr: DNOP	86.3	70-130		%Rec	1	11/23/2021 7:49:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/19/2021 11:30:00 PM
Surr: BFB	93.0	70-130		%Rec	1	11/19/2021 11:30:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/19/2021 11:30:00 PM
Toluene	ND	0.049		mg/Kg	1	11/19/2021 11:30:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/19/2021 11:30:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/19/2021 11:30:00 PM
Surr: 4-Bromofluorobenzene	88.6	70-130		%Rec	1	11/19/2021 11:30:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	59		mg/Kg	20	11/23/2021 5:45:47 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-01 2'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 8:55:00 AM
Lab ID: 2111923-003 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/23/2021 7:59:41 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/23/2021 7:59:41 PM
Surr: DNOP	70.2	70-130		%Rec	1	11/23/2021 7:59:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2021 12:28:00 AM
Surr: BFB	96.1	70-130		%Rec	1	11/20/2021 12:28:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 12:28:00 AM
Toluene	ND	0.048		mg/Kg	1	11/20/2021 12:28:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2021 12:28:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/20/2021 12:28:00 AM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	11/20/2021 12:28:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 6:47:48 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-01 3'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 9:00:00 AM
Lab ID: 2111923-004 **Matrix:** SOIL
Received Date: 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/24/2021 1:56:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/24/2021 1:56:40 PM
Surr: DNOP	98.4	70-130		%Rec	1	11/24/2021 1:56:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 12:48:00 AM
Surr: BFB	93.6	70-130		%Rec	1	11/20/2021 12:48:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 12:48:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 12:48:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 12:48:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2021 12:48:00 AM
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	11/20/2021 12:48:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	120	60		mg/Kg	20	11/23/2021 7:00:12 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-01 4'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 9:05:00 AM
Lab ID: 2111923-005 **Matrix:** SOIL
Received Date: 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/23/2021 8:20:51 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/23/2021 8:20:51 PM
Surr: DNOP	71.3	70-130		%Rec	1	11/23/2021 8:20:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2021 1:08:00 AM
Surr: BFB	95.6	70-130		%Rec	1	11/20/2021 1:08:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	11/20/2021 1:08:00 AM
Toluene	ND	0.047		mg/Kg	1	11/20/2021 1:08:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2021 1:08:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2021 1:08:00 AM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	11/20/2021 1:08:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	210	60		mg/Kg	20	11/23/2021 7:12:36 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-02 0'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:10:00 AM
Lab ID: 2111923-006 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/23/2021 8:31:29 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 8:31:29 PM
Surr: DNOP	79.1	70-130		%Rec	1	11/23/2021 8:31:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2021 1:27:00 AM
Surr: BFB	92.2	70-130		%Rec	1	11/20/2021 1:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 1:27:00 AM
Toluene	ND	0.047		mg/Kg	1	11/20/2021 1:27:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2021 1:27:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2021 1:27:00 AM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	11/20/2021 1:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 7:25:01 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-02 1'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:15:00 AM
Lab ID: 2111923-007 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/23/2021 8:42:06 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/23/2021 8:42:06 PM
Surr: DNOP	81.5	70-130		%Rec	1	11/23/2021 8:42:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2021 1:47:00 AM
Surr: BFB	96.3	70-130		%Rec	1	11/20/2021 1:47:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 1:47:00 AM
Toluene	ND	0.047		mg/Kg	1	11/20/2021 1:47:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2021 1:47:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2021 1:47:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	11/20/2021 1:47:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 7:37:25 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-02 2'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:20:00 AM
Lab ID: 2111923-008 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	11/24/2021 2:20:30 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/24/2021 2:20:30 PM
Surr: DNOP	87.1	70-130		%Rec	1	11/24/2021 2:20:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 2:07:00 AM
Surr: BFB	98.2	70-130		%Rec	1	11/20/2021 2:07:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 2:07:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 2:07:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 2:07:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2021 2:07:00 AM
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	11/20/2021 2:07:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 7:49:49 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-02 3'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:25:00 AM
Lab ID: 2111923-009 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	11/24/2021 2:44:19 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/24/2021 2:44:19 PM
Surr: DNOP	88.4	70-130		%Rec	1	11/24/2021 2:44:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2021 2:26:00 AM
Surr: BFB	95.4	70-130		%Rec	1	11/20/2021 2:26:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	11/20/2021 2:26:00 AM
Toluene	ND	0.050		mg/Kg	1	11/20/2021 2:26:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2021 2:26:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/20/2021 2:26:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	11/20/2021 2:26:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	11/23/2021 8:02:14 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-02 4'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 9:30:00 AM
Lab ID: 2111923-010 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/24/2021 3:08:06 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/24/2021 3:08:06 PM
Surr: DNOP	81.3	70-130		%Rec	1	11/24/2021 3:08:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2021 2:46:00 AM
Surr: BFB	94.0	70-130		%Rec	1	11/20/2021 2:46:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 2:46:00 AM
Toluene	ND	0.048		mg/Kg	1	11/20/2021 2:46:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2021 2:46:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/20/2021 2:46:00 AM
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	1	11/20/2021 2:46:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	220	59		mg/Kg	20	11/23/2021 8:14:38 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-03 0'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:35:00 AM
Lab ID: 2111923-011 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/23/2021 9:25:16 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/23/2021 9:25:16 PM
Surr: DNOP	88.1	70-130		%Rec	1	11/23/2021 9:25:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2021 3:45:00 AM
Surr: BFB	96.7	70-130		%Rec	1	11/20/2021 3:45:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 3:45:00 AM
Toluene	ND	0.048		mg/Kg	1	11/20/2021 3:45:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2021 3:45:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2021 3:45:00 AM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	1	11/20/2021 3:45:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 8:27:03 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-03 1'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:40:00 AM
Lab ID: 2111923-012 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/23/2021 9:36:08 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2021 9:36:08 PM
Surr: DNOP	84.9	70-130		%Rec	1	11/23/2021 9:36:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 4:04:00 AM
Surr: BFB	95.6	70-130		%Rec	1	11/20/2021 4:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	11/20/2021 4:04:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 4:04:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 4:04:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2021 4:04:00 AM
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	11/20/2021 4:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 8:39:27 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-03 2'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:45:00 AM
Lab ID: 2111923-013 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/23/2021 9:46:59 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/23/2021 9:46:59 PM
Surr: DNOP	89.7	70-130		%Rec	1	11/23/2021 9:46:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2021 4:24:00 AM
Surr: BFB	94.1	70-130		%Rec	1	11/20/2021 4:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	11/20/2021 4:24:00 AM
Toluene	ND	0.050		mg/Kg	1	11/20/2021 4:24:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2021 4:24:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/20/2021 4:24:00 AM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	11/20/2021 4:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	140	59		mg/Kg	20	11/23/2021 9:16:39 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-03 3'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 9:50:00 AM
Lab ID: 2111923-014 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/23/2021 9:57:48 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/23/2021 9:57:48 PM
Surr: DNOP	83.7	70-130		%Rec	1	11/23/2021 9:57:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 4:43:00 AM
Surr: BFB	94.6	70-130		%Rec	1	11/20/2021 4:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 4:43:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 4:43:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 4:43:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2021 4:43:00 AM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	1	11/20/2021 4:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	260	60		mg/Kg	20	11/23/2021 9:29:03 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-03 4'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 9:55:00 AM
Lab ID: 2111923-015 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/23/2021 10:08:36 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 10:08:36 PM
Surr: DNOP	78.6	70-130		%Rec	1	11/23/2021 10:08:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 5:03:00 AM
Surr: BFB	95.4	70-130		%Rec	1	11/20/2021 5:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 5:03:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 5:03:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 5:03:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2021 5:03:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	11/20/2021 5:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	200	60		mg/Kg	20	11/23/2021 9:41:28 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-04 0'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 10:00:00 AM
Lab ID: 2111923-016 **Matrix:** SOIL
Received Date: 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	11/23/2021 10:19:22 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/23/2021 10:19:22 PM
Surr: DNOP	83.7	70-130		%Rec	1	11/23/2021 10:19:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2021 5:22:00 AM
Surr: BFB	93.5	70-130		%Rec	1	11/20/2021 5:22:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	11/20/2021 5:22:00 AM
Toluene	ND	0.049		mg/Kg	1	11/20/2021 5:22:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2021 5:22:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2021 5:22:00 AM
Surr: 4-Bromofluorobenzene	90.3	70-130		%Rec	1	11/20/2021 5:22:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 9:53:53 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-04 1'
Project: Cooper AAH 1 Row
Collection Date: 11/16/2021 10:05:00 AM
Lab ID: 2111923-017 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/23/2021 10:30:09 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 10:30:09 PM
Surr: DNOP	96.9	70-130		%Rec	1	11/23/2021 10:30:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2021 5:42:00 AM
Surr: BFB	95.4	70-130		%Rec	1	11/20/2021 5:42:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	11/20/2021 5:42:00 AM
Toluene	ND	0.050		mg/Kg	1	11/20/2021 5:42:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2021 5:42:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/20/2021 5:42:00 AM
Surr: 4-Bromofluorobenzene	90.3	70-130		%Rec	1	11/20/2021 5:42:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/23/2021 10:06:17 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-04 2'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 10:10:00 AM
Lab ID: 2111923-018 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/23/2021 10:40:54 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 10:40:54 PM
Surr: DNOP	71.4	70-130		%Rec	1	11/23/2021 10:40:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2021 6:01:00 AM
Surr: BFB	97.4	70-130		%Rec	1	11/20/2021 6:01:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 6:01:00 AM
Toluene	ND	0.048		mg/Kg	1	11/20/2021 6:01:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2021 6:01:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/20/2021 6:01:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	11/20/2021 6:01:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	69	61		mg/Kg	20	11/23/2021 10:18:42 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-04 3'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 10:15:00 AM
Lab ID: 2111923-019 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/23/2021 10:51:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 10:51:38 PM
Surr: DNOP	95.6	70-130		%Rec	1	11/23/2021 10:51:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2021 6:21:00 AM
Surr: BFB	95.7	70-130		%Rec	1	11/20/2021 6:21:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	11/20/2021 6:21:00 AM
Toluene	ND	0.048		mg/Kg	1	11/20/2021 6:21:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2021 6:21:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/20/2021 6:21:00 AM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	11/20/2021 6:21:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	150	59		mg/Kg	20	11/23/2021 10:31:06 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 **2111923**
Date Reported: **11/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-04 4'
Project: Cooper AAH 1 Row **Collection Date:** 11/16/2021 10:20:00 AM
Lab ID: 2111923-020 **Matrix:** SOIL **Received Date:** 11/18/2021 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/23/2021 11:02:20 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/23/2021 11:02:20 PM
Surr: DNOP	95.4	70-130		%Rec	1	11/23/2021 11:02:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2021 6:40:00 AM
Surr: BFB	95.3	70-130		%Rec	1	11/20/2021 6:40:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	11/20/2021 6:40:00 AM
Toluene	ND	0.047		mg/Kg	1	11/20/2021 6:40:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2021 6:40:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2021 6:40:00 AM
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	11/20/2021 6:40:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	130	60		mg/Kg	20	11/23/2021 10:43:31 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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#: **2111923**

30-Nov-21

Client: Vertex Resources Services, Inc.

Project: Cooper AAH 1 Row

Sample ID: **MB-64114**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **64114**	RunNo: **83063**							
Prep Date: **11/22/2021**	Analysis Date: **11/23/2021**	SeqNo: **2950447**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-64114**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **64114**	RunNo: **83063**							
Prep Date: **11/22/2021**	Analysis Date: **11/23/2021**	SeqNo: **2950448**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	16	1.5	15.00	0	108	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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111923**

30-Nov-21

Client: Vertex Resources Services, Inc.

Project: Cooper AAH 1 Row

Sample ID: **2111923-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BH21-01 0'** Batch ID: **64081** RunNo: **83061**

Prep Date: **11/22/2021** Analysis Date: **11/23/2021** SeqNo: **2951657** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.9	49.65	0	92.2	39.3	155			
Surr: DNOP	4.2		4.965		83.9	70	130			

Sample ID: **2111923-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **BH21-01 0'** Batch ID: **64081** RunNo: **83061**

Prep Date: **11/22/2021** Analysis Date: **11/23/2021** SeqNo: **2951658** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.3	46.25	0	87.9	39.3	155	11.9	23.4	
Surr: DNOP	3.7		4.625		79.7	70	130	0	0	

Sample ID: **LCS-64081** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **64081** RunNo: **83061**

Prep Date: **11/22/2021** Analysis Date: **11/23/2021** SeqNo: **2951755** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	95.0	68.9	135			
Surr: DNOP	4.4		5.000		87.2	70	130			

Sample ID: **MB-64081** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **64081** RunNo: **83061**

Prep Date: **11/22/2021** Analysis Date: **11/23/2021** SeqNo: **2951760** 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	9.2		10.00		92.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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#: **2111923**

30-Nov-21

Client: Vertex Resources Services, Inc.

Project: Cooper AAH 1 Row

Sample ID: **mb-64025** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **64025** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947749** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		99.2	70	130			

Sample ID: **mb-64033** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **64033** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947750** 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	920		1000		92.4	70	130			

Sample ID: **lcs-64025** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **64025** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947751** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	70	130			

Sample ID: **lcs-64033** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **64033** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947752** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.3	78.6	131			
Surr: BFB	1100		1000		109	70	130			

Sample ID: **2111923-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH21-01 0'** Batch ID: **64033** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947754** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	33	4.9	24.41	0	136	61.3	114			S
Surr: BFB	1100		976.6		112	70	130			

Sample ID: **2111923-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH21-01 0'** Batch ID: **64033** RunNo: **83008**
Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947756** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	33	4.9	24.49	0	133	61.3	114	2.02	20	S
Surr: BFB	1100		979.4		115	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2111923**
30-Nov-21

Client: Vertex Resources Services, Inc.
Project: Cooper AAH 1 Row

Sample ID: **mb-64025**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **PBS**	Batch ID: **64025**	RunNo: **83008**						
Prep Date: **11/18/2021**	Analysis Date: **11/19/2021**	SeqNo: **2947797**	Units: **%Rec**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		94.0	70	130			

Sample ID: **mb-64033**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **PBS**	Batch ID: **64033**	RunNo: **83008**						
Prep Date: **11/18/2021**	Analysis Date: **11/19/2021**	SeqNo: **2947798**	Units: **mg/Kg**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		89.7	70	130			

Sample ID: **lcs-64025**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **LCSS**	Batch ID: **64025**	RunNo: **83008**						
Prep Date: **11/18/2021**	Analysis Date: **11/19/2021**	SeqNo: **2947799**	Units: **%Rec**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	70	130			

Sample ID: **lcs-64033**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **LCSS**	Batch ID: **64033**	RunNo: **83008**						
Prep Date: **11/18/2021**	Analysis Date: **11/19/2021**	SeqNo: **2947800**	Units: **mg/Kg**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.6	80	120			
Toluene	0.93	0.050	1.000	0	92.7	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.5	70	130			

Sample ID: **2111923-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**						
Client ID: **BH21-01 1'**	Batch ID: **64033**	RunNo: **83008**						
Prep Date: **11/18/2021**	Analysis Date: **11/19/2021**	SeqNo: **2947802**	Units: **mg/Kg**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9737	0	113	80	120			
Toluene	1.1	0.049	0.9737	0	115	80	120			
Ethylbenzene	1.2	0.049	0.9737	0	118	80	120			
Xylenes, Total	3.4	0.097	2.921	0	117	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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#: **2111923**

30-Nov-21

Client: Vertex Resources Services, Inc.

Project: Cooper AAH 1 Row

Sample ID: **2111923-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH21-01 1'** Batch ID: **64033** RunNo: **83008**

Prep Date: **11/18/2021** Analysis Date: **11/19/2021** SeqNo: **2947802** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.89		0.9737		90.9	70	130			

Sample ID: **2111923-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH21-01 1'** Batch ID: **64033** RunNo: **83008**

Prep Date: **11/18/2021** Analysis Date: **11/20/2021** SeqNo: **2947804** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.024	0.9699	0	123	80	120	7.49	20	S
Toluene	1.2	0.048	0.9699	0	124	80	120	7.41	20	S
Ethylbenzene	1.3	0.048	0.9699	0	130	80	120	9.02	20	S
Xylenes, Total	3.7	0.097	2.910	0	128	80	120	8.56	20	S
Surr: 4-Bromofluorobenzene	0.89		0.9699		91.7	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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		

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: Vertex Resources Services, Inc.

Work Order Number: 2111923

RcptNo: 1

Received By: Cheyenne Cason 11/18/2021 8:45:00 AM

Completed By: Sean Livingston 11/18/2021 10:47:50 AM

Reviewed By: TME 11/18/21 15:04

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: ~~TME~~ MRG 11/18/21 TME 11/18/21

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	0.9	Good				

Chain-of-Custody Record

Client: EOG / Vertex
C. 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: Cooper AAH #1 ROW
Project #: 21E-03278
Project Manager: Dennis Williams
Sampler: MJP
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 0.9 +0 = 0.9 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2111923	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/16	8:45	Soil	BH21-01 0'	402	ice	001	✓	✓					✓			
	8:50		BH21-01 1'			002										
	8:55		BH21-01 2'			003										
	9:00		BH21-01 3'			004										
	9:05		BH21-01 4'			005										
	9:10		BH21-02 0'			006										
	9:15		BH21-02 1'			007										
	9:20		BH21-02 2'			008										
	9:25		BH21-02 3'			009										
	9:30		BH21-02 4'			010										
	9:35		BH21-03 0'			011										
	9:40		BH21-03 1'			012										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/17/21	1100				11/17/21	1100
11/17/21	1100		CMC carrier		11/18/21	0845

Remarks:
Direct Bill EOG
CC: MPeppin

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 / Vertex
C. 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: Cooper AAH #1 ROW
Project #: 21E-03278
Project Manager: Dennis Williams
Sampler: MJP
On Ice: ☑ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 0.9 -0 = 0.9 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/16	9:45	Soil	BH21-03 2'	402	ICE	013	✓	✓					✓			
	9:50		BH21-03 3'			014										
	9:55		BH21-03 4'			015										
	10:00		BH21-04 0'			016										
	10:05		BH21-04 1'			017										
	10:16		BH21-04 2'			018										
	10:15		BH21-04 3'			019										
	10:20		BH21-04 4'			020										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/17/21	1100				11/17/21	1100
11/17/21	1900		Emc Courier		11/18/21	0845

Remarks: Direct bill EOG
CC: MPeppin Final Report

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: clients.hallenvironmental.com

December 07, 2021

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

RE: Cooper AAH 1 Row OrderNo.: 2111C03

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 7 sample(s) on 11/24/2021 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 **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS21-01 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:40:00 AM
Lab ID: 2111C03-001 **Matrix:** SOIL
Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 4:10:19 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/1/2021 6:20:17 AM	64176
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2021 6:20:17 AM	64176
Surr: DNOP	86.5	70-130		%Rec	1	12/1/2021 6:20:17 AM	64176
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2021 7:34:15 PM	64166
Surr: BFB	100	70-130		%Rec	1	11/29/2021 7:34:15 PM	64166
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/29/2021 7:34:15 PM	64166
Toluene	ND	0.047		mg/Kg	1	11/29/2021 7:34:15 PM	64166
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2021 7:34:15 PM	64166
Xylenes, Total	ND	0.093		mg/Kg	1	11/29/2021 7:34:15 PM	64166
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	11/29/2021 7:34:15 PM	64166

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	Value above quantitation range
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 **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS21-02 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:50:00 AM
Lab ID: 2111C03-002 **Matrix:** SOIL
Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 4:22:40 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/2/2021 4:21:51 AM	64215
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2021 4:21:51 AM	64215
Surr: DNOP	88.3	70-130		%Rec	1	12/2/2021 4:21:51 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2021 7:57:49 PM	64166
Surr: BFB	100	70-130		%Rec	1	11/29/2021 7:57:49 PM	64166
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/29/2021 7:57:49 PM	64166
Toluene	ND	0.047		mg/Kg	1	11/29/2021 7:57:49 PM	64166
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2021 7:57:49 PM	64166
Xylenes, Total	ND	0.095		mg/Kg	1	11/29/2021 7:57:49 PM	64166
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	11/29/2021 7:57:49 PM	64166

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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: BS21-03 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 12:00:00 PM
Lab ID: 2111C03-003 **Matrix:** SOIL **Received Date:** 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	59		mg/Kg	20	12/1/2021 4:35:00 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/2/2021 4:32:20 AM	64215
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2021 4:32:20 AM	64215
Surr: DNOP	101	70-130		%Rec	1	12/2/2021 4:32:20 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2021 8:21:18 PM	64166
Surr: BFB	96.4	70-130		%Rec	1	11/29/2021 8:21:18 PM	64166
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/29/2021 8:21:18 PM	64166
Toluene	ND	0.048		mg/Kg	1	11/29/2021 8:21:18 PM	64166
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2021 8:21:18 PM	64166
Xylenes, Total	ND	0.096		mg/Kg	1	11/29/2021 8:21:18 PM	64166
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	11/29/2021 8:21:18 PM	64166

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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS21-01 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:00:00 AM
Lab ID: 2111C03-004 **Matrix:** SOIL **Received Date:** 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 4:47:21 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/2/2021 4:42:50 AM	64215
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2021 4:42:50 AM	64215
Surr: DNOP	103	70-130		%Rec	1	12/2/2021 4:42:50 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2021 8:44:33 PM	64166
Surr: BFB	101	70-130		%Rec	1	11/29/2021 8:44:33 PM	64166
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/29/2021 8:44:33 PM	64166
Toluene	ND	0.048		mg/Kg	1	11/29/2021 8:44:33 PM	64166
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2021 8:44:33 PM	64166
Xylenes, Total	ND	0.095		mg/Kg	1	11/29/2021 8:44:33 PM	64166
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/29/2021 8:44:33 PM	64166

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	Value above quantitation range
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 **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS21-02 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:10:00 AM
Lab ID: 2111C03-005 **Matrix:** SOIL
Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 4:59:41 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/2/2021 4:53:18 AM	64215
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2021 4:53:18 AM	64215
Surr: DNOP	91.4	70-130		%Rec	1	12/2/2021 4:53:18 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/30/2021 4:15:00 PM	64196
Surr: BFB	98.1	70-130		%Rec	1	11/30/2021 4:15:00 PM	64196
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/30/2021 4:15:00 PM	64196
Toluene	ND	0.047		mg/Kg	1	11/30/2021 4:15:00 PM	64196
Ethylbenzene	ND	0.047		mg/Kg	1	11/30/2021 4:15:00 PM	64196
Xylenes, Total	ND	0.093		mg/Kg	1	11/30/2021 4:15:00 PM	64196
Surr: 4-Bromofluorobenzene	97.2	70-130		%Rec	1	11/30/2021 4:15:00 PM	64196

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	Value above quantitation range
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 **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS21-03 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:20:00 AM
Lab ID: 2111C03-006 **Matrix:** SOIL
Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 5:12:02 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/2/2021 5:03:47 AM	64215
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2021 5:03:47 AM	64215
Surr: DNOP	83.9	70-130		%Rec	1	12/2/2021 5:03:47 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/30/2021 4:38:30 PM	64196
Surr: BFB	99.9	70-130		%Rec	1	11/30/2021 4:38:30 PM	64196
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/30/2021 4:38:30 PM	64196
Toluene	ND	0.046		mg/Kg	1	11/30/2021 4:38:30 PM	64196
Ethylbenzene	ND	0.046		mg/Kg	1	11/30/2021 4:38:30 PM	64196
Xylenes, Total	ND	0.092		mg/Kg	1	11/30/2021 4:38:30 PM	64196
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	11/30/2021 4:38:30 PM	64196

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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2111C03**
Date Reported: **12/7/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG
Client Sample ID: WS21-04 0-4
Project: Cooper AAH 1 Row
Collection Date: 11/23/2021 11:30:00 AM
Lab ID: 2111C03-007 **Matrix:** SOIL
Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	12/1/2021 5:24:23 PM	64243
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/2/2021 5:14:15 AM	64215
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/2/2021 5:14:15 AM	64215
Surr: DNOP	92.2	70-130		%Rec	1	12/2/2021 5:14:15 AM	64215
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/30/2021 5:02:04 PM	64196
Surr: BFB	101	70-130		%Rec	1	11/30/2021 5:02:04 PM	64196
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/30/2021 5:02:04 PM	64196
Toluene	ND	0.046		mg/Kg	1	11/30/2021 5:02:04 PM	64196
Ethylbenzene	ND	0.046		mg/Kg	1	11/30/2021 5:02:04 PM	64196
Xylenes, Total	ND	0.093		mg/Kg	1	11/30/2021 5:02:04 PM	64196
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/30/2021 5:02:04 PM	64196

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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111C03**

07-Dec-21

Client: EOG

Project: Cooper AAH 1 Row

Sample ID: **MB-64243**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **64243**	RunNo: **83213**
Prep Date: **12/1/2021**	Analysis Date: **12/1/2021**	SeqNo: **2957107** Units: **mg/Kg**

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

Sample ID: **LCS-64243**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **64243**	RunNo: **83213**
Prep Date: **12/1/2021**	Analysis Date: **12/1/2021**	SeqNo: **2957108** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2111C03**
07-Dec-21

Client: EOG
Project: Cooper AAH 1 Row

Sample ID: **LCS-64176** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64176** RunNo: **83165**
Prep Date: **11/29/2021** Analysis Date: **12/1/2021** SeqNo: **2956172** 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	82.9	68.9	135			
Surr: DNOP	4.1		5.000		81.8	70	130			

Sample ID: **MB-64176** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **64176** RunNo: **83165**
Prep Date: **11/29/2021** Analysis Date: **12/1/2021** SeqNo: **2956176** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.1	70	130			

Sample ID: **LCS-64215** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64215** RunNo: **83211**
Prep Date: **11/30/2021** Analysis Date: **12/2/2021** SeqNo: **2956906** 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	82.2	68.9	135			
Surr: DNOP	3.9		5.000		78.4	70	130			

Sample ID: **LCS-64223** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64223** RunNo: **83211**
Prep Date: **11/30/2021** Analysis Date: **12/1/2021** SeqNo: **2956907** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.7	70	130			

Sample ID: **LCS-64225** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64225** RunNo: **83211**
Prep Date: **11/30/2021** Analysis Date: **12/1/2021** SeqNo: **2956908** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.3	70	130			

Sample ID: **LCS-64239** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64239** RunNo: **83211**
Prep Date: **12/1/2021** Analysis Date: **12/1/2021** SeqNo: **2956909** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		76.0	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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111C03**

07-Dec-21

Client: EOG

Project: Cooper AAH 1 Row

Sample ID: **MB-64223**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **64223**	RunNo: **83211**							
Prep Date: **11/30/2021**	Analysis Date: **12/1/2021**	SeqNo: **2956910**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		134	70	130			S

Sample ID: **MB-64225**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **64225**	RunNo: **83211**							
Prep Date: **11/30/2021**	Analysis Date: **12/1/2021**	SeqNo: **2956911**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		104	70	130			

Sample ID: **MB-64239**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **64239**	RunNo: **83211**							
Prep Date: **12/1/2021**	Analysis Date: **12/1/2021**	SeqNo: **2956912**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	70	130			

Sample ID: **MB-64215**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **64215**	RunNo: **83242**							
Prep Date: **11/30/2021**	Analysis Date: **12/2/2021**	SeqNo: **2957749**	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	12		10.00		124	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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111C03**

07-Dec-21

Client: EOG

Project: Cooper AAH 1 Row

Sample ID: **mb-64166**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **64166**	RunNo: **83144**
Prep Date: **11/24/2021**	Analysis Date: **11/29/2021**	SeqNo: **2953865** 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	990		1000		98.9	70	130			

Sample ID: **lcs-64166**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **64166**	RunNo: **83144**
Prep Date: **11/24/2021**	Analysis Date: **11/29/2021**	SeqNo: **2953866** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.1	78.6	131			
Surr: BFB	1100		1000		111	70	130			

Sample ID: **mb-64196**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **64196**	RunNo: **83185**
Prep Date: **11/29/2021**	Analysis Date: **11/30/2021**	SeqNo: **2955215** 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		97.3	70	130			

Sample ID: **lcs-64196**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **64196**	RunNo: **83185**
Prep Date: **11/29/2021**	Analysis Date: **11/30/2021**	SeqNo: **2955216** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.6	78.6	131			
Surr: BFB	1100		1000		113	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	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111C03**

07-Dec-21

Client: EOG

Project: Cooper AAH 1 Row

Sample ID: **mb-64166**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **64166**	RunNo: **83144**
Prep Date: **11/24/2021**	Analysis Date: **11/29/2021**	SeqNo: **2953909** 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		98.7	70	130			

Sample ID: **LCS-64166**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **64166**	RunNo: **83144**
Prep Date: **11/24/2021**	Analysis Date: **11/29/2021**	SeqNo: **2953910** 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	96.0	80	120			
Toluene	0.94	0.050	1.000	0	94.2	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: **mb-64196**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **64196**	RunNo: **83185**
Prep Date: **11/29/2021**	Analysis Date: **11/30/2021**	SeqNo: **2955257** 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	0.97		1.000		97.2	70	130			

Sample ID: **LCS-64196**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **64196**	RunNo: **83185**
Prep Date: **11/29/2021**	Analysis Date: **11/30/2021**	SeqNo: **2955258** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.3	80	120			
Toluene	0.93	0.050	1.000	0	93.4	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.7	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	Value above quantitation range
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: 2111C03 | RcptNo: 1

Received By: **Cheyenne Cason** 11/24/2021 7:43:00 AM

Completed By: **Isaiah Ortiz** 11/24/2021 8:16:39 AM

Reviewed By: JN 11/24/21

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: LMC 11/24/21

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	3.1	Good	Not Present			
2	4.9	Good	Not Present			

Chain-of-Custody Record

Client: EOG / Vertex
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: Cooper AAH #1 ROW
Project #: 21E-03278
Project Manager: Dennis Williams
Sampler: MJP
On Ice: ☑ Yes ☐ No
# of Coolers: 2 3.1-0=3.1
Cooler Temp(including CF): 4.9-0=4.9 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2111C03	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/23	11:40	Soil	BS21-01 0-4	402	ice	001	✓	✓					✓			
	11:50		BS21-02 0-4			002	✓	✓					✓			
	12:00		BS21-03 0-4			003	✓	✓					✓			
	11:00		WS21-01 0-4			004	✓	✓					✓			
	11:10		WS21-02 0-4			005	✓	✓					✓			
	11:20		WS21-03 0-4			006	✓	✓					✓			
	11:30		WS21-04 0-4			007	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/23/21	1445				11/23/21	1445
11/23/21	1900				11/24/21	0743

Remarks: Direct Bill EOG
CC: MPeppin Final Report

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 80891

CONDITIONS

Operator:	OGRID:
EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	7377
	Action Number: 80891
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	3/24/2022