SDE 31 Fed 1

5/10/2019

OCD incident nAB1915738719

Spill Volume(Bbls) Calculator		
Inputs in blue, Outputs in red		
Contaminated Soil measurement		
Length(Ft)	Width(Ft)	Depth(Ft)
15	100.000	0.021
Cubic Feet of Soil Impacted		31.500
Barrels of Soil Impacted		5.61
Soil Type		Clay/Sand
Barrels of Oil Assuming 100% Saturation		0.84
Saturation	Fluid present with shovel/backhoe	
Estimated Barrels of Oil Released		0.84
Free Standing Fluid Only		
Length(Ft)	Width(Ft)	Depth(Ft)
10	40.000	0.125
Standing fluid		8.893
Total fluids spilled		**9.735**

Incident Number: nAB1915738719

Release Assessment and Closure

SDE 31 Federal #001

Unit D, Section 31, Township 23 South, Range 32 East

API: 30-025-32676

County: Lea

Vertex File Number: 23E-05201

Prepared for:

Devon Energy Production Company, LP

Prepared by:

Vertex Resource Services Inc.

Date:

May 2024

Release Assessment and Closure
SDE 31 Federal #001
Unit D, Section 31, Township 23 South, Range 32 East
API: 30-025-32676
County: Lea

Prepared for:
Devon Energy Production Company, LP
6488 Seven Rivers Highway
Artesia, New Mexico 88210

New Mexico Oil Conservation Division – District 1
1625 North French Drive
Hobbs, New Mexico 88240

Prepared by:
Vertex Resource Services Inc.
3101 Boyd Drive
Carlsbad, New Mexico 88220

Stephanie McCarty

Stephanie McCarty, B.Sc.
ENVIRONMENTAL TECHNOLOGIST, REPORTING

May 8, 2024
Date

kent stallings P.G.

Kent Stallings, P.G.
PROJECT MANAGER, REPORT REVIEW

May 21, 2024
Date

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1.0 Introduction

Devon Energy Production Company, LP (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a crude oil and produced water release that occurred on May 10, 2019, at SDE 31 Federal #001, API: 30-025-32676 (hereafter referred to as the "site"). Devon submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 1 on June 6, 2019. Incident ID number nAB1915738719 was assigned to this incident.

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

2.0 Incident Description

The release occurred on May 10, 2019, when corrosion developed a hole in the flowline from the wellhead. The incident was reported on June 6, 2019, and involved the release of 0.25 barrels (bbl.) of crude oil and 7 bbl. of produced water on to the wellpad. During the initial clean-up, 0.25 bbl. of crude oil and 7 bbl. of produced water were recovered. Additional details relevant to the release are presented in the C-141 Report (Appendix A).

3.0 Site Characteristics

The site is located approximately 20 miles southwest of Malaga, New Mexico at, 32.26630° N, -103.72080° W (Google Inc., 2023). The legal location for the site is Section 31, Township 23 South and Range 32 East in Lea County, New Mexico. The release area is located on federal property. The equipment on-site has been removed and the pad has been reclaimed. An aerial photograph and characterization sampling site schematic is presented on Figure 1.

The location is typical of oil and gas exploration and production sites in the Permian Basin and was formerly used for oil and gas production. The following sections specifically describe the release area at the site or in proximity to the reclaimed pad (Figure 1).

The *Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the surface geology at the site primarily comprises Qep – Eolian and piedmont deposits (Holocene to middle Pleistocene) Interlayed eolian sands and piedmont-slope deposits. The soil at the site is characterized as Maljamar and Palomas Fine Sand (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Additional soil characteristics include well drained soil with very low runoff and low available moisture levels in the soil profile. The karst geology potential for the site is low (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with plains and dunes at elevations of 3,000 to 4,400 feet above sea level. The climate is semi-arid with average annual precipitation ranging between 10 and 12 inches. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be grasses with shrubs. Giant

dropseed (*Sporobolus giganteus*) and other dropseeds (*S. flexuosus, S. contractus, S. cryptandrus*) and bluestem (*Andropogon hallii, Schizachyrium scoparium*), with scattered shinnery oak (*Quercus havardii*) and soapweed yucca (*Yucca glauca*) dominates the historical plant community in this area. Bare ground and litter compose a significant proportion of ground cover. Fire suppression, overgrazing and extended drought can reduce the giant dropseed, increasing sand sage (*Artemisia filifolia*) and shrub dispersal of the shinnery oak and honey mesquite (*Prosopis glandulosa*) sparsely dotted in this historical grassland community (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

4.0 Closure Criteria Determination

The nearest depth to groundwater reference is exploratory borehole C-04712 POD-1, which was drilled approximately 0.36 miles southeast of the site on March 9, 2023. The exploratory borehole was dry at its maximum depth of 55 feet below ground surface (bgs).

The depth to groundwater was determined by drilling a borehole permitted by the New Mexico Office of the State Engineer (NMOSE) within a 0.5 mile radius of the site. The borehole was advanced to a depth of 55 feet. The borehole was left to recharge as per the requirements on the WR-07 Application for Permit to Drill a Well with No Water Rights, and a Solinst Interface Meter probe model 122 was utilized to determine whether groundwater was present at the conclusion of the 72-hour recharge period. No water was found to be present at that time. The borehole was plugged and abandoned according to the WR-08 permit, Well Plugging Plan of Operations, filed with NMOSE. Supporting documentation related to the exploratory borehole is included in Appendix B.

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream. It is identified in the National Wetlands Inventory approximately 4.9 miles northwest of the site (United States Fish and Wildlife Service, 2023).

At the site, there are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC. The closure criteria research documentation is included in Appendix B.

Table 1. Closure Criteria Determination			
Site Name: SDE 31 Federal #001			
Spill Coordinates: 32.26630, -103.72080		**X: 620481.09**	**Y: 3570671.74**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater (nearest reference)	**>55**	feet
	Distance between release and nearest DTGW reference	**1,903**	feet
		0.36	miles
	Date of nearest DTGW reference measurement	**March 9, 2023**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	25,782	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	28,740	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	23,226	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**	7,335	feet
	ii) Within 1000 feet of any fresh water well or spring	47,232	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	8,797	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	59,291	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	39,655	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	36,076	feet
11	Soil Type	Maljamar and Palomas Fine Sand	
12	Ecological Classification	Deep Sand/Loamy Sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 2.

Table 2. Closure Criteria for Soils to Remediation & Reclamation Standards

	Constituent	Limit
0-4 feet bgs (19.15.29.13)	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
DTGW 51-100 feet (19.15.29.12)	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

bgs – below ground surface
DTGW – depth to groundwater
TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics
BTEX – benzene, toluene, ethylbenzene and xylenes

5.0 Remedial Actions Taken

An initial site inspection of the release area was completed on November 8, 2023, and characterization was completed on January 29, 2024, which identified the area of the release specified in the initial C-141 Report. The impacted area and impacted area per closure criteria was determined to be approximately 107 feet long and 77 feet wide; the total affected area was 5,465 square feet.

Remediation efforts began on March 19, 2024, and were finalized on March 26, 2024. Vertex personnel supervised the excavation of impacted soils. Field screening was conducted and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and electroconductivity meter (chlorides). Field screening results were used to identify areas requiring further remediation. Characterization results are summarized in Table 3. Confirmation laboratory results are summarized in Table 4, and an excavation and confirmation sampling site schematic is presented on Figure 2. Daily Field Reports documenting various phases of the remediation are included in Appendix C.

Notification that confirmatory samples were being collected was provided to the NMOCD on March 20, 2024 (Appendix D). Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 31 samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory, now Eurofins Environmental Testing South Central, in Albuquerque, New Mexico, under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 4, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below closure criteria for the site.

6.0 Closure Request

The release area was fully delineated, remediated and backfilled with local soils. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a release location where depth to ground water is greater than 55 feet bgs. Based on these findings, Devon requests that this release be closed.

Should you have any questions or concerns, please do not hesitate to contact Kent Stallings at 346.814.1413 or kstallings@vertex.ca.

7.0 References

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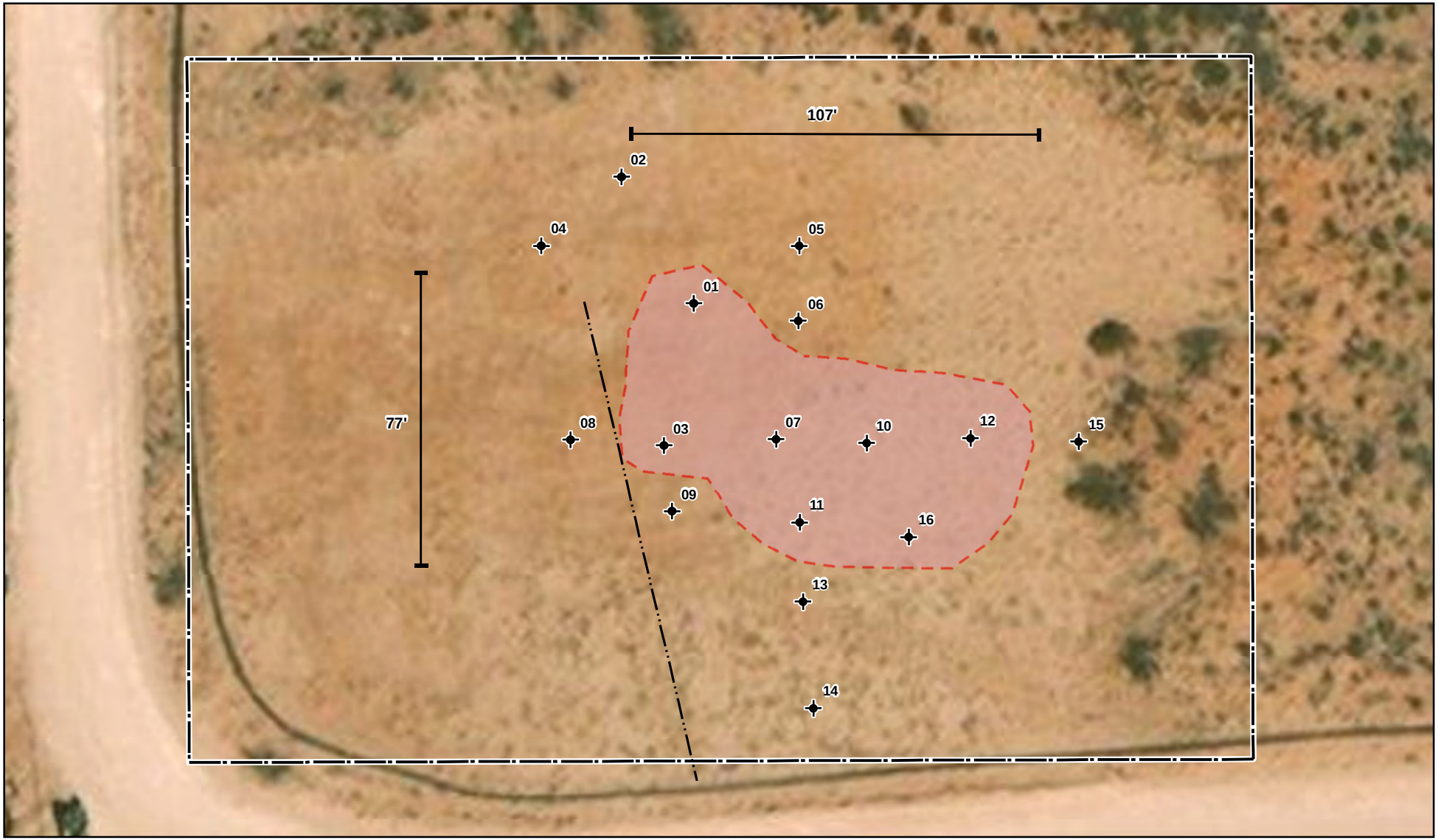
United States Geological Survey. (2023). *National Water Information System: Web Interface*. Retrieved from https://waterdata.usgs.gov/nwis

8.0 Limitations

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

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

FIGURES



Borehole (Prefixed by "BH23-") | Pipeline | Approximate Former Lease Boundary | Approximate Release Area (~ 5,465 sq. ft.)

VERTEX

0 10 20 40 ft

NAD 1983 UTM Zone 13N

Date: Jan 30/24

N

Characterization Sampling Site Schematic
SDE 31 Federal #001

FIGURE: 1

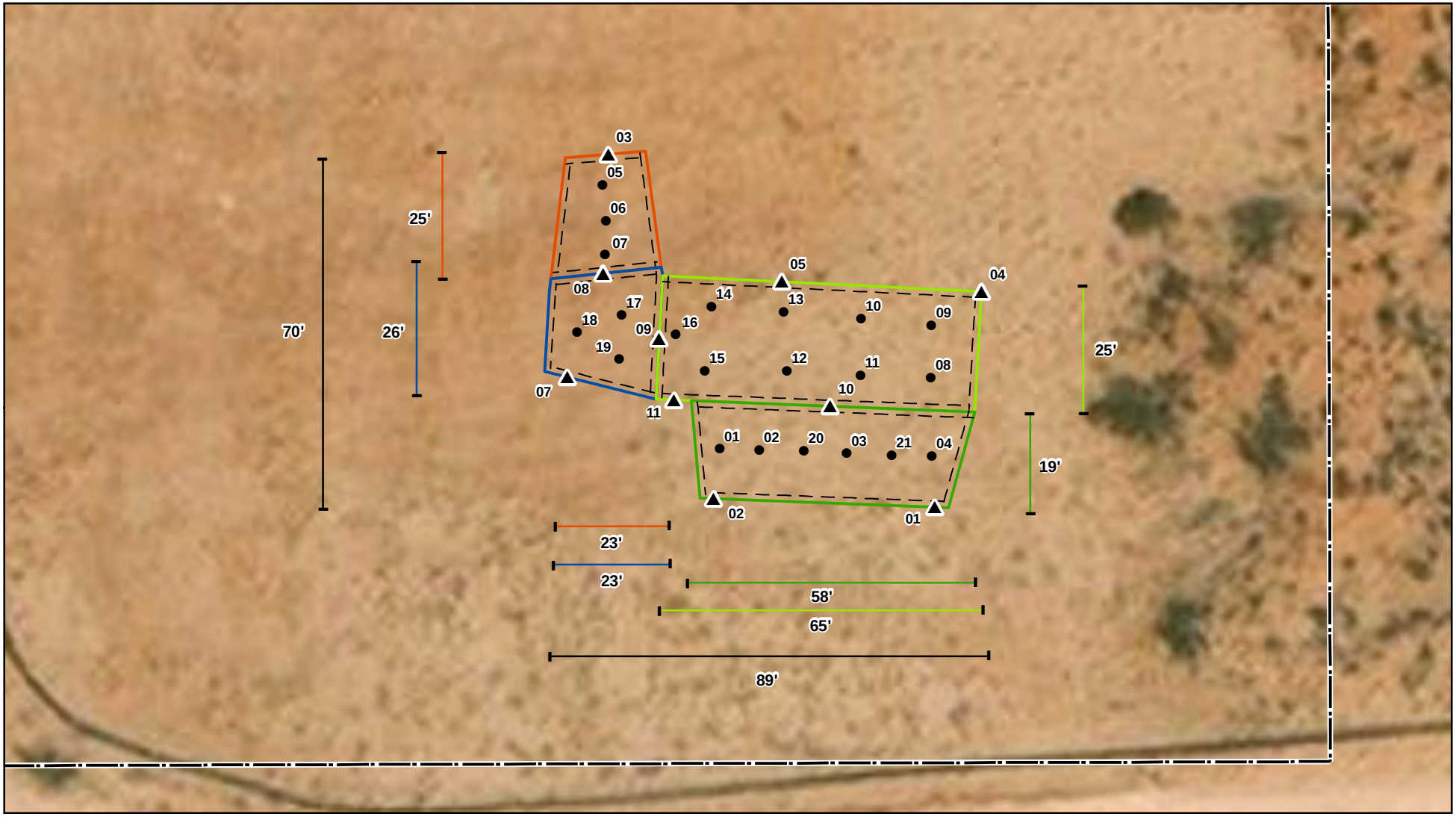
devon

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

Note: Georeferenced image from Esri, 2022. Boreholes and approximate release area from GPS by Vertex Professional Services Ltd., 2023. Approximate lease boundary from imagery by Vertex, 2024.

VERSATILITY. EXPERTISE.

Document Path: D:\Vertex\GeoRequests\23E-05201\Figure 1 Characterization Sampling Site Sketch (23E-05201) ID17742.mxd



● Base Sample (Prefixed by "BS24-")

▲ Wall Sample (Prefixed by "WS24-")

Approximate Former Lease Boundary

Excavation to 1' bgs (~ 470 sq. ft.)

Excavation to 4' bgs (1,614 sq. ft.)

South Excavation to 3' bgs (~ 1,067 sq. ft.)

West Excavation to 3' bgs (~ 522 sq. ft.)

Total Excavation Area: ~ 3,673 sq. ft.

VERTEX

0 10 20 40 ft

Map Center:
Lat/Long: 32.266227, -103.720730

NAD 1983 UTM Zone 13N

Date: Apr 16/24

N

Confirmatory Sampling Site Schematic
SDE 31 Federal #001

FIGURE: 2

devon

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

Note: Georeferenced image from Esri, 2022. Approximate site boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2024. Site features from GPS, Vertex, 2024.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2023\23E-05201 - SDE 31 Federal #001\Figure 2 Confirmatory Sampling Site Schematic (23E-05201) ID18087.mxd

TABLES

Client Name: Devon Energy Production Company, LP
Site Name: SDE 31 Federal #001
NMOCD Tracking #: nAB1915738719
Project #: 23E-05201
Lab Reports: 2311555, 2311613, 2311678 and 2402005

Table 3. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(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)
BH23-01	0	November 8, 2023	-	-	**875**	ND	ND	ND	ND	ND	ND	ND	**690**
	2	November 8, 2023	-	33	200	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	0	November 8, 2023	-	18	225	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	34	200	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	0	November 8, 2023	-	54	275	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	-	**650**	ND	ND	ND	16	ND	16	16	**740**
	4	November 8, 2023	-	-	464	ND	ND	ND	ND	ND	ND	ND	560
BH23-04	0	November 8, 2023	-	22	250	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	31	200	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	0	November 8, 2023	-	0	225	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	52	175	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	November 8, 2023	-	65	ND	ND	ND	ND	ND	ND	ND	ND	78
	2	November 8, 2023	-	19	119	ND	ND	ND	ND	ND	ND	ND	320
BH23-07	0	November 8, 2023	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	-	**1,843**	ND	ND	ND	12	ND	12	12	**2000**
	4	November 10, 2023	-	-	-	ND	ND	ND	ND	ND	ND	ND	**1200**
	6	November 10, 2023	-	-	**1,900**	ND	ND	ND	ND	ND	ND	ND	**1200**
	7	January 29, 2024	0	19	243	ND	ND	ND	ND	ND	ND	ND	**350**
BH23-08	0	November 8, 2023	-	64	ND	ND	ND	ND	18	ND	18	18	ND
	2	November 8, 2023	-	99	395	ND	ND	ND	ND	ND	ND	ND	420
BH23-09	0	November 8, 2023	-	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 8, 2023	-	25	72	ND	ND	ND	ND	ND	ND	ND	140
BH23-10	0	November 9, 2023	-	-	50	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 9, 2023	-	-	**800**	ND	ND	ND	ND	ND	ND	ND	**1100**
	4	November 9, 2023	-	-	**1,250**	ND	ND	ND	ND	ND	ND	ND	**1100**
	5	November 10, 2023	-	-	**1,250**	ND	ND	ND	ND	ND	ND	ND	**1000**
BH23-11	0	November 9, 2023	-	80	250	ND	ND	ND	ND	ND	ND	ND	150
	2	November 9, 2023	-	-	**1,200**	ND	ND	ND	ND	ND	ND	ND	**1500**
	4	November 9, 2023	-	36	200	ND	ND	ND	ND	ND	ND	ND	190
BH23-12	0	November 9, 2023	-	50	125	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 9, 2023	-	-	**1,250**	ND	ND	ND	ND	ND	ND	ND	**1300**
	4	November 10, 2023	-	0	550	ND	ND	ND	ND	ND	ND	ND	**650**
BH23-13	0	November 9, 2023	-	42	100	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 9, 2023	-	24	375	ND	ND	ND	ND	ND	ND	ND	250
	4	November 10, 2023	-	0	200	ND	ND	ND	ND	ND	ND	ND	160
BH23-14	0	November 9, 2023	-	50	150	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 9, 2023	-	56	400	ND	ND	ND	ND	ND	ND	ND	350
BH23-15	0	November 9, 2023	-	37	45	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 9, 2023	-	37	168	ND	ND	ND	ND	ND	ND	ND	ND
BH23-16	0	November 10, 2023	-	5	175	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 10, 2023	-	141	525	ND	ND	ND	ND	ND	ND	ND	**1700**

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

VERTEX

Client Name: Devon Energy Production Company, LP
Site Name: SDE 31 Federal #001
NMOCD Tracking #: nAB1915738719
Project #: 23E-05201
Lab Report: 885-1917-1

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

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(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)
BS24-01	3	March 26, 2024	0	25	324	ND	ND	ND	ND	ND	ND	ND	160
BS24-02	3	March 26, 2024	0	22	458	ND	ND	ND	ND	ND	ND	ND	220
BS24-03	3	March 26, 2024	0	24	206	ND	ND	ND	ND	ND	ND	ND	160
BS24-04	3	March 26, 2024	0	15	92	ND	ND	ND	ND	ND	ND	ND	ND
BS24-05	1	March 26, 2024	0	65	294	ND	ND	ND	ND	ND	ND	ND	ND
BS24-06	1	March 26, 2024	0	41	334	ND	ND	ND	ND	ND	ND	ND	65
BS24-07	1	March 26, 2024	0	41	252	ND	ND	ND	ND	ND	ND	ND	ND
BS24-08	4	March 26, 2024	0	32	1,655	ND	ND	ND	ND	ND	ND	ND	1,300
BS24-09	4	March 26, 2024	0	39	1,203	ND	ND	ND	ND	ND	ND	ND	1,000
BS24-10	4	March 26, 2024	0	31	1,730	ND	ND	ND	ND	ND	ND	ND	1,400
BS24-11	4	March 26, 2024	0	46	1,576	ND	ND	ND	ND	ND	ND	ND	1,200
BS24-12	4	March 26, 2024	0	38	1,073	ND	ND	ND	ND	ND	ND	ND	510
BS24-13	4	March 26, 2024	0	38	1,258	ND	ND	ND	ND	ND	ND	ND	850
BS24-14	4	March 26, 2024	0	50	1,431	ND	ND	ND	ND	ND	ND	ND	890
BS24-15	4	March 26, 2024	0	44	770	ND	ND	ND	ND	ND	ND	ND	460
BS24-16	4	March 26, 2024	0	52	1,729	ND	ND	ND	ND	ND	ND	ND	1,500
BS24-17	3	March 26, 2024	0	15	567	ND	ND	ND	ND	ND	ND	ND	210
BS24-18	3	March 26, 2024	0	13	512	ND	ND	ND	ND	ND	ND	ND	180
BS23-19	3	March 26, 2024	0	9	586	ND	ND	ND	ND	ND	ND	ND	200
BS23-20	3	March 26, 2024	0	9	251	ND	ND	ND	ND	ND	ND	ND	180
BS24-21	3	March 26, 2024	0	10	161	ND	ND	ND	ND	ND	ND	ND	150
WS24-01	0-3	March 26, 2024	0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS24-02	0-3	March 26, 2024	0	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS24-03	0-1	March 26, 2024	0	16	79	ND	ND	ND	ND	ND	ND	ND	ND
WS24-04	0-4	March 26, 2024	0	37	331	ND	ND	ND	ND	ND	ND	ND	280
WS24-05	0-4	March 26, 2024	0	52	363	ND	ND	ND	ND	ND	ND	ND	220
WS24-07	0-3	March 26, 2024	0	81	532	ND	ND	ND	ND	ND	ND	ND	310
WS24-08	1-3	March 26, 2024	0	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS24-09	3-4	March 26, 2024	0	69	516	ND	ND	ND	ND	ND	ND	ND	280
WS24-10	3-4	March 26, 2024	0	12	128	ND	ND	ND	ND	ND	ND	ND	ND
WS24-11	0-4	March 26, 2024	0	15	88	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 NMOCD Remediation Closure Criteria
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Closure Criteria

VERTEX

APPENDIX A - NMOCD C-141 Report

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAB1915738719
District RP	1RP-5530
Facility ID	
Application ID	pAB1915738459

Release Notification

Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Amanda T. Davis	Contact Telephone 575-748-0176
Contact email amanda.davis@dvn.com	Incident # *(assigned by OCD)* NAB1915738719
Contact mailing address 6488 Seven Rivers HWY	

Location of Release Source

Latitude 32.26630 Longitude -103.72080
(NAD 83 in decimal degrees to 5 decimal places)

Site Name SDE 31 Fed #001	Site Type Oil
Date Release Discovered 5/10/2019	API# *(if applicable)* 30-025-32676

Unit Letter	Section	Township	Range	County
D	31	23S	32E	Lea

Surface Owner: ☐ State ■ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

■ Crude Oil	Volume Released (bbls) .25	Volume Recovered (bbls) .25
■ Produced Water	Volume Released (bbls) 7	Volume Recovered (bbls) 7
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Flow line leak from the wellhead. Affected area 15'x100'x1/4". All fluid stayed on location.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	1RP-5530
Facility ID	
Application ID	pAB1915738459

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ■ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

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

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

Spill is not in lined containment.

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

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

Printed Name: Kendra DeHoyos Title: EHS Associate

Signature: Kendra DeHoyos Date: 5/14/2019

email: kendra.dehoyos@dvn.com Telephone: 575-748-3371

OCD Only

Received by: Amalia Bustamante Date: 6/6/2019

Incident ID	NAB1915738719
District RP	1RP-5530
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?	>55 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	1RP-5530
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: Dale Woodall Title: Env. Professional

Signature: Date:

email: dale.woodall@dvn.com Telephone: 575-748-1838

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	1RP-5530
Facility ID	
Application ID	

Remediation Plan

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

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

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

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Dale Woodall Title: Env. Professional

Signature: _____ Date: _____

email: dale.woodall@dvn.com Telephone: 575-748-1838

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	1RP-5530
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: Dale Woodall Title: Env. Professional

Signature: _____ Date: _____

email: dale.woodall@dvn.com Telephone: 575-748-1838

OCD Only

Received by: _____ Date: _____

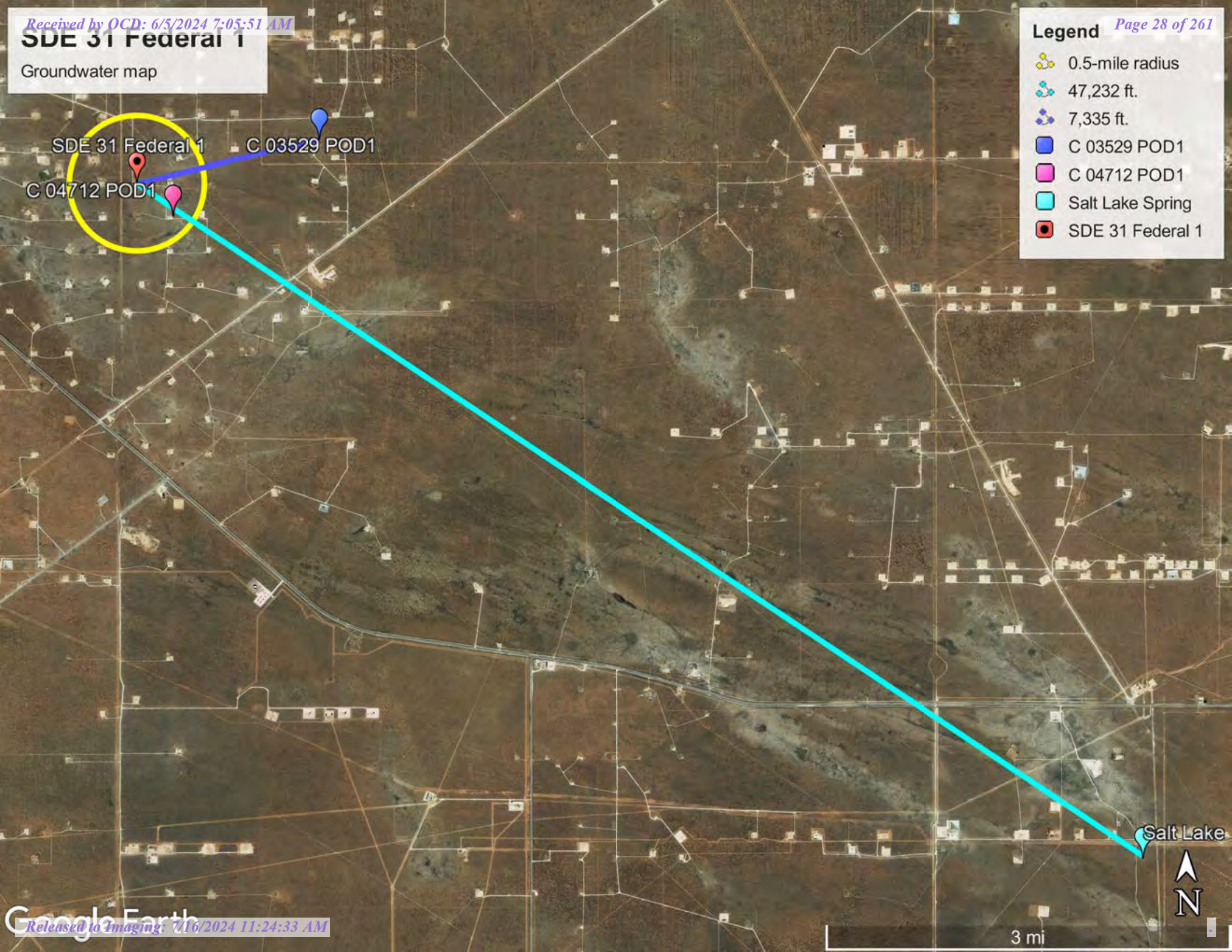
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by: _____ Date: _____

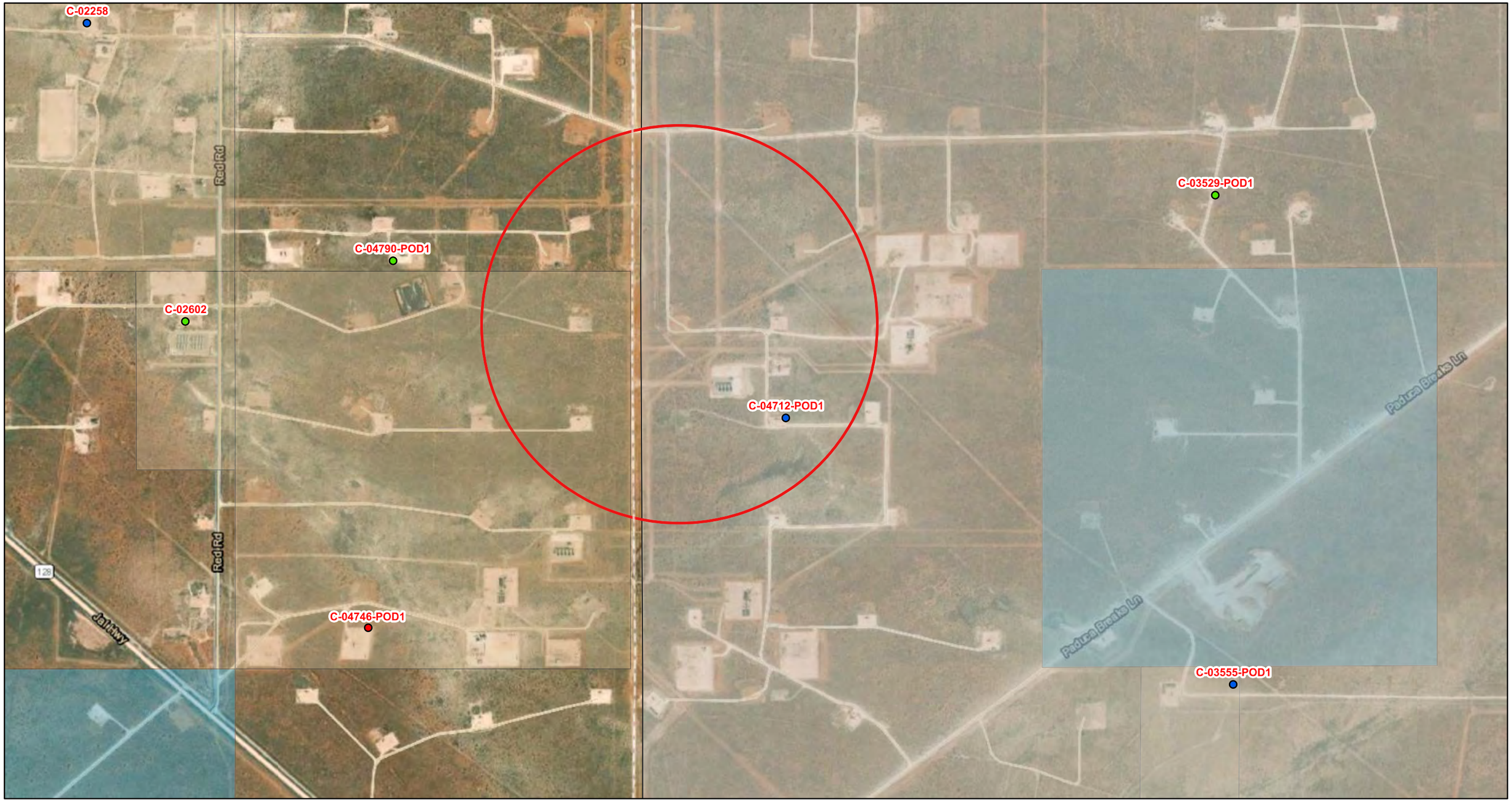
Printed Name: _____ Title: _____

APPENDIX B – Closure Criteria Research Documentation

Closure Criteria Determination			
Site Name: SDE 31 Federal #001			
Spill Coordinates: 32.26630, -103.72080		X: 620481.09	Y: 3570671.74
Site Specific Conditions		Value	Unit
1	Depth to Groundwater (nearest reference)	>55	feet
	Distance between release and nearest DTGW reference	1,903	feet
		0.36	miles
	Date of nearest DTGW reference measurement	March 9, 2023	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	25,782	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	28,740	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	23,226	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**	7,335	feet
	ii) Within 1000 feet of any fresh water well or spring	47,232	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	8,797	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	59,291	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	39,655	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	36,076	feet
11	Soil Type	Maljamar and Palomas Fine Sand	
12	Ecological Classification	Deep Sand/Loamy Sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'



OSE POD Location Map



2/1/2024, 5:33:01 PM

Override 1

GIS WATERS PODs

Active

Pending

Plugged

OSE District Boundary

Water Right Regulations

Closure Area

New Mexico State Trust Lands

Subsurface Estate

Both Estates

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user

This is an unofficial map from the OSE's online application.

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04712 POD1		CUB	LE	1	4	1	31	23S	32E	620917	3570289	580	55		
C 04746 POD1		CUB	ED	3	4	3	36	23S	31E	619226	3569417	1774	105		
C 03529 POD1		C	LE	2	4	3	29	23S	32E	622651	3571212	2236	550		
C 04672 POD 1		CUB	ED	2	1	4	01	24S	31E	619762	3568286	2491	110		
C 03555 POD1		C	LE	2	2	1	05	24S	32E	622748	3569233	2685	600	380	220
C 02258		C	ED		3	2	26	23S	31E	618055	3571853*	2698	662		
C 02348		C	ED	1	4	3	26	23S	31E	617648	3571068	2861	700	430	270
C 03851 POD1		CUB	LE	3	3	4	20	23S	32E	622880	3572660	3115	1392	713	679
C 04712 POD3		CUB	ED	4	1	2	24	23S	31E	619651	3573877	3311	55		
C 02405		CUB	ED		4	1	02	24S	31E	617690	3568631*	3457	275	160	115
C 02464		C	ED	2	3	1	02	24S	31E	617645	3568581	3523	320	205	115
C 02460		C	ED			3	02	24S	31E	617496	3568022*	3991	320		
C 02460 POD2		C	ED			3	02	24S	31E	617496	3568022*	3991	320		
C 04687 POD1		CUB	ED	4	2	3	12	24S	31E	619481	3566450	4338	110		
C 03530 POD1		C	LE	3	4	3	07	24S	32E	620886	3566156	4533	550		
C 04712 POD2		CUB	LE	4	4	4	17	23S	32E	623332	3574331	4639	55		
C 04712 POD4		CUB	ED	1	4	3	14	23S	31E	617535	3574316	4686	55		
C 04704 POD1		CUB	ED	3	2	2	13	23S	31E	619854	3575363	4733			
C 04780 POD1		CUB	LE	1	3	1	34	23S	32E	625364	3570521	4884	80		

Average Depth to Water: **377 feet**
Minimum Depth: **160 feet**
Maximum Depth: **713 feet**

Record Count: 19

UTMNAD83 Radius Search (in meters):

Easting (X): 620481 **Northing (Y):** 3570671.74 **Radius:** 5000

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

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04712 POD1		CUB	LE	1	4	1	31	23S	32E	620917	3570289	580	55		
C 04746 POD1		CUB	ED	3	4	3	36	23S	31E	619226	3569417	1774	105		
C 03529 POD1		C	LE	2	4	3	29	23S	32E	622651	3571212	2236	550		
C 04672 POD 1		CUB	ED	2	1	4	01	24S	31E	619762	3568286	2491	110		
C 03555 POD1		C	LE	2	2	1	05	24S	32E	622748	3569233	2685	600	380	220
C 02258		C	ED		3	2	26	23S	31E	618055	3571853*	2698	662		
C 02348		C	ED	1	4	3	26	23S	31E	617648	3571068	2861	700	430	270
C 03851 POD1		CUB	LE	3	3	4	20	23S	32E	622880	3572660	3115	1392	713	679
C 04712 POD3		CUB	ED	4	1	2	24	23S	31E	619651	3573877	3311	55		
C 02405		CUB	ED		4	1	02	24S	31E	617690	3568631*	3457	275	160	115
C 02464		C	ED	2	3	1	02	24S	31E	617645	3568581	3523	320	205	115
C 02460		C	ED			3	02	24S	31E	617496	3568022*	3991	320		
C 02460 POD2		C	ED			3	02	24S	31E	617496	3568022*	3991	320		
C 04687 POD1		CUB	ED	4	2	3	12	24S	31E	619481	3566450	4338	110		
C 03530 POD1		C	LE	3	4	3	07	24S	32E	620886	3566156	4533	550		
C 04712 POD2		CUB	LE	4	4	4	17	23S	32E	623332	3574331	4639	55		
C 04712 POD4		CUB	ED	1	4	3	14	23S	31E	617535	3574316	4686	55		
C 04704 POD1		CUB	ED	3	2	2	13	23S	31E	619854	3575363	4733			
C 04780 POD1		CUB	LE	1	3	1	34	23S	32E	625364	3570521	4884	80		

Average Depth to Water: **377 feet**
Minimum Depth: **160 feet**
Maximum Depth: **713 feet**

Record Count: 19

UTMNAD83 Radius Search (in meters):

Easting (X): 620481 **Northing (Y):** 3570671.74 **Radius:** 5000

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

New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04712 POD1	1	4	1	31	23S	32E	620917	3570289

Driller License: 1833 **Driller Company:** VISION RESOURCES, INC

Driller Name: JASON MALEY

Drill Start Date:	03/09/2023	**Drill Finish Date:**	03/09/2023	**Plug Date:**	03/14/2023
Log File Date:	04/04/2023	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	6.00	**Depth Well:**	55 feet	**Depth Water:**	

Casing Perforations:	Top	Bottom
	45	55

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: C 04712 **Subbasin:** CUB **Cross Reference:** -

Primary Purpose: MON MONITORING WELL

Primary Status: PMT PERMIT

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

Total Diversion: 0 **Cause/Case:** -

Owner: VERTEX RESOURCES

User: HARVARD PETROLEUM COMPANY LLC

Contact: JUSTIN WARREN

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	743189	EXPL	2023-02-21	PMT	APR	C 04712 POD1-6	T	0	0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 04712 POD1	NA		1	4	1	31	23S	32E	620917	3570289	SDE
C 04712 POD2	NA		4	4	4	17	23S	32E	623332	3574331	TOMCAT17
C 04712 POD3	NA		4	1	2	24	23S	31E	619651	3573877	TODD24
C 04712 POD4	NA		1	4	3	14	23S	31E	617535	3574316	TODD14
C 04712 POD5	NA		4	4	3	09	23S	31E	614393	3575754	NPG9
C 04712 POD6	NA		3	3	4	08	23S	31E	613147	3575740	NPG8

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.): ~~C-04712~~ POD 1	WELL TAG ID NO.	OSE FILE NO(S): C-4712
WELL OWNER NAME(S): Harvard Petroleum Company		PHONE (OPTIONAL)
WELL OWNER MAILING ADDRESS: PO Box 936		CITY: Roswell STATE: NM ZIP: 88202

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	15	46.1	N
LONGITUDE	-103	42	58.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1833	Jason Maley	Vision Resources

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
Mar 9, 2023	3/9/23	55	55	Dry

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): Dry

DATE STATIC MEASURED: Dry

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	45	6	2" pvc Sch 40	Thread	2"	Sch 40	—
45	55	6	2" pvc Sch 40	Tread	2"	Sch 40	.02

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			None Pulled And Plugged		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4712-POD1	POD NO. 1	TRN NO. 743189	
LOCATION Mon 23.32.31.141		WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	20	20	White Caliche	Y (N)	
20	45	25	Brown fine Sand	Y (N)	
45	55	10	Red sandy Caliche	Y (N)	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): Dry

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

OSE DIT APR 4 2023 PM 1:23

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jason Maley — 3/24/23

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4712-POD1	POD NO. 1	TRN NO. 743189
LOCATION Lea 23.32.31.141	WELL TAG ID NO. —	PAGE 2 OF 2

Mike A. Hamman, P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 743189
File Nbr: C 04712
Well File Nbr: C 04712 POD1

Apr. 04, 2023

VERTEX RESOURCES
P.O. BOX 936
ROSWELL, NM 88202

Greetings:

The above numbered permit was issued in your name on 02/21/2023.

The Well Record was received in this office on 04/04/2023, stating that it had been completed on 03/09/2023, and was a dry well. The well is to be plugged according to 19.27.4.30 NMAC.

Please note that another well can be drilled under this permit if the well is completed and the well log filed on or before 02/21/2024.

If you have any questions, please feel free to contact us.

Sincerely,

Maret Thompson
(575)622-6521

drywell

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.) ~~C-4746~~ POD 1	WELL TAG ID NO.	OSE FILE NO(S). C-4746
WELL OWNER NAME(S) Devon Energy Resources		PHONE (OPTIONAL)
WELL OWNER MAILING ADDRESS 205 E Bender Road #150		CITY Hobbs / STATE NM / ZIP 88240

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	15'	18.5"	N
LONGITUDE	103	44'	03.4"	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1833	Jason Maley	Vision Resources

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
6-1-23	6-1-23	105'	105'	Dry

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☑ DRY HOLE ☐ SHALLOW (UNCONFINED) | STATIC WATER LEVEL IN COMPLETED WELL (FT): Dry | DATE STATIC MEASURED:

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY: | CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	100	6	2" PVC SCH 40	Thread	2"	SCH 40	-
100	105	6	2" PVC SCH 40	Thread	2"	SCH 40	.02

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			None pulled and plugged		

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4746	POD NO. 1	TRN NO. 747203	
LOCATION 23S. 31E. 36 3 4 3		WELL TAG ID NO. NA	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10	10	Red sand/White Caliche	Y ✓N	
10	20	10	White Caliche	Y ✓N	
20	80	60	Light Tan fine sand	Y ✓N	
80	105	25	Brown fine sand	Y ✓N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:
☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

OSE DIT JUN 13 2023 PM2:08

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jason Maley

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jason Maley — 6-7-23

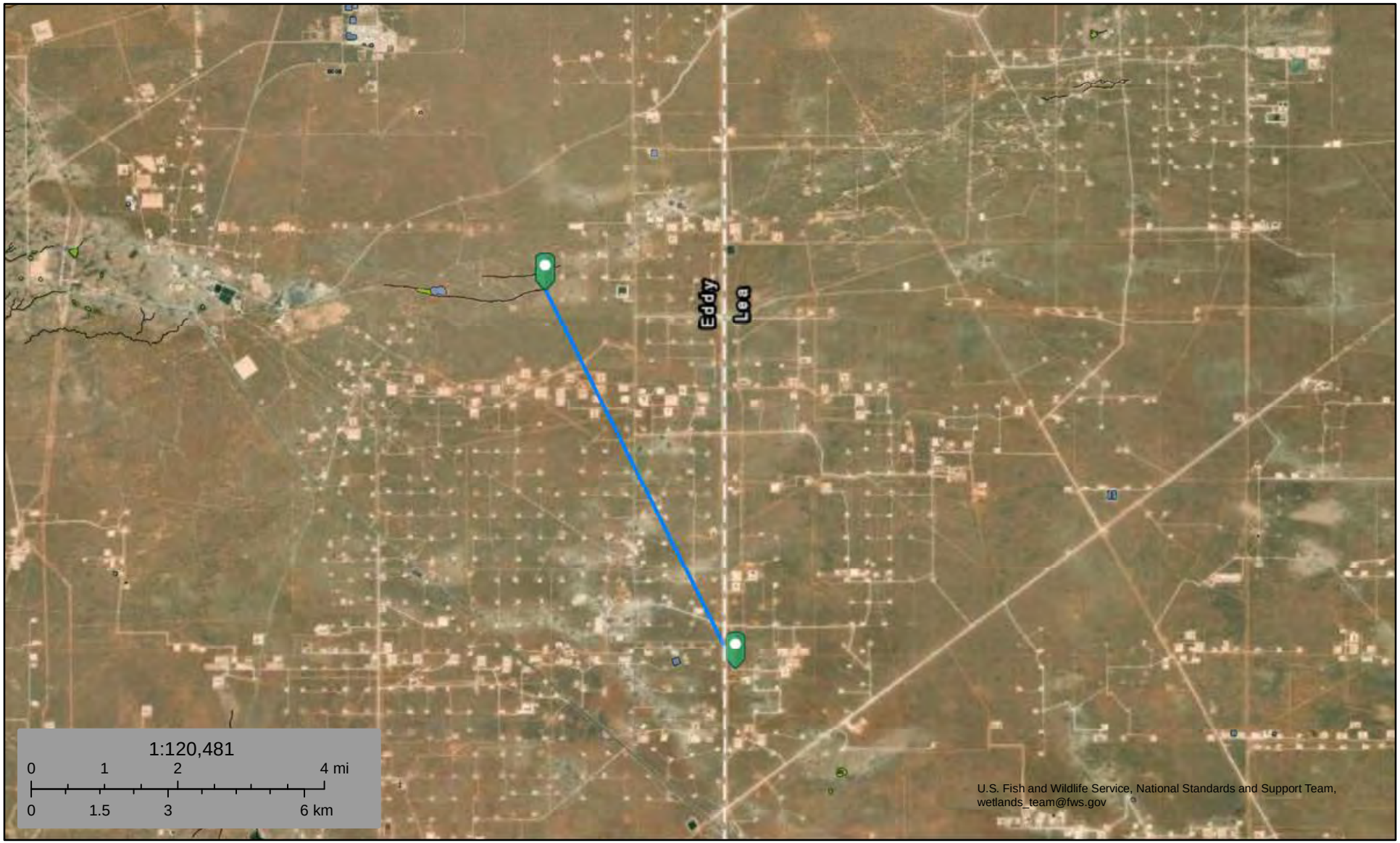
SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4746	POD NO 1	TRN NO. 747203	
LOCATION 235.316.30 343		WELL TAG ID NO NA	PAGE 2 OF 2

U.S. Fish and Wildlife Service
National Wetlands Inventory

SDE 31 Fed 1 Watercourse 25,782 ft.



December 11, 2023

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

SDE 31 Fed 1 Lake 28,740ft.

December 11, 2023

Wetlands

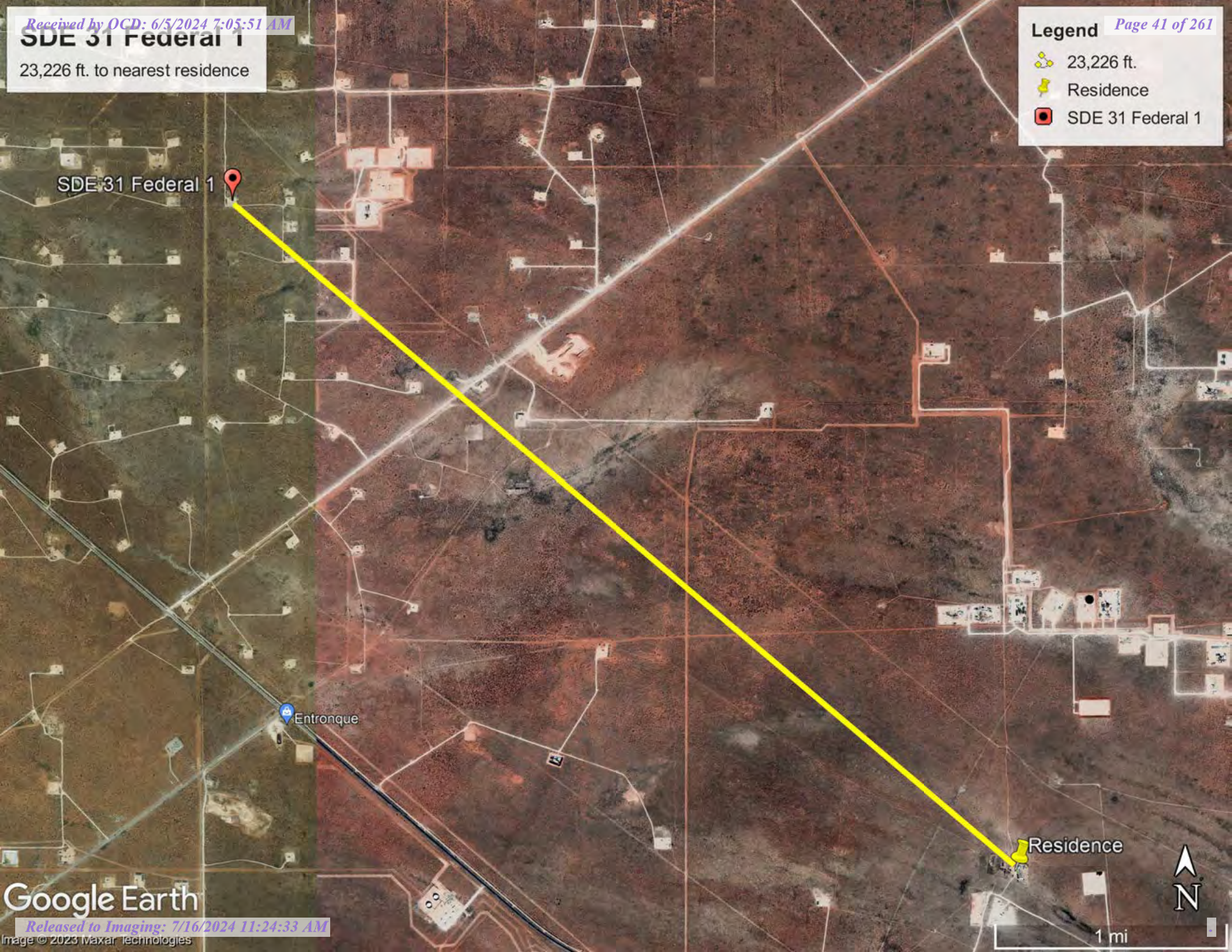
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

SDE 31 Federal 1

23,226 ft. to nearest residence



File No. C-3529

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS IN ACCORDANCE WITH SECTIONS 72-12-1.1, 72-12-1.2, OR 72-12-1.3 NEW MEXICO STATUTES

For fees, see State Engineer website: http://www.ose.state.nm.us/

2-30762 # 5

1. APPLICANT(S)

Name: **Mark and Annette McCloy**	Name: **Bureau of Land Management Carlsbad Resource Area**
Contact or Agent: check here if Agent ☒ **A.J. Olsen, Hennighausen & Olsen, LLP**	Contact or Agent: check here if Agent ☐
Mailing Address: **P.O. Box 1415**	Mailing Address: **620 E. Greene**
City: **Roswell**	City: **Carlsbad**
State: **NM** Zip Code: **88202**	State: **NM** Zip Code: **88220-6292**
Phone: ☐ Home ☐ Cell Phone (Work): **575.624.2463**	Phone: ☐ Home ☐ Cell Phone (Work): **575.234.5945**
E-mail (optional):	E-mail (optional):

2. WELL LOCATION Required: Coordinate location must be New Mexico State Plane (NAD 83), UTM (NAD 83), **or** Lat/Long (WGS84)

NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐	X (in feet): Y (in feet):				
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐	Easting (in meters): Northing (in meters):				
Lat/Long (WGS84) - To 1/10th of second	Latitude: 32	deg	16	min	15.39	sec
	Longitude: 103	deg	41	min	51.70	sec

Other Location Information (complete the below, if applicable):

PLSS Quarters or Halves: **NE1/4SE1/4SW1/4** Section: **29** Township: **23S** Range: **32E**

County: **Lea County**

Land Grant Name (if applicable):

Lot No: Block No: Unit/Tract: Subdivision:

Hydrographic Survey: Map: Tract:

Other description relating point of diversion to common landmarks, streets, or other:

Point of Diversion is on Land Owned by (Required): Bureau Of Land Management

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2012 JAN -4 P 4:23

FOR OSE INTERNAL USE Application for Permit, Form wr-01, Rev8/25/11

File Number: C-3529		Trn Number: 492589
Sub-basin: C	POD No. C-03529-POD1	Log Due Date: 01/09/2013

3. PURPOSE OF USE

- ☐ Domestic use for one household
- ☒ Livestock watering
- ☐ Domestic use for more than one household. Number of households _____
- ☐ Drinking and sanitary uses that are incidental to the operations of a governmental, commercial, or non-profit facility
- ☐ Prospecting, mining or drilling operations to discover or develop natural resources
- ☐ Construction of public works, highways and roads
- ☐ Domestic use for one household and livestock watering
- ☐ Domestic use for multiple households and livestock watering
- ☐ Domestic well to accompany a house or other dwelling unit constructed for sale

4. WELL INFORMATION

File Information: (If existing well, provide OSE no. & indicate below if well is to be replacement, repaired or deepened, or supplemental. If new well, leave blank, as OSE must assign no.)

OSE Well No.(If Existing)	New Well No. (provided by OSE)
Driller Name: New Mexico Licensed Driller	**Driller License Number:**
Approximate Depth of Well (feet): **550.00**	Outside Diameter of Well Casing (inches): **6.00**

☐ Replacement well (List all existing wells if more than one):	☐ Repair or Deepen: ☐ Clean out well to original depth ☐ Deepen well from _____ to _____ ft. ☐ Other (Explain):	☐ Supplemental well (List OSE No. for all wells this will supplement):

5. ADDITIONAL STATEMENTS OR EXPLANATIONS

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Mark and Annette McCloy** **Jim Stovall, Field Manager, BLM**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Annette M'Cloy
Mark M'Cloy
Applicant Signature

J Stovall
Applicant Signature

ACTION OF THE STATE ENGINEER (FOR OSE USE ONLY)

This application is approved subject to the attached general and specific conditions of approval.

Witness my hand and seal this 10th day of January 20 12, for the State Engineer,

By: Bill Duemling
Signature

Bill Duemling, Carlsbad Basin Supervisor
Print

JAN - 11 2012
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE

Application for Permit, Form wr-01, Rev8/25/11

File Number: C-3529		Trn Number: 492589
Sub-basin: C	POD No. C-03529-POD1	Log Due Date: 01/09/2013

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru O)

06-A The maximum amount of water that may be appropriated under this permit is 3.000 acre-feet in any year.

06-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 72-12-12).

06-C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

06-D The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

06-E To request a change to the use of water authorized under this permit, the permittee shall file an application with the State Engineer.

06-F An application for a new 72-12-1.1 domestic well permit where the proposed point of diversion is to be located on the same legal lot of record as an operational 72-12-1.1 domestic well shall be treated as an application for a supplemental well.

06-G If artesian water is encountered, all rules and regulations pertaining to the drilling and casing of artesian wells shall be complied with.

06-H The drilling of the well and amount and uses of water permitted are subject to such limitations as may be imposed by a court or by lawful municipal or county ordinance which are more restrictive than the conditions of this permit and applicable State Engineer regulations.

06-I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: C 03529 File Number: C 03529
Log Due Date: 01/09/2013 Trn Number: 492589
Form: wr-01 page: 1

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

06-J The well shall be set back a minimum of 50 ft. from an existing well of other ownership unless a variance has been granted by the State Engineer. The State Engineer may grant a variance for a replacement well or to allow for maximum spacing of the well from a source of groundwater contamination. The well shall be set back from potential sources of contamination in accordance with rules and regulations of the NM Environment Department.

06-K Pursuant to section 72-8-1 NMSA, the permittee shall allow the State Engineer and his representatives entry upon private property for the performance of their respective duties, including access to the well for meter reading and water level measurement.

06-L The permit is subject to cancellation for non-compliance with the conditions of approval or if otherwise not exercised in accordance with the terms of the permit.

06-M The right to divert water under this permit is subject to curtailment by priority administration as implemented by the State Engineer or a court.

06-N In the event of any change of ownership to this permit the new owner shall file a change of ownership form with the State Engineer in accordance with Section 72-1-2.1 NMSA.

06-O This well permit shall automatically expire unless the well is completed and the well record is filed with the State Engineer within one year of the date of issuance of the permit. It is the responsibility of the permit holder to ensure that the well record has been properly filed with the State Engineer.

SPECIFIC CONDITIONS OF APPROVAL

06-1A Depth of the well shall not exceed the thickness of the valley fill.

06-10 Total diversion from all wells under this permit number shall not exceed 3.000 acre-feet per annum.

Trn Desc: C 03529 File Number: C 03529
Log Due Date: 01/09/2013 Trn Number: 492589
Form: wr-01 page: 2

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

SPECIFIC CONDITIONS OF APPROVAL (Continued)

06-14 This permit authorized the diversion of water for watering livestock. The total diversion of water under this permit shall not exceed 3.000 acre-feet per year.

06-18 Any diversion of water made in excess of the authorized maximum diversion amount shall be repaid with twice the amount of the over-diversion during the following calendar year. Repayment shall be made by either: (a) reducing the diversion from the well that is the source of the over-diversion; or (b) acquiring or leasing a valid, existing consumptive use water right in an amount equal to the repayment amount and submitting to the State Engineer for his approval a plan for the proposed repayment.

LOG This permit will automatically expire unless the well C 03529 POD1 is completed and the well record filed on or before 01/09/2013.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 10 day of Jan A.D., 2012

Scott A. Verhines, P.E., State Engineer

By: Bill Duemling, Basin Supv.

Trn Desc: C 03529 File Number: C 03529
Log Due Date: 01/09/2013 Trn Number: 492589
Form: wr-01 page: 3

Locator Tool Report

General Information:

Application ID:30 Date: 01-10-2012 Time: 10:08:36

WR File Number: C-03529-POD1
Purpose: POINT OF DIVERSION

Applicant First Name: BLM--MCCLOY
Applicant Last Name: NEW STOCK WELL (PRELIMINARY LOCATION)

GW Basin: CARLSBAD
County: LEA

Critical Management Area Name(s): NONE
Special Condition Area Name(s): NONE
Land Grant Name: NON GRANT

PLSS Description (New Mexico Principal Meridian):

SW 1/4 of NE 1/4 of SE 1/4 of SW 1/4 of Section 29, Township 23S, Range 32E.

Coordinate System Details:

Geographic Coordinates:

Latitude:	32 Degrees	16 Minutes	15.4 Seconds	N
Longitude:	103 Degrees	41 Minutes	51.7 Seconds	W

Universal Transverse Mercator Zone: 13N

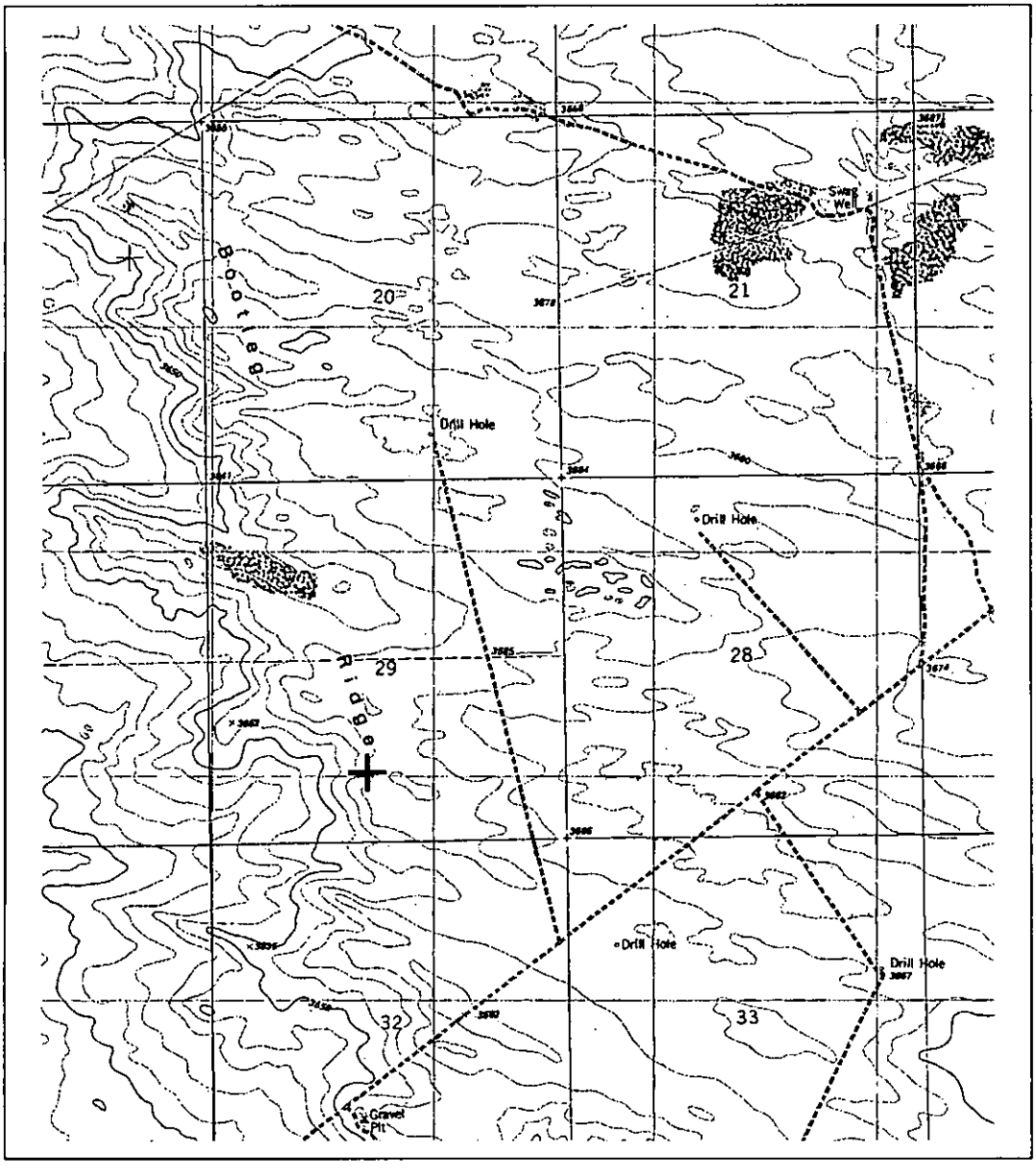
NAD 1983(92) (Meters)	N: 3,571,212	E: 622,651
NAD 1983(92) (Survey Feet)	N: 11,716,553	E: 2,042,815
NAD 1927 (Meters)	N: 3,571,011	E: 622,700
NAD 1927 (Survey Feet)	N: 11,715,891	E: 2,042,973

State Plane Coordinate System Zone: New Mexico East

NAD 1983(92) (Meters)	N: 141,087	E: 224,881
NAD 1983(92) (Survey Feet)	N: 462,883	E: 737,798
NAD 1927 (Meters)	N: 141,069	E: 212,329
NAD 1927 (Survey Feet)	N: 462,824	E: 696,615

NEW MEXICO OFFICE OF STATE ENGINEER

Locator Tool Report



WR File Number: C-03529-POD1 Scale: 1:32,765

Northing/Easting: UTM83(92) (Meter): N: 3,571,212 E: 622,651

Northing/Easting: SPCS83(92) (Feet): N: 462,883 E: 737,798

GW Basin: Carlsbad

Print Date: 01/10/2012

Scott A. Verhines, P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 492589
File Nbr: C 03529

Jan. 10, 2012

STEVE DALY
U.S. DEPT. OF INTERIOR--BLM
620 EAST GREENE
CARLSBAD, NM 88220-6292

Greetings:

Enclosed is your copy of the above numbered permit that has been approved in accordance with NM Statute Section 72-12-1 subject to the conditions set forth on the approval page.

Please review the conditions for any required submittals. If submittals are not made by the date(s) indicated in the conditions, your rights under this permit shall expire by the date indicated on your permit.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Bill Duemling
(575)622-6521

Enclosure

wr_01app

U.S. Fish and Wildlife Service
National Wetlands Inventory

SDE 31 Fed 1 Wetland 8,797 ft.

December 11, 2023

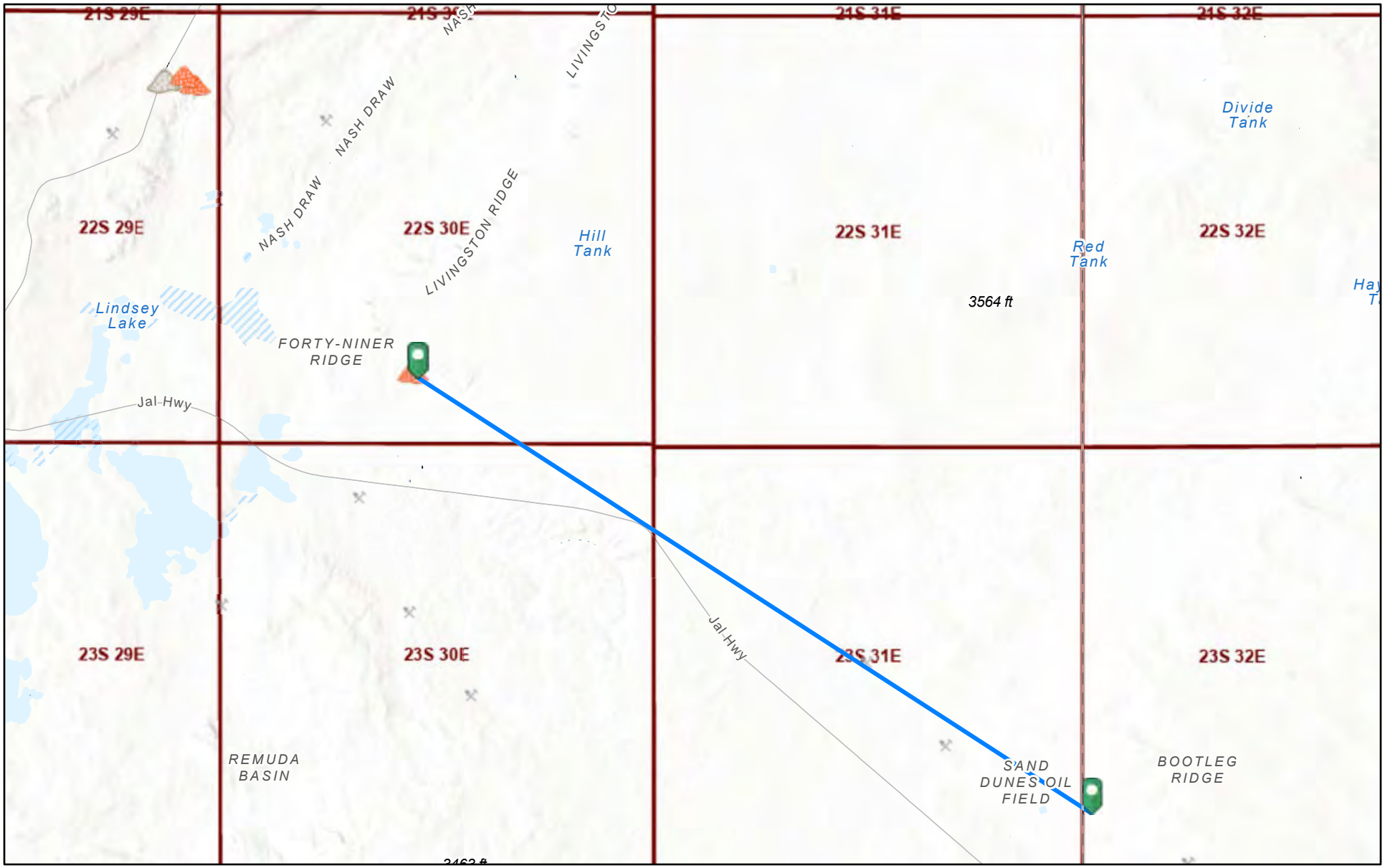
Wetlands

- 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

SDE 31 Fed 1 Subsurface Mine 59,291 ft.



12/11/2023, 9:13:57 AM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Registered Mines

Aggregate, Stone etc.

Aggregate, Stone etc.

Potash

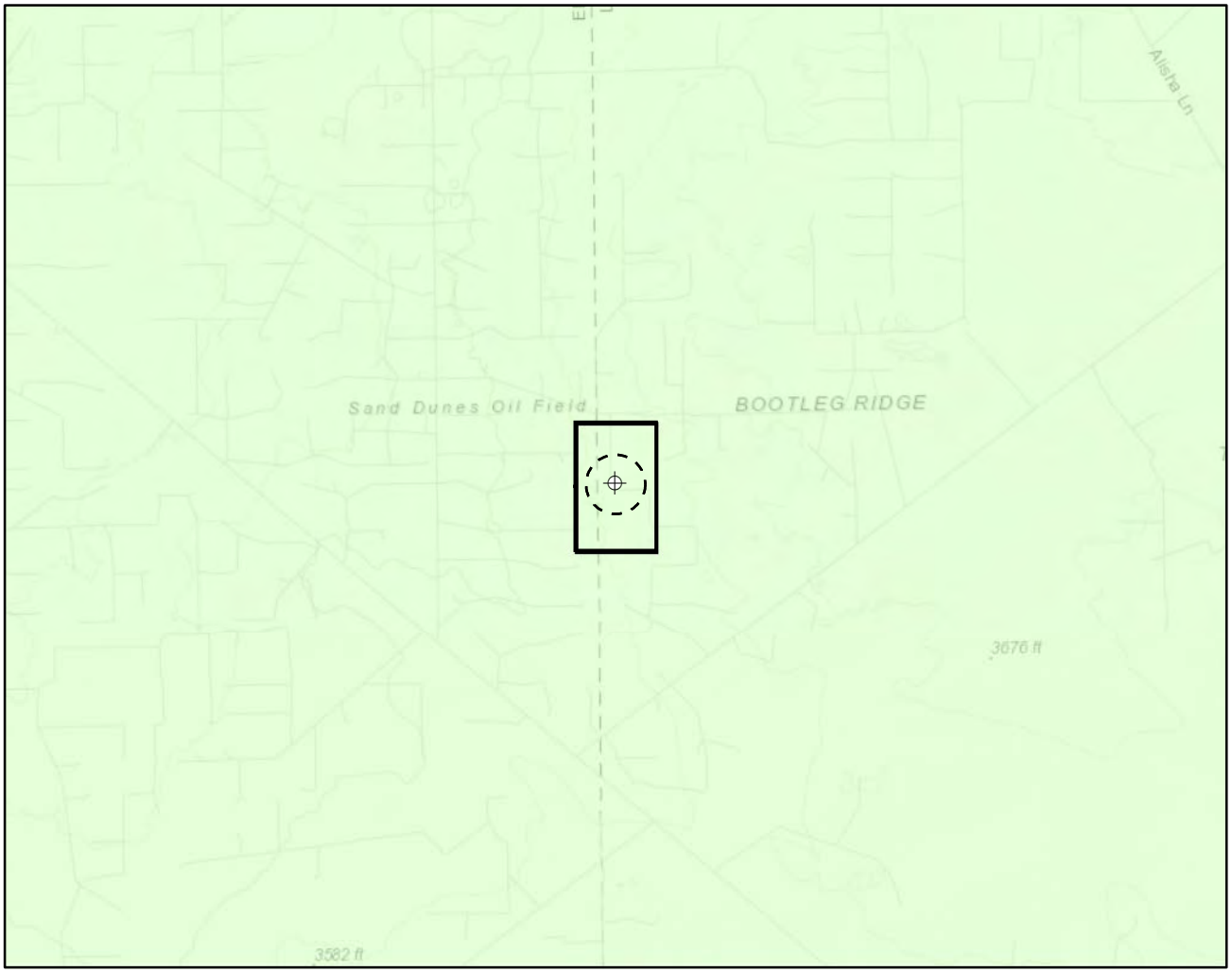
Salt

PLSS Townships

Esri, NASA, NGA, USGS, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc,

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

- 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: 32.266300, -103.720800

NAD 1983 UTM Zone 13N
Date: Dec 11/23

N

Karst Potential Map
SDE 31 Federal #001

FIGURE:
X

devon

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.

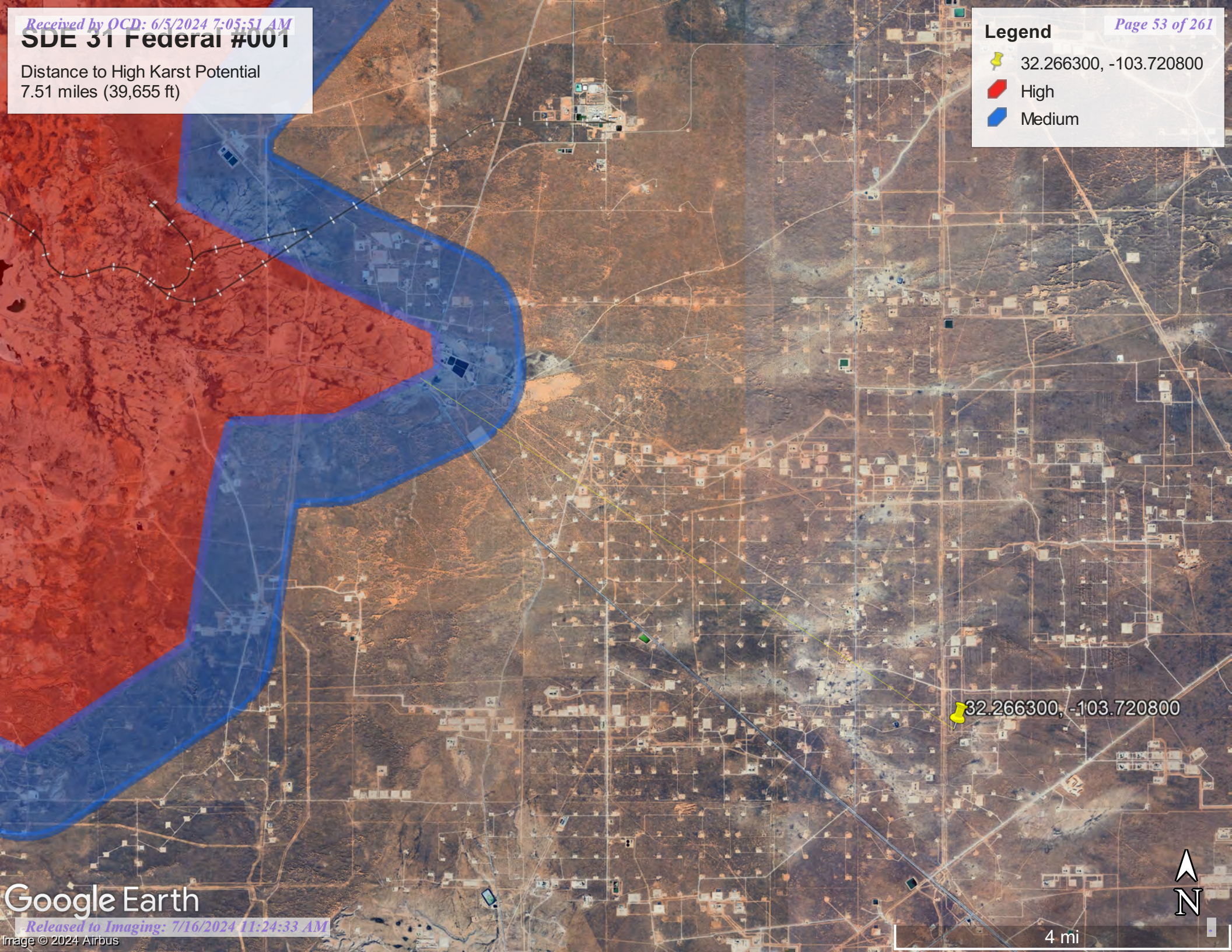
Note: Inset Map, ESRI 2022; Overview Map: ESRI World Topographic. Karst potential data sourced from Roswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

Document Path: C:\Users\scarttar\Vertex Resource Group Ltd\Vertex US Operations - General\Environmental Services\10 - Geomatics\SPC\Devon 23E-05201 SDE 31 Federal #001\Fig X Karst Potential 23E-05201 Req 17535.mxd

SDE 31 Federal #001

Distance to High Karst Potential
7.51 miles (39,655 ft)



National Flood Hazard Layer FIRMette

FEMA

103°43'34"W 32°16'14"N

Feet

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

1:6,000

103°42'56"W 32°15'43"N

Basemap Imagery Source: USGS National Map 2023

Legend

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

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

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

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

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

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

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

N

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

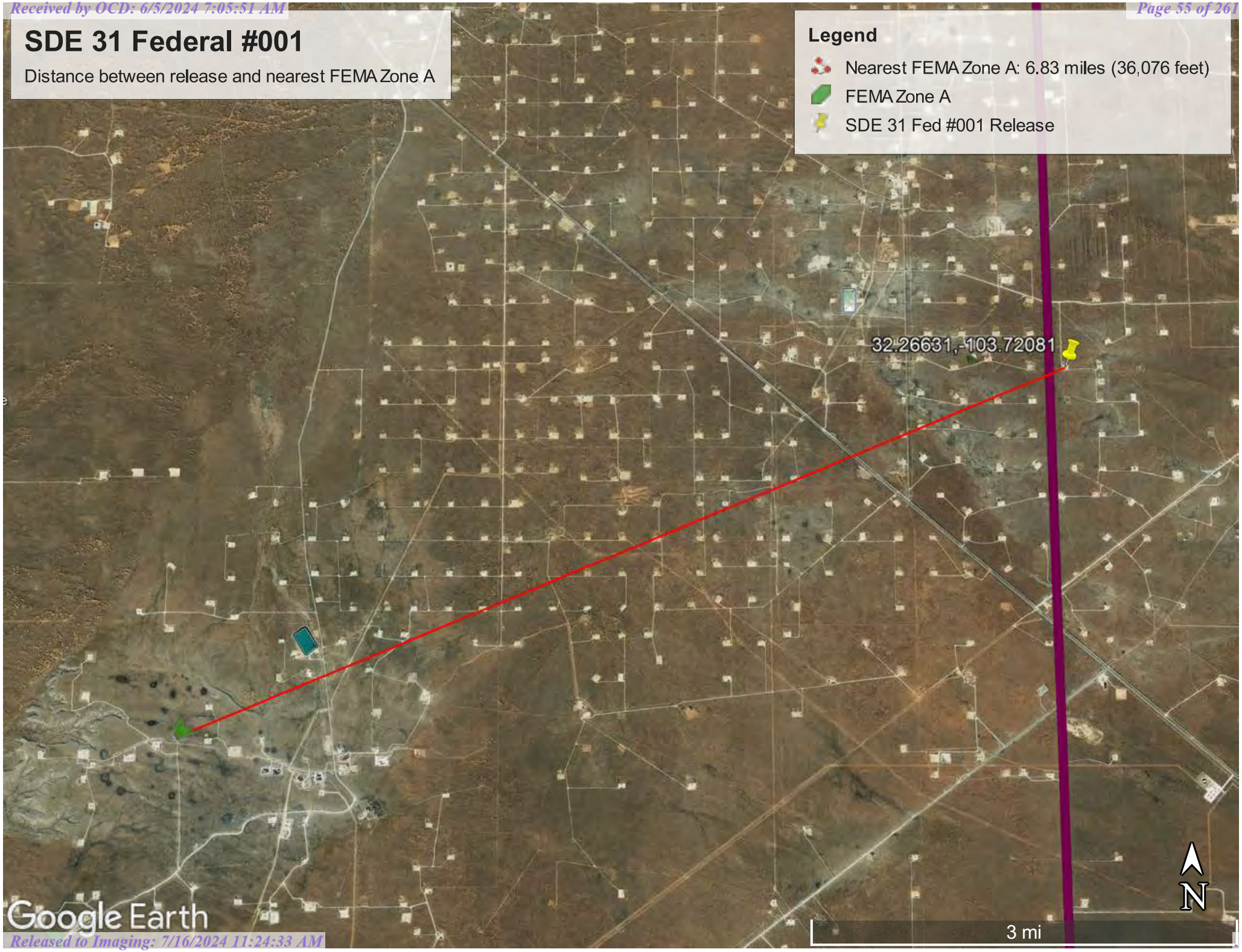
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/13/2024 at 2:21:23 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

SDE 31 Federal #001

Distance between release and nearest FEMA Zone A



United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lea County, New Mexico

December 11, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (SDE 31 Fed 1 Soil Report)

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: Lea County, New Mexico
Survey Area Data: Version 20, Sep 6, 2023

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

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 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 (SDE 31 Fed 1 Soil Report)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KD	Kermit-Palomas fine sands, 0 to 12 percent slopes	0.3	23.7%
MF	Maljamar and Palomas fine sands, 0 to 3 percent slopes	0.9	76.3%
Totals for Area of Interest		**1.1**	**100.0%**

Map Unit Descriptions (SDE 31 Fed 1 Soil Report)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lea County, New Mexico

KD—Kermit-Palomas fine sands, 0 to 12 percent slopes

Map Unit Setting

National map unit symbol: dmpv
Elevation: 3,000 to 4,400 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 70 percent
Palomas and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

Landform: Dunes
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex
Parent material: Calcareous sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: fine sand
C - 8 to 60 inches: fine sand

Properties and qualities

Slope: 3 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD005NM - Deep Sand
Hydric soil rating: No

Description of Palomas

Setting

Landform: Dunes

Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone

Typical profile

A - 0 to 16 inches: fine sand
Bt - 16 to 60 inches: sandy clay loam
Bk - 60 to 66 inches: sandy loam

Properties and qualities

Slope: 0 to 5 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: 50 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Pyote

Percent of map unit: 4 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Maljamar

Percent of map unit: 4 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Palomas

Percent of map unit: 1 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Dune land

Percent of map unit: 1 percent
Hydric soil rating: No

MF—Maljamar and Palomas fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: dmqb
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maljamar and similar soils: 46 percent
Palomas and similar soils: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maljamar

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand
Bt - 24 to 50 inches: sandy clay loam
Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Description of Palomas

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

A - 0 to 16 inches: fine sand
Bt - 16 to 60 inches: sandy clay loam
Bk - 60 to 66 inches: sandy 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: 45 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 5 percent
Ecological site: R070BC022NM - Sandhills
Hydric soil rating: No

Wink

Percent of map unit: 5 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

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USDA Natural Resources Conservation Service

Ecological site R070BD005NM
Deep Sand

Accessed: 12/11/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

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

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on terraces, Piedmonts, dunes fields, or upland plains. Parent material consists of eolian deposits and alluvium derived from sandstone. Slopes range from 0 to 15 percent, usually less than 5 percent. Low, stabilized hummocks or dunes frequently occur. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Dune (2) Parna dune (3) Terrace
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–15%
Aspect	Aspect is not a significant factor

Climatic features

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

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

The average frost-free season is 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Both temperature and moisture favor warm season perennial plant growth. During years of abundant winter and early spring moisture, cool season growth and annual forbs, make up an important component of this site. Strong winds blow from the west from January through June, which accelerates soil drying during a critical period for cool

season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

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

Soil features

Soils are deep or very deep. Surface textures are sand loam, fine sand or loamy fine sand, Underlying material textures are loamy fine sand, fine sand, sand or fine sandy loam. Because of the coarse textures and rapid drying of the surface, the soil, if unprotected by plant cover and organic residue, becomes windblown and low hummocks or dunes are formed around shrubs.

Characteristic soils are:
Anthony
Aguena
Kermit
Likes
Pintura
Bluepoint

Table 4. Representative soil features

Surface texture	(1) Sand (2) Fine sand (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Moderate to very rapid
Soil depth	60–72 in
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	3–5 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–7.8

Subsurface fragment volume <=3" (Depth not specified)	5–10%
Subsurface fragment volume >3" (Depth not specified)	0%

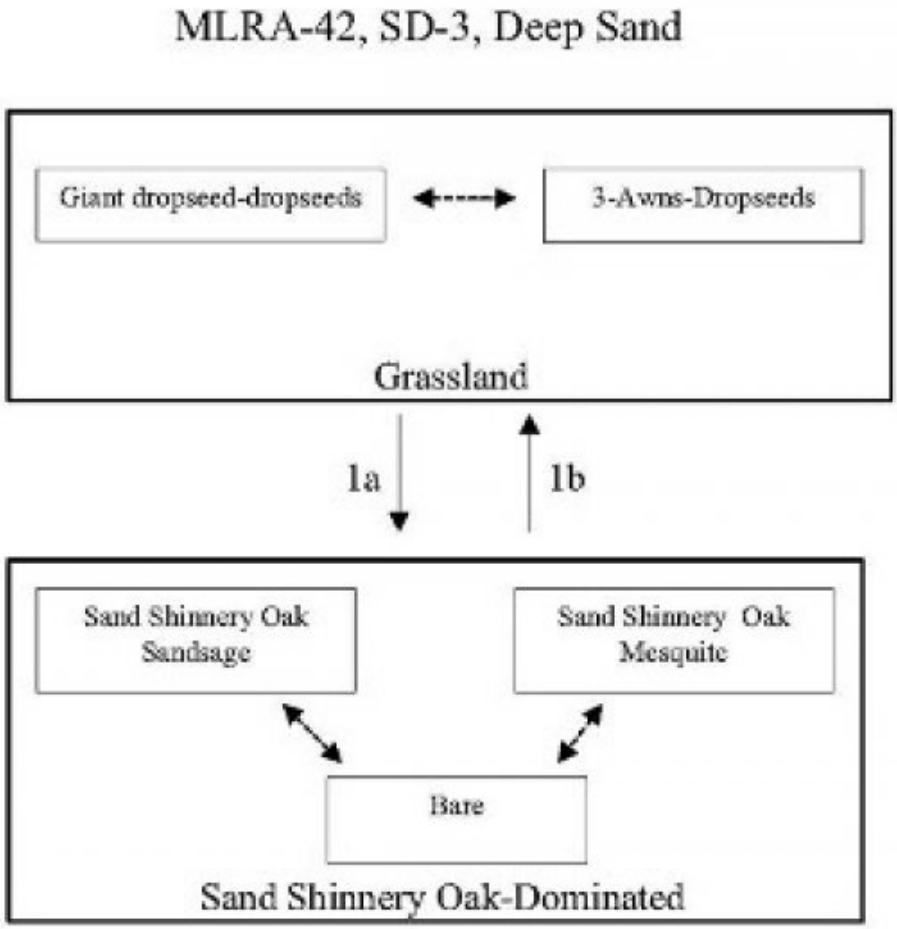
Ecological dynamics

Overview

The Deep Sand site occurs adjacent to and/or intergraded with the Sandhills and Sandy sites (SD-3). The Deep Sand site can be distinguished by slopes less than eight percent (approximately five percent) and textural changes at depths greater than 40 inches. The Deep Sand site has well drained soils with a surface texture of sand or loamy fine sand. The Sandhills site has slopes greater than eight percent and textural depths greater than 60 inches. Conversely, the Sandy site has slopes less than five percent and depths to textural change commonly around 20 inches. The historic plant community of the Deep Sand site is dominated primarily by giant dropseed (*Sporobolus giganteus*) and other dropseeds (*S. flexuosus*, *S. contractus*, *S. cryptandrus*), with scattered shinnery oak (*Quercus havardii*) and soapweed yucca (*Yucca glauca*). Other herbaceous species include threeawns (Aristida spp.), bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), and annual and perennial forbs distributed relative to precipitation occurrences. Bare ground and litter compose a significant proportion of ground cover while grasses are the remainder. Shinnery oak will increase with an associated decrease in dropseed and bluestem abundance possibly due to climatic change, fire suppression, interspecific competition, and excessive grazing. Continued grass cover loss may result in a transition to a shinnery oak dominated state with increases in sand sage (*Artemisia filifolia*) and honey mesquite (*Prosopis glandulosa*). However, brush management may restore the grassland component and reverse the shinnery oak state back toward the historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1.a Climate, fire suppression, competition, over grazing

1.b Brush control, Prescribed grazing

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

State Containing Historic Plant Community Grassland: The historic plant community is dominated by giant dropseed, other dropseeds, threeawns, and bluestems. Dominant woody plants include shinnery oak and soapweed yucca. Forb abundance and distribution varies and is dependent on annual rainfall. The Deep Sand site typically exists in sandy plains and dunes (Sosebee 1983). Grass dominance stabilizes the potentially erosive sandy soils. Historical fire suppression, however, may have contributed to increased woody plant abundance, which has reduced grass species. Further, drought conditions compounded with excessive grazing likely has driven most grass species out of competition with shrubs which has resulted in a shinnery oak dominated state with sand sage and mesquite (Young et al. 1948). Diagnosis: Grassland dominated by dropseeds, threeawns, and bluestems. Small shrubs, such as shinnery oak and soapweed yucca, and subshrubs are dispersed throughout the grassland. Other grasses that could appear on this site would include: flatsedge, almejita signalgrass, big bluestem, Indiangrass, fall witchgrass, hairy grama and red lovegrass Other shrubs include: fourwing saltbush, mesquite, ephedra and broom snakeweed. Other forbs include: wooly and scarlet gaura, wooly dalea, phlox heliotrope, scorpionweed, deerstongue, fleabane, nama, hoffmanseggia, lemon beebalm and stickleaf.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	396	858	1320
Shrub/Vine	108	234	360
Forb	96	208	320
Total	**600**	**1300**	**2000**

Table 6. Ground cover

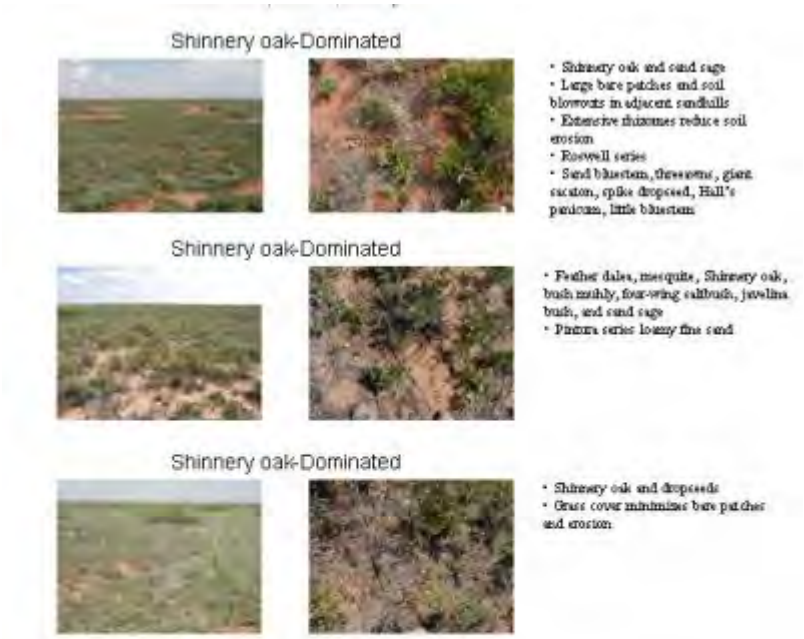
Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	15-20%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	35-40%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	35-40%

Figure 5. Plant community growth curve (percent production by month). NM2805, HCPC. SD-3 Deep Sand - Warm season plant community .

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

State 2
Shinnery Oak Dominated

Community 2.1
Shinnery Oak Dominated



Shinnery Oak Dominated: This state is dominated by shinnery oak with subdominants of sand sage or mesquite. Bare ground is a significant component in this state as well. shinnery oak is characterized by dense stands in sandy soils; however, as clay percentage increases, shinnery oak decreases. Shinnery oak abundance and distribution increase with disturbances, such as excessive grazing and fire, due to an aggressive rhizome system. As shinnery oak abundance increases, an associated increase of mesquite, sand sage, and soapweed yucca also occurs. Shinnery oak's extensive root system allows the oak to competitively exclude grasses and forbs. Sand sage, however, stabilizes light sandy soils from wind erosion and can co-exist with herbaceous species by protecting them in heavily grazed conditions (Davis and Bonham 1979). Shinnery oak has been found primarily in very deep, excessively drained, and rapidly permeable soils. Shinnery oak is associated with landforms which are gently undulating to rolling uplands, very gently sloping to moderately steep slopes, and upland plains, alluvial fans and valley sideslopes. Shinnery oak and sand sage can be controlled with herbicide if applied in the spring with a subsequent rest from grazing (Herbel et al. 1979, Pettit 1986). In addition, repetitive seasons of goat browsing can also reduce shinnery oak abundance. Patches should be maintained during brush control, however, to prevent erosion and to provide wildlife cover and forage. Further, as shinnery oak and other shrubs increase, bare patches and erosion will increase due to a lack of herbaceous ground cover. Diagnosis: Shinnery oak dominated with subdominant sand sage, honey mesquite, and soapweed yucca with increasing frequency and size of bare patches. Transition to Shinnery oak dominated state (1a): The historic plant community begins to shift toward the shinnery oak dominated state as drivers such as climate change, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by an increase of shrub species abundance and bare patch expansion. Key indicators of approach to transition: • Loss of grass and forb cover • Surface soil erosion • Bare patch expansion • Increased shrub species abundance and composition Transition to Historic Plant Community (1b): The shinnery oak dominated state may transition back toward the historic plant community as new drivers are introduced such as prescribed grazing, brush control, and discontinued drought conditions.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)

Grass/Grasslike					
1	**Warm Season**			450–585	
	spike dropseed	SPCO4	*Sporobolus contractus*	450–585	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	450–585	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	450–585	–
	giant dropseed	SPGI	*Sporobolus giganteus*	450–585	–
2	**Warm Season**			65–104	
	sand bluestem	ANHA	*Andropogon hallii*	65–104	–
	little bluestem	SCSC	*Schizachyrium scoparium*	65–104	–
3	**Warm Season**			39–91	
	threeawn	ARIST	*Aristida*	39–91	–
4	**Warm Season**			13–39	
	thin paspalum	PASE5	*Paspalum setaceum*	13–39	–
5	**Warm Season**			13–39	
	black grama	BOER4	*Bouteloua eriopoda*	13–39	–
6	**Warm Season**			13–39	
	mat sandbur	CELO3	*Cenchrus longispinus*	13–39	–
7	**Warm Season**			13–39	
	Havard's panicgrass	PAHA2	*Panicum havardii*	13–39	–
8	**Warm Season**			13–65	
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	13–65	–
9	**Other Annual Grasses**			13–65	
	Grass, annual	2GA	*Grass, annual*	13–65	–
Shrub/Vine					
10	**Shrub**			65–130	
	Havard oak	QUHA3	*Quercus havardii*	65–130	–
11	**Shrub**			13–39	
	sand sagebrush	ARFI2	*Artemisia filifolia*	13–39	–
12	**Shrub**			65–130	
	yucca	YUCCA	*Yucca*	65–130	–
13	**Shrub**			13–39	
	rabbitbrush	CHRYS9	*Chrysothamnus*	13–39	–
14	**Other Shrubs**			13–39	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	13–39	–
Forb					
15	**Forb**			39–91	
	croton	CROTO	*Croton*	39–91	–
	Indian blanket	GAPU	*Gaillardia pulchella*	39–91	–
16	**Forb**			39–91	
	aster	ASTER	*Aster*	39–91	–
	whitest evening primrose	OEAL	*Oenothera albicaulis*	39–91	–
	beardtongue	PENST	*Penstemon*	39–91	–
17	**Forb**			39–91	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	39–91	–

	[illegible]	[illegible]	[illegible]	[illegible]	
	buckwheat	ERIOG	*Eriogonum*	39–91	–
	sunflower	HELIA3	*Helianthus*	39–91	–
	spiny false fiddleleaf	HYSP	*Hydrolea spinosa*	39–91	–
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	39–91	–
18	**Other Forbs**			13–65	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	13–65	–

Animal community

This site provides habitat which supports a resident animal population characterized by pronghorn, antelope, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, meadowlark, roadrunner, white-necked raven, cactus wren, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake and ornate box turtle. In the area called Mescalero Sands, there are white-tailed and mule deer.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Anthony B
Bluepoint A
Kermit A
Aguena A
Likes A
Pintura A

Recreational uses

This site offers limited recreation potential for hiking, horseback riding, nature observation and photography; game bird, predator, antelope, and deer hunting.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Shinnery oak is toxic in the late bud or early leaf stage. Shinnery oak will increase, as will sand sagebrush following drought. Changes in the fire return interval have also favored an increase in shrub cover. The dropseeds and bluestem will decrease. This site responds very well to brush manangement and deferment. This site is well suited to a grazing system that rotates the season of use. Nesting habitat for lesser prairie chicken can be improved by providing residual cover that is at least 14 inches high.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM
100 - 76 2.0 – 3.8
75 – 51 3.0 – 6.0

50 – 26 5.0 – 10.0
25 – 0 10.1 +

Inventory data references

Other References:
Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest. Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Sosebee, Ronald E. 1983. Physiological, phenological, and environmental considerations in brush and weed control. In: McDaniel, Kirk C., ed. Proceedings--brush management symposium; 1983 February 16; Albuquerque, NM. Denver, CO: Society for Range Management: 27-43.

Young, Vernon A., Anderwald, Frank R.,McCully, Wayne G. 1948. Brush problems on Texas ranges. Miscellaneous Publication 21. College Station, TX: Texas Agricultural Experiment Station. 19 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

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

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

Indicators

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

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

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

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

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

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

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

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

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

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

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

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

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

decadence):

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

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

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

17. **Perennial plant reproductive capability:**

USDA Natural Resources Conservation Service

Ecological site R070BD003NM
Loamy Sand

Accessed: 12/11/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

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

Associated sites

R070BD004NM	**Sandy** Sandy
R070BD005NM	**Deep Sand** Deep Sand

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes.

The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period for cool season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

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

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

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

Characteristic soils are:
Maljamar
Berino
Parjarito
Palomas
Wink
Pyote

Table 4. Representative soil features

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid

Soil depth	40–72 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–7 in
Calcium carbonate equivalent (0-40in)	3–40%
Electrical conductivity (0-40in)	2–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

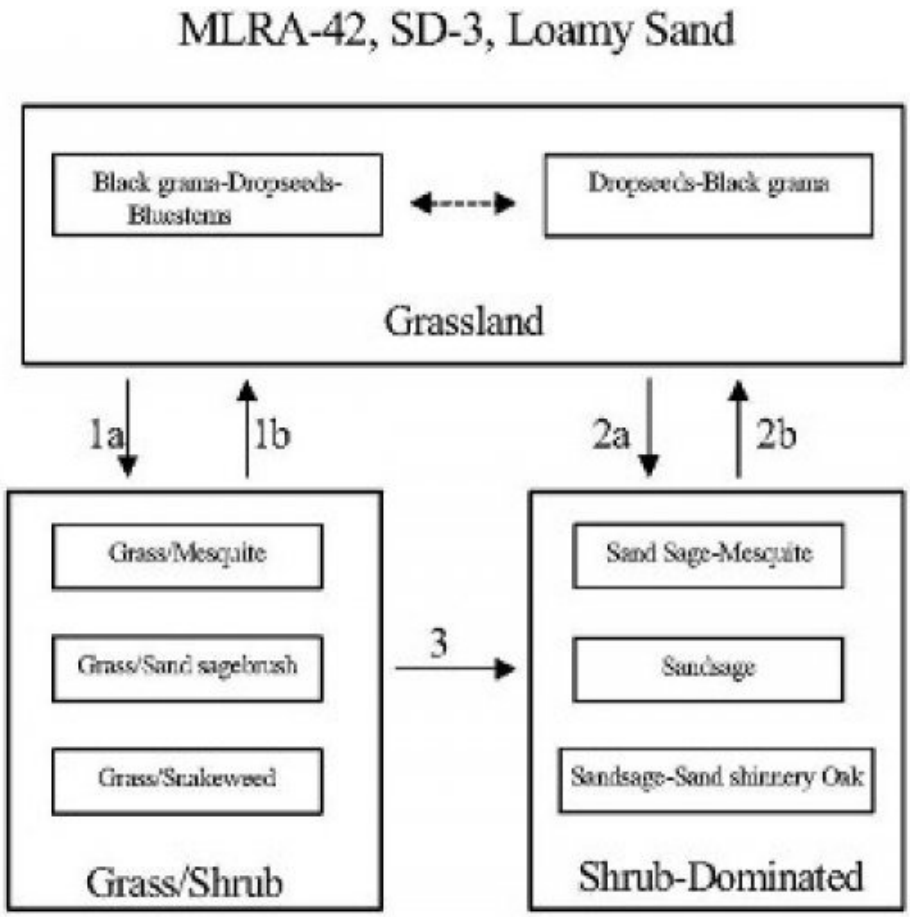
Overview

The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-dominated historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram):



1a. Drought, over grazing, fire suppression.
1b. Brush control, prescribed grazing

2.a Severe loss of grass cover, fire suppression, erosion.
2b. Brush control, seeding, prescribed grazing.

3. Continued loss of grass cover, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil

surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species. Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
Total	**650**	**1225**	**1800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 5. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

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

State 2
Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub State: The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971). Diagnosis: This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution. Transition to Grass/Shrub State (1a): The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984). Key indicators of approach to transition: • Loss of black grama cover • Surface soil erosion • Bare patch expansion • Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances Transition to Historic Plant Community (1b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state's primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an

aggressive rhizome system. Shinnery oak's extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986). Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state. Key indicators of approach to transition: • Severe loss of grass species cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite abundance Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state. Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite. Key indicators of approach to transition: • Continual loss of dropseeds/threeawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threeawn and mesquite/snakeweed abundance

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			61–123	
	little bluestem	SCSC	*Schizachyrium scoparium*	61–123	–
2	**Warm Season**			37–61	
	sand bluestem	ANHA	*Andropogon hallii*	37–61	–
3	**Warm Season**			37–61	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	37–61	–
	silver bluestem	BOSA	*Bothriochloa saccharoides*	37–61	–
4	**Warm Season**			123–184	
	black grama	BOER4	*Bouteloua eriopoda*	123–184	–
	bush muhly	MUPO2	*Muhlenbergia porteri*	123–184	–
5	**Warm Season**			123–184	
	thin paspalum	PASE5	*Paspalum setaceum*	123–184	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	123–184	–
	fringed signalgrass	URCI	*Urochloa ciliatissima*	123–184	–
6	**Warm Season**			123–184	
	spike dropseed	SPCO4	*Sporobolus contractus*	123–184	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	123–184	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	123–184	–
7	**Warm Season**			61–123	
	hooded windmill grass	CHCU2	*Chloris cucullata*	61–123	–
	Arizona cottontop	DICA8	*Digitaria californica*	61–123	–
9	**Other Perennial Grasses**			37–61	
	Grass, perennial	2GP	*Grass, perennial*	37–61	–
Shrub/Vine					
8	**Warm Season**			37–61	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	37–61	–
	giant dropseed	SPGI	*Sporobolus giganteus*	37–61	–
10	**Shrub**			61–123	

	sand sagebrush	ARFI2	*Artemisia filifolia*	61–123	–
	Havard oak	QUHA3	*Quercus havardii*	61–123	–
11	**Shrub**			34–61	
	fourwing saltbush	ATCA2	*Atriplex canescens*	37–61	–
	featherplume	DAFO	*Dalea formosa*	37–61	–
12	**Shrub**			37–61	
	jointfir	EPHED	*Ephedra*	37–61	–
	littleleaf ratany	KRER	*Krameria erecta*	37–61	–
13	**Other Shrubs**			37–61	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	37–61	–
Forb					
14	**Forb**			61–123	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	61–123	–
	Indian blanket	GAPU	*Gaillardia pulchella*	61–123	–
	globemallow	SPHAE	*Sphaeralcea*	61–123	–
15	**Forb**			12–37	
	woolly groundsel	PACA15	*Packera cana*	12–37	–
16	**Forb**			61–123	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	61–123	–
	woolly plantain	PLPA2	*Plantago patagonica*	61–123	–
17	**Other Forbs**			37–61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	37–61	–

Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord’s kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.
Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson’s hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Berino B
Kinco A
Maljamar B
Pajarito B
Palomas B
Wink B
Pyote A

Recreational uses

This site offers recreation potential for hiking, borseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, blsck grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shinery oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.3 – 3.5
75 – 51 3.0 – 4.5
50 – 26 4.6 – 9.0
25 – 0 9.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

Ansley, R. J.; Jacoby, P. W. 1998. Manipulation of fire intensity to achieve mesquite management goals in north Texas. In: Pruden, Teresa L.; Brennan, Leonard A., eds. Fire in ecosystem management: shifting the paradigm from suppression to prescription: Proceedings, Tall Timbers fire ecology conference; 1996 May 7-10; Boise, ID. No. 20. Tallahassee, FL: Tall Timbers Research Station: 195-204.

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Britton, Carlton M.; Wright, Henry A. 1971. Correlation of weather and fuel variables to mesquite damage by fire. Journal of Range Management 24:136-141.

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Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

McDaniel, Kirk C.; Pieper, Rex D.; Loomis, Lyn E.; Osman, Abdelgader A. 1984. Taxonomy and ecology of perennial snakeweeds in New Mexico. Bulletin 711. Las Cruces, NM: New Mexico State University, Agricultural Experiment Station. 34 p.

McPherson, Guy R. 1995. The role of fire in the desert grasslands. In: McClaran, Mitchel P.; Van Devender, Thomas R., eds. The desert grassland. Tucson, AZ: The University of Arizona Press: 130-151.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

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

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

Indicators

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

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

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

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

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

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

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

---

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

---

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

---

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

---

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

---

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

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

---

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

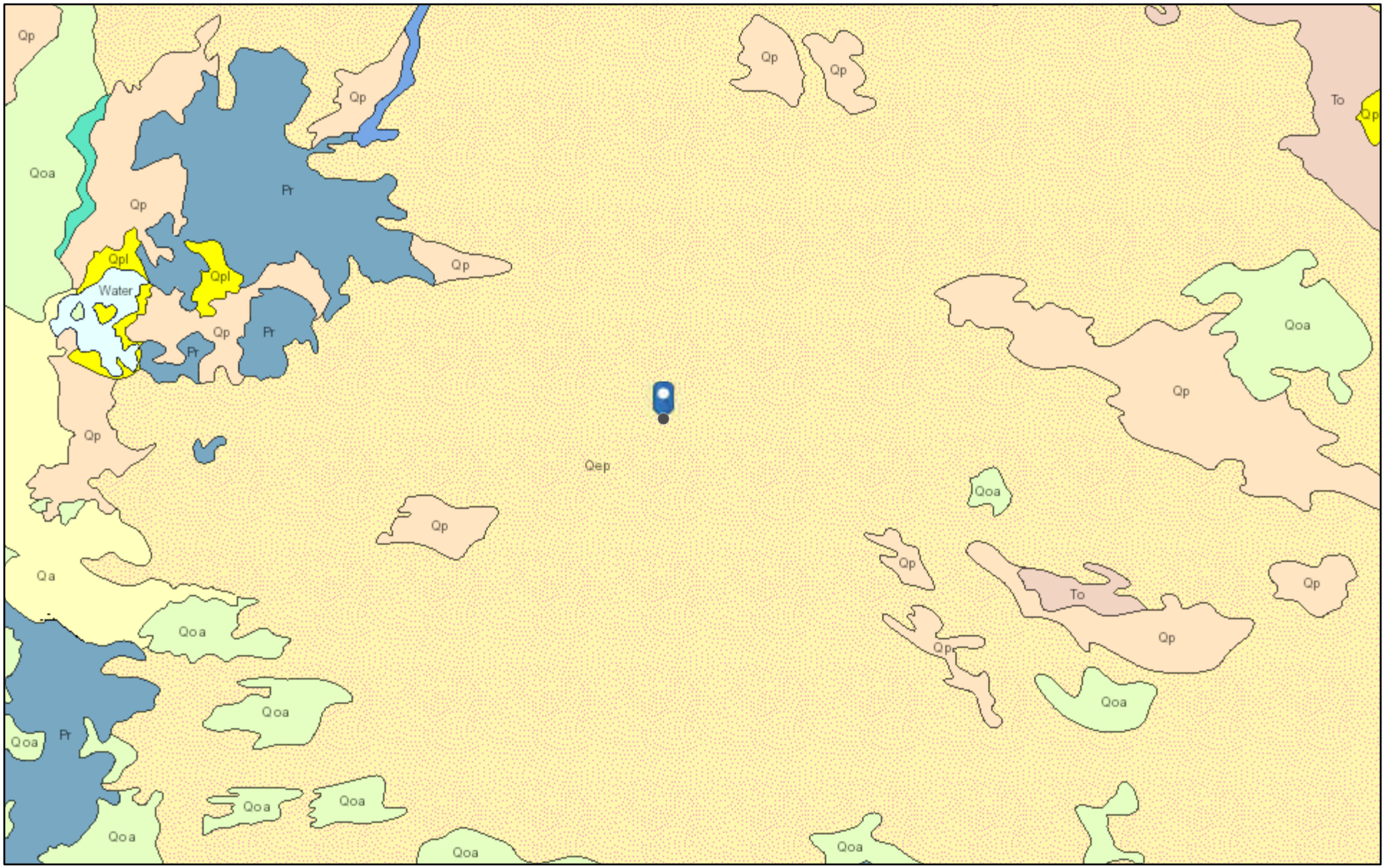
---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

---

17. **Perennial plant reproductive capability:**

SDE 31 Federal #1 Surface Geology



12/12/2023, 8:06:50 AM

1:288,895

0 2 4 8 mi

0 3.25 6.5 13 km

Lithologic Units

Playa—Alluvium and evaporite deposits (Holocene)

Water—Perenial standing water

Qa—Alluvium (Holocene to upper Pleistocene)

Esri, NASA, NGA, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names

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

APPENDIX C – Daily Field and Sampling Reports

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	11/8/2023
Site Location Name:	SDE 31 Federal 001	Report Run Date:	11/8/2023 11:56 PM
Client Contact Name:	Dale Woodall	API #:	30-025-32676
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	11/8/2023 9:02 AM
Departed Site	11/8/2023 2:52 PM

Field Notes

14:44 Completed safety paperwork and initial BH location upon arrival.

14:46 Obtained BH23-01 to 09 at 0 and 2 ft and BH23-03 at 0, 2, and 4.

14:50 All samples were field-screened for Cl and TPH. BH23-02, 04, 05, 06, 08, and 09 have Cl under 600 ppm for 0 and 2' while BH23-01 have 800 ppm Cl at 0' and under 600 at 2'. BH23-03 has Cl values above 600 for 2 and 4 while BH23-07 has values above 600 at 2'. For TPH, only samples under 600 ppm Cl were field screened. TPH values are under 50 ppm.

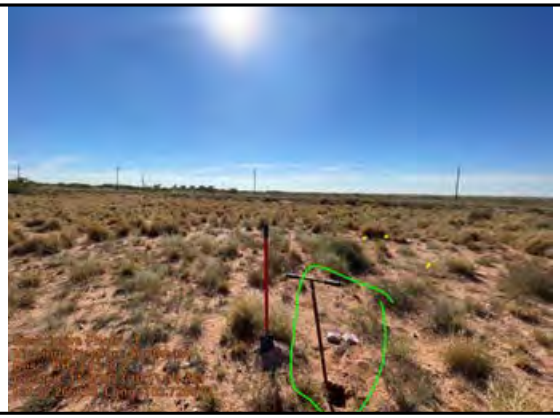
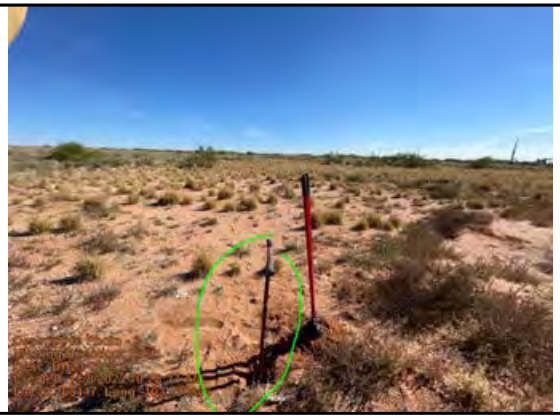
14:51 Next steps:
Get 6' for BH23-03
Get 4' for BH23-07
Step out BH23-07

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: East
	
BH23-03 at 4’. East of old pump Jack	BH23-04 at 2’. South of old pump Jack
Viewing Direction: East	**Viewing Direction**: East
	
BH23-02 at 2’. West of old pump Jack	BH23-01 at 2. North of old pump Jack

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: East
	
BH23-05 at 2’	BH23-06 at 2’
Viewing Direction: East	**Viewing Direction**: East
	
BH23-07 at 2’	BH23-08 at 2’

Daily Site Visit Report

Viewing Direction: East

BH23-09 at 2’

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Deusavan Costa Filho

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	3/26/2024
Site Location Name:	SDE 31 Federal #001	Report Run Date:	3/26/2024 10:47 PM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	575-748-1838		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/26/2024 8:28 AM
Departed Site	3/26/2024 3:24 PM

Field Notes

9:55 Arrived at approximately 8:30 am. On site to collect and field screen confirmation samples from base and walls of excavation.

Held safety meeting and signed safety paperwork.

Daily Site Visit Report

13:39 Collected confirmation samples at WS24-01 and WS24-02 at 0-3’ depth;

WS24-03 at 0-1’ depth;

WS24-04 and WS24-05 at 0-4’ depth;

WS24-07 at 0-3’ depth;

WS24-08 at 1-3’ depth;

WS24-09 and WS24-10 at 3-4’ depth;

WS24-11 at 0-4’ depth.

All samples field screened for chloride and hydrocarbons (VOC & TPH).

All samples passed field screening criteria.

13:39 Collected confirmation samples at BS24-01 to BS24-04 at 3’ depth; BS24-05 to BS24-07 at 1’ depth.

Collected confirmation samples BS24-08 to BS24-16 at 4’ depth.

Collected confirmation samples at BS24-17 to BS24-21 at 3’ depth.

All samples field screened for chloride and hydrocarbons (VOC & TPH).

All samples passed field screening criteria.

Next Steps & Recommendations

1 Jar and fill out COCs for the confirmation samples collected and send to lab for analysis.

Daily Site Visit Report

Site Photos

Viewing Direction: Northwest	**Viewing Direction**: North
	
Southeast corner of excavation facing northwest	Southeast corner of excavation facing north

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: West
	
East end of excavation facing west. Excavation to 3 feet bags. Area collected WS24-01 and WS24-02; BS24-01 to BS24-04, BS24-20 and BS24-21.	East end of excavation facing west. Excavation to 4 feet bags. Area collected WS24-04, WS24-05, WS24-09 and WS24-10; BS24-08 to BS24-16
Viewing Direction: West	**Viewing Direction**: Southwest
	
Northeast corner of excavation facing west	Northeast corner of excavation facing southwest

Daily Site Visit Report

Viewing Direction: Southwest

Northeast corner of excavation facing southwest

Viewing Direction: South

Northeast corner of excavation facing south

Viewing Direction: South

North side of excavation facing south

Viewing Direction: South

North side of excavation facing south

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: Southeast
	
Northwest corner of excavation facing south. Excavations to 1 and 3 feet bags.	Northwest corner of excavation facing southeast
Viewing Direction: East	**Viewing Direction**: East
	
West end of excavation facing east	West end of excavation facing east

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: Northeast
	
West end of excavation facing east. Excavated to 3 and 4 feet bgs. Collected WS24-07, WS24-08, WS24-11; BS24-17 to BS24-19	Southwest excavation facing northeast

Viewing Direction: Northeast	**Viewing Direction**: West
	
Southwest of excavation facing northeast	West end of excavation facing east

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: North
	
Southwest corner of excavation facing north	South end of excavation facing north
Viewing Direction: South	**Viewing Direction**: North
	
Southwest end of excavation facing north. Area collected WS24-03; BS24-05 to BS24-07 (furthest north sector at 1 ft bgs)	FSF

Daily Site Visit Report

Viewing Direction: North

FSF

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Andrew Ludvik

Signature: 

APPENDIX D – Notifications

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

QUESTIONS

Action 325352

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 325352
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAB1915738719**
Incident Name	**NAB1915738719 SDE 31 FEDERAL #001 @ 30-025-32676**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-025-32676] SDE 31 FEDERAL #001**

Location of Release Source	
Site Name	**SDE 31 FEDERAL #001**
Date Release Discovered	**05/10/2019**
Surface Owner	**Federal**

Sampling Event General Information *Please answer all the questions in this group.*	
What is the sampling surface area in square feet	4,400
What is the estimated number of samples that will be gathered	29
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	03/26/2024
Time sampling will commence	09:00 AM
Please provide any information necessary for observers to contact samplers	Stephanie McCarty, 575-263-3295
Please provide any information necessary for navigation to sampling site	at US HYWY 285 S and NM-31, proceed east 7.7 miles, rt turn on NM128, east for 17.8 mi. Turn left on RED rd after proceeding N for 1.7 miles, turn rt for 0.4 mi, keep right for 0.8 mi. turn right after 0.5 mi, destination on left.

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

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	Action Number: 325352
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

CONDITIONS

Created By	Condition	Condition Date
wdale	Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.	3/20/2024

APPENDIX E – Laboratory Data Reports and Chain of Custody Forms

eurofins | Environment Testing

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

November 21, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (575) 748-0176
FAX:

RE: SDE 31 Fed 001 OrderNo.: 2311555

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 19 sample(s) on 11/10/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-001 **Matrix:** SOIL

Client Sample ID: BH23-01 0'
Collection Date: 11/8/2023 9:40:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/15/2023 5:27:10 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/15/2023 5:27:10 PM
Surr: DNOP	93.1	69-147		%Rec	1	11/15/2023 5:27:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 12:48:00 AM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 12:48:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 12:48:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 12:48:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 12:48:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 12:48:00 AM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/16/2023 12:48:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	690	60		mg/Kg	20	11/16/2023 1:51:15 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-002 **Matrix:** SOIL

Client Sample ID: BH23-01 2'
Collection Date: 11/8/2023 10:30:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/15/2023 5:37:50 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/15/2023 5:37:50 PM
Surr: DNOP	89.1	69-147		%Rec	1	11/15/2023 5:37:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 1:53:00 AM
Surr: BFB	104	15-244		%Rec	1	11/16/2023 1:53:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 1:53:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 1:53:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 1:53:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 1:53:00 AM
Surr: 4-Bromofluorobenzene	97.6	39.1-146		%Rec	1	11/16/2023 1:53:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 2:28:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-003 **Matrix:** SOIL

Client Sample ID: BH23-02 0'
Collection Date: 11/8/2023 10:00:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/15/2023 5:48:30 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/15/2023 5:48:30 PM
Surr: DNOP	90.7	69-147		%Rec	1	11/15/2023 5:48:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:15:00 AM
Surr: BFB	104	15-244		%Rec	1	11/16/2023 2:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:15:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:15:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:15:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 2:15:00 AM
Surr: 4-Bromofluorobenzene	99.3	39.1-146		%Rec	1	11/16/2023 2:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 2:40:53 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-004 **Matrix:** SOIL

Client Sample ID: BH23-02 2'
Collection Date: 11/8/2023 10:25:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/15/2023 5:59:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/15/2023 5:59:10 PM
Surr: DNOP	86.9	69-147		%Rec	1	11/15/2023 5:59:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:36:00 AM
Surr: BFB	104	15-244		%Rec	1	11/16/2023 2:36:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:36:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:36:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:36:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 2:36:00 AM
Surr: 4-Bromofluorobenzene	98.5	39.1-146		%Rec	1	11/16/2023 2:36:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	61		mg/Kg	20	11/16/2023 2:53:18 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-005 **Matrix:** SOIL

Client Sample ID: BH23-03 0'
Collection Date: 11/8/2023 10:02:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/15/2023 6:09:49 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 6:09:49 PM
Surr: DNOP	91.3	69-147		%Rec	1	11/15/2023 6:09:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:58:00 AM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 2:58:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:58:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:58:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:58:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 2:58:00 AM
Surr: 4-Bromofluorobenzene	98.1	39.1-146		%Rec	1	11/16/2023 2:58:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	59		mg/Kg	20	11/16/2023 3:05:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-006 **Matrix:** SOIL

Client Sample ID: BH23-03 2'
Collection Date: 11/8/2023 10:06:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	16	9.7		mg/Kg	1	11/15/2023 6:20:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/15/2023 6:20:28 PM
Surr: DNOP	86.5	69-147		%Rec	1	11/15/2023 6:20:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 3:20:00 AM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 3:20:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:20:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 3:20:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 3:20:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 3:20:00 AM
Surr: 4-Bromofluorobenzene	96.5	39.1-146		%Rec	1	11/16/2023 3:20:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	740	60		mg/Kg	20	11/16/2023 3:42:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-007 **Matrix:** SOIL

Client Sample ID: BH23-04 0'
Collection Date: 11/8/2023 10:14:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/15/2023 6:31:06 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 6:31:06 PM
Surr: DNOP	89.4	69-147		%Rec	1	11/15/2023 6:31:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 3:42:00 AM
Surr: BFB	100	15-244		%Rec	1	11/16/2023 3:42:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:42:00 AM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 3:42:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 3:42:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/16/2023 3:42:00 AM
Surr: 4-Bromofluorobenzene	98.0	39.1-146		%Rec	1	11/16/2023 3:42:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 3:55:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-008 **Matrix:** SOIL

Client Sample ID: BH23-04 2'
Collection Date: 11/8/2023 10:18:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/15/2023 6:41:43 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 6:41:43 PM
Surr: DNOP	91.9	69-147		%Rec	1	11/15/2023 6:41:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 4:04:00 AM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 4:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 4:04:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 4:04:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 4:04:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 4:04:00 AM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	11/16/2023 4:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 4:07:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-009 **Matrix:** SOIL

Client Sample ID: BH23-05 0'
Collection Date: 11/8/2023 10:51:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/15/2023 6:52:20 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/15/2023 6:52:20 PM
Surr: DNOP	95.0	69-147		%Rec	1	11/15/2023 6:52:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 4:47:00 AM
Surr: BFB	106	15-244		%Rec	1	11/16/2023 4:47:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 4:47:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 4:47:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 4:47:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 4:47:00 AM
Surr: 4-Bromofluorobenzene	99.2	39.1-146		%Rec	1	11/16/2023 4:47:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	61		mg/Kg	20	11/17/2023 7:54:50 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-010 **Matrix:** SOIL

Client Sample ID: BH23-06 0'
Collection Date: 11/8/2023 11:05:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/15/2023 7:13:27 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 7:13:27 PM
Surr: DNOP	88.9	69-147		%Rec	1	11/15/2023 7:13:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:09:00 AM
Surr: BFB	104	15-244		%Rec	1	11/16/2023 5:09:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 5:09:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:09:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:09:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 5:09:00 AM
Surr: 4-Bromofluorobenzene	96.4	39.1-146		%Rec	1	11/16/2023 5:09:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	78	60		mg/Kg	20	11/17/2023 8:07:15 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-06 2'
Project: SDE 31 Fed 001
Collection Date: 11/8/2023 11:09:00 AM
Lab ID: 2311555-011 **Matrix:** SOIL **Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/15/2023 7:24:02 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/15/2023 7:24:02 PM
Surr: DNOP	88.0	69-147		%Rec	1	11/15/2023 7:24:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 5:31:00 AM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 5:31:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 5:31:00 AM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 5:31:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 5:31:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 5:31:00 AM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/16/2023 5:31:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	320	60		mg/Kg	20	11/16/2023 4:44:57 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-03 4'
Project: SDE 31 Fed 001
Collection Date: 11/8/2023 11:55:00 AM
Lab ID: 2311555-012 **Matrix:** SOIL **Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/15/2023 7:34:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/15/2023 7:34:35 PM
Surr: DNOP	84.6	69-147		%Rec	1	11/15/2023 7:34:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:52:00 AM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 5:52:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 5:52:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:52:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:52:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 5:52:00 AM
Surr: 4-Bromofluorobenzene	96.7	39.1-146		%Rec	1	11/16/2023 5:52:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	560	60		mg/Kg	20	11/16/2023 4:57:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-013 **Matrix:** SOIL

Client Sample ID: BH23-07 0'
Collection Date: 11/8/2023 12:11:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/15/2023 7:45:08 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/15/2023 7:45:08 PM
Surr: DNOP	84.0	69-147		%Rec	1	11/15/2023 7:45:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 6:14:00 AM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 6:14:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:14:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 6:14:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 6:14:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 6:14:00 AM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/16/2023 6:14:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 5:09:47 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-014 **Matrix:** SOIL

Client Sample ID: BH23-07 2
Collection Date: 11/8/2023 12:18:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	12	9.7		mg/Kg	1	11/15/2023 7:55:43 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 7:55:43 PM
Surr: DNOP	88.7	69-147		%Rec	1	11/15/2023 7:55:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 6:36:00 AM
Surr: BFB	104	15-244		%Rec	1	11/16/2023 6:36:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:36:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 6:36:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 6:36:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 6:36:00 AM
Surr: 4-Bromofluorobenzene	96.6	39.1-146		%Rec	1	11/16/2023 6:36:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2000	60		mg/Kg	20	11/16/2023 5:22:11 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-015 **Matrix:** SOIL

Client Sample ID: BH23-08 0'
Collection Date: 11/8/2023 12:27:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	18	9.4		mg/Kg	1	11/15/2023 8:06:18 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/15/2023 8:06:18 PM
Surr: DNOP	92.8	69-147		%Rec	1	11/15/2023 8:06:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 6:58:00 AM
Surr: BFB	107	15-244		%Rec	1	11/16/2023 6:58:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:58:00 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 6:58:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 6:58:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 6:58:00 AM
Surr: 4-Bromofluorobenzene	97.1	39.1-146		%Rec	1	11/16/2023 6:58:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 5:34:36 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-016 **Matrix:** SOIL

Client Sample ID: BH23-08 2'
Collection Date: 11/8/2023 12:32:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/15/2023 8:16:50 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 8:16:50 PM
Surr: DNOP	87.0	69-147		%Rec	1	11/15/2023 8:16:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:20:00 AM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 7:20:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/16/2023 7:20:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:20:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:20:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 7:20:00 AM
Surr: 4-Bromofluorobenzene	98.8	39.1-146		%Rec	1	11/16/2023 7:20:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	420	61		mg/Kg	20	11/16/2023 7:01:28 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-017 **Matrix:** SOIL

Client Sample ID: BH23-09 0'
Collection Date: 11/8/2023 12:38:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/15/2023 8:27:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/15/2023 8:27:22 PM
Surr: DNOP	87.1	69-147		%Rec	1	11/15/2023 8:27:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:41:00 AM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 7:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 7:41:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:41:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:41:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 7:41:00 AM
Surr: 4-Bromofluorobenzene	99.5	39.1-146		%Rec	1	11/16/2023 7:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	59		mg/Kg	20	11/16/2023 7:13:53 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-018 **Matrix:** SOIL

Client Sample ID: BH23-09 2'
Collection Date: 11/8/2023 12:42:00 PM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/15/2023 8:37:52 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/15/2023 8:37:52 PM
Surr: DNOP	93.1	69-147		%Rec	1	11/15/2023 8:37:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 8:03:00 AM
Surr: BFB	110	15-244		%Rec	1	11/16/2023 8:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	11/16/2023 8:03:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 8:03:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 8:03:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 8:03:00 AM
Surr: 4-Bromofluorobenzene	99.7	39.1-146		%Rec	1	11/16/2023 8:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	140	60		mg/Kg	20	11/16/2023 7:26:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311555**
Date Reported: **11/21/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311555-019 **Matrix:** SOIL

Client Sample ID: BH23-05 2'
Collection Date: 11/8/2023 10:54:00 AM
Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/15/2023 8:48:21 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/15/2023 8:48:21 PM
Surr: DNOP	86.5	69-147		%Rec	1	11/15/2023 8:48:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2023 8:15:00 AM
Surr: BFB	103	15-244		%Rec	1	11/17/2023 8:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	11/17/2023 8:15:00 AM
Toluene	ND	0.050		mg/Kg	1	11/17/2023 8:15:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2023 8:15:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/17/2023 8:15:00 AM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	11/17/2023 8:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	11/16/2023 7:38:42 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311555**

21-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **MB-78838**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **78838**	RunNo: **101256**							
Prep Date: **11/16/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722956**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-78838**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **78838**	RunNo: **101256**							
Prep Date: **11/16/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722957**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.3	90	110			

Sample ID: **MB-78839**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **78839**	RunNo: **101256**							
Prep Date: **11/16/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722958**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-78839**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **78839**	RunNo: **101256**							
Prep Date: **11/16/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722959**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311555**

21-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **2311555-019AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-05 2'**	Batch ID: **78805**	RunNo: **101145**
Prep Date: **11/15/2023**	Analysis Date: **11/15/2023**	SeqNo: **3719782** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	49.95	0	88.6	54.2	135			
Surr: DNOP	4.2		4.995		83.3	69	147			

Sample ID: **2311555-019AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-05 2'**	Batch ID: **78805**	RunNo: **101145**
Prep Date: **11/15/2023**	Analysis Date: **11/15/2023**	SeqNo: **3719783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.3	46.60	0	92.7	54.2	135	2.41	29.2	
Surr: DNOP	4.1		4.660		88.7	69	147	0	0	

Sample ID: **LCS-78805**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78805**	RunNo: **101145**
Prep Date: **11/15/2023**	Analysis Date: **11/15/2023**	SeqNo: **3719807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.7	61.9	130			
Surr: DNOP	4.2		5.000		84.7	69	147			

Sample ID: **MB-78805**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78805**	RunNo: **101145**
Prep Date: **11/15/2023**	Analysis Date: **11/15/2023**	SeqNo: **3719809** 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	8.1		10.00		81.5	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311555**

21-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **lcs-78790**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/15/2023**	SeqNo: **3720851** 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	93.6	70	130			
Surr: BFB	2200		1000		217	15	244			

Sample ID: **mb-78790**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/15/2023**	SeqNo: **3720852** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311555**

21-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **lcs-78790**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/15/2023**	SeqNo: **3720764** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	70	130			
Toluene	0.91	0.050	1.000	0	90.5	70	130			
Ethylbenzene	0.92	0.050	1.000	0	92.1	70	130			
Xylenes, Total	2.8	0.10	3.000	0	91.9	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: **mb-78790**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/15/2023**	SeqNo: **3720766** 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	0.96		1.000		96.3	39.1	146			

Sample ID: **2311555-001ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-01 0'**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/16/2023**	SeqNo: **3720772** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	0.9843	0	91.2	70	130			
Toluene	0.92	0.049	0.9843	0	93.7	70	130			
Ethylbenzene	0.95	0.049	0.9843	0	96.6	70	130			
Xylenes, Total	2.8	0.098	2.953	0	95.9	70	130			
Surr: 4-Bromofluorobenzene	0.96		0.9843		97.5	39.1	146			

Sample ID: **2311555-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-01 0'**	Batch ID: **78790**	RunNo: **101220**
Prep Date: **11/14/2023**	Analysis Date: **11/16/2023**	SeqNo: **3720774** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9766	0	92.9	70	130	1.07	20	
Toluene	0.93	0.049	0.9766	0	94.9	70	130	0.476	20	
Ethylbenzene	0.94	0.049	0.9766	0	96.4	70	130	1.08	20	
Xylenes, Total	2.8	0.098	2.930	0	96.4	70	130	0.209	20	
Surr: 4-Bromofluorobenzene	0.95		0.9766		97.3	39.1	146	0	0	

Qualifiers:

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

eurofins | Environment Testing

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

Sample Log-In Check List

Client Name: Devon Energy | Work Order Number: 2311555 | RcptNo: 1

Received By: Juan Rojas 11/10/2023 7:50:00 AM

Completed By: Tracy Casarrubias 11/10/2023 8:32:46 AM

Reviewed By: DAD 11/10/23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: TMH 10/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 11/10/23

16. Additional remarks:

Client did not relinquish chain of custody

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Devon (direct bill)

Mailing Address: on file

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☒ Rush 5 day

Project Name: SDE 31 Fed #001

Project #: 23E-05201

Project Manager: K. Stallings

Sampler: D. Costafilho

On Ice: ☐ Yes ☐ No

# of Coolers: 1 yogi

Cooler Temp(including CF): 5.8+0.1=5.9 (°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. 2311555	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)
11/08/23	9:40	soil	BH23-01 0'	4oz jar	ice	001	X	X					X			
	10:30		BH23-01 2'			002										
	10:00		BH23-02 0'			003										
	10:25		BH23-02 2'			004										
	10:02		BH23-03 0'			005										
	10:06		BH23-03 2'			006										
	10:14		BH23-04 0'			007										
	10:18		BH23-04 2'			008										
	10:51		BH23-05 0'			009										
	11:05		BH23-06 0'			010										
	11:09		BH23-06 2'			011										
	11:55		BH23-03 4'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/9/23	900
Date: 11/9/23	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 11/10/23	Time 7:57

Remarks:
email results to:
kstallings@vertex.ca
dcostafilho@vertex.ca

Chain-of-Custody Record

Client: Devon (direct bill)

Mailing Address: on file

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☒ Rush 5 Day

Project Name: SDE 31 Fed #001

Project #: 23E-05201

Project Manager: K. Stallings

Sampler: D. Costafilho

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 4oz

Cooler Temp(including CF): 5.8+0.1=5.9 (°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. 2311555	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)
11/08/23	12:11	soil	BH23-07 0'	4oz jar	ice	013	X	X					X			
	12:18		BH23-07 2'			014										
	12:27		BH23-08 0'			015										
	12:32		BH23-08 2'			016										
	12:38		BH23-09 0'			017										
	12:42		BH23-09 2'			018										
	10:54		BH23-05 2'			019										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		11/9/23	900
Date: 11/9/23	Time: 1900	Relinquished by: [signature]	Received by: [signature]	Via: courier	Date 11/10/23	Time 7:50

Remarks:
email results to:
kstallings@vertex.ca
dcostafilho@vertex.ca

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

eurofins | Environment Testing

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

November 22, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (575) 748-0176
FAX:

RE: SDE 31 FED 001 OrderNo.: 2311613

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 15 sample(s) on 11/11/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-001 **Matrix:** SOIL

Client Sample ID: BH23-07 4'
Collection Date: 11/9/2023 10:33:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/16/2023 1:29:43 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 1:29:43 PM
Surr: DNOP	123	69-147		%Rec	1	11/16/2023 1:29:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 9:06:30 AM
Surr: BFB	98.9	15-244		%Rec	1	11/18/2023 9:06:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/18/2023 9:06:30 AM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 9:06:30 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 9:06:30 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2023 9:06:30 AM
Surr: 4-Bromofluorobenzene	97.7	39.1-146		%Rec	1	11/18/2023 9:06:30 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1200	60		mg/Kg	20	11/17/2023 1:30:06 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-002 **Matrix:** SOIL

Client Sample ID: BH23-11 0'
Collection Date: 11/9/2023 10:10:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	11/16/2023 1:40:17 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/16/2023 1:40:17 PM
Surr: DNOP	95.6	69-147		%Rec	1	11/16/2023 1:40:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 10:17:32 AM
Surr: BFB	97.4	15-244		%Rec	1	11/18/2023 10:17:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 10:17:32 AM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 10:17:32 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 10:17:32 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/18/2023 10:17:32 AM
Surr: 4-Bromofluorobenzene	95.7	39.1-146		%Rec	1	11/18/2023 10:17:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	150	60		mg/Kg	20	11/17/2023 1:45:16 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-003 **Matrix:** SOIL

Client Sample ID: BH23-10 0'
Collection Date: 11/9/2023 9:57:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/16/2023 1:50:53 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/16/2023 1:50:53 PM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 1:50:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 11:28:38 AM
Surr: BFB	94.6	15-244		%Rec	1	11/18/2023 11:28:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/18/2023 11:28:38 AM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 11:28:38 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 11:28:38 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/18/2023 11:28:38 AM
Surr: 4-Bromofluorobenzene	92.1	39.1-146		%Rec	1	11/18/2023 11:28:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 2:30:45 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-004 **Matrix:** SOIL

Client Sample ID: BH23-10 2'
Collection Date: 11/9/2023 10:08:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 2:12:02 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 2:12:02 PM
Surr: DNOP	114	69-147		%Rec	1	11/16/2023 2:12:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 11:52:21 AM
Surr: BFB	93.5	15-244		%Rec	1	11/18/2023 11:52:21 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 11:52:21 AM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 11:52:21 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 11:52:21 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/18/2023 11:52:21 AM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	11/18/2023 11:52:21 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1100	60		mg/Kg	20	11/17/2023 2:45:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-005 **Matrix:** SOIL

Client Sample ID: BH23-10 4'
Collection Date: 11/9/2023 11:11:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/16/2023 2:22:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2023 2:22:38 PM
Surr: DNOP	132	69-147		%Rec	1	11/16/2023 2:22:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2023 12:16:03 PM
Surr: BFB	93.2	15-244		%Rec	1	11/18/2023 12:16:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/18/2023 12:16:03 PM
Toluene	ND	0.050		mg/Kg	1	11/18/2023 12:16:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2023 12:16:03 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/18/2023 12:16:03 PM
Surr: 4-Bromofluorobenzene	92.1	39.1-146		%Rec	1	11/18/2023 12:16:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1100	60		mg/Kg	20	11/17/2023 3:01:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-006 **Matrix:** SOIL

Client Sample ID: BH23-11 2'
Collection Date: 11/9/2023 10:15:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/16/2023 2:33:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/16/2023 2:33:19 PM
Surr: DNOP	99.3	69-147		%Rec	1	11/16/2023 2:33:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 12:39:39 PM
Surr: BFB	98.7	15-244		%Rec	1	11/18/2023 12:39:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 12:39:39 PM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 12:39:39 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 12:39:39 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2023 12:39:39 PM
Surr: 4-Bromofluorobenzene	96.2	39.1-146		%Rec	1	11/18/2023 12:39:39 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1500	60		mg/Kg	20	11/17/2023 3:16:13 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-007 **Matrix:** SOIL

Client Sample ID: BH23-11 4'
Collection Date: 11/9/2023 11:35:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 2:43:55 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 2:43:55 PM
Surr: DNOP	131	69-147		%Rec	1	11/16/2023 2:43:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 1:03:20 PM
Surr: BFB	97.5	15-244		%Rec	1	11/18/2023 1:03:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 1:03:20 PM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 1:03:20 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 1:03:20 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2023 1:03:20 PM
Surr: 4-Bromofluorobenzene	94.5	39.1-146		%Rec	1	11/18/2023 1:03:20 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	190	60		mg/Kg	20	11/17/2023 3:31:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-008 **Matrix:** SOIL

Client Sample ID: BH23-12 0'
Collection Date: 11/9/2023 10:46:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/16/2023 2:54:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2023 2:54:35 PM
Surr: DNOP	102	69-147		%Rec	1	11/16/2023 2:54:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2023 1:27:02 PM
Surr: BFB	96.7	15-244		%Rec	1	11/18/2023 1:27:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 1:27:02 PM
Toluene	ND	0.048		mg/Kg	1	11/18/2023 1:27:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2023 1:27:02 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/18/2023 1:27:02 PM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/18/2023 1:27:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	59		mg/Kg	20	11/17/2023 3:46:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-009 **Matrix:** SOIL

Client Sample ID: BH23-12 2'
Collection Date: 11/9/2023 10:51:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/16/2023 3:05:17 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2023 3:05:17 PM
Surr: DNOP	84.1	69-147		%Rec	1	11/16/2023 3:05:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 1:50:45 PM
Surr: BFB	96.1	15-244		%Rec	1	11/18/2023 1:50:45 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/18/2023 1:50:45 PM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 1:50:45 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 1:50:45 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/18/2023 1:50:45 PM
Surr: 4-Bromofluorobenzene	92.7	39.1-146		%Rec	1	11/18/2023 1:50:45 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1300	60		mg/Kg	20	11/17/2023 4:01:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-010 **Matrix:** SOIL

Client Sample ID: BH23-13 0'
Collection Date: 11/9/2023 11:18:00 AM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 3:15:57 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 3:15:57 PM
Surr: DNOP	110	69-147		%Rec	1	11/16/2023 3:15:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2023 2:14:29 PM
Surr: BFB	97.8	15-244		%Rec	1	11/18/2023 2:14:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 2:14:29 PM
Toluene	ND	0.048		mg/Kg	1	11/18/2023 2:14:29 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2023 2:14:29 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/18/2023 2:14:29 PM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	11/18/2023 2:14:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 4:16:51 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-13 2'
Project: SDE 31 FED 001
Collection Date: 11/9/2023 11:28:00 AM
Lab ID: 2311613-011 **Matrix:** SOIL **Received Date:** 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 3:26:41 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 3:26:41 PM
Surr: DNOP	120	69-147		%Rec	1	11/16/2023 3:26:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 3:01:54 PM
Surr: BFB	92.8	15-244		%Rec	1	11/18/2023 3:01:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/18/2023 3:01:54 PM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 3:01:54 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 3:01:54 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/18/2023 3:01:54 PM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	11/18/2023 3:01:54 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	250	60		mg/Kg	20	11/17/2023 4:32:01 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-012 **Matrix:** SOIL

Client Sample ID: BH23-14 0'
Collection Date: 11/9/2023 12:02:00 PM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 3:37:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 3:37:19 PM
Surr: DNOP	124	69-147		%Rec	1	11/16/2023 3:37:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2023 3:25:34 PM
Surr: BFB	97.9	15-244		%Rec	1	11/18/2023 3:25:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 3:25:34 PM
Toluene	ND	0.048		mg/Kg	1	11/18/2023 3:25:34 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2023 3:25:34 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/18/2023 3:25:34 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/18/2023 3:25:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 4:47:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-013 **Matrix:** SOIL

Client Sample ID: BH23-14 2'
Collection Date: 11/9/2023 12:07:00 PM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/16/2023 3:48:02 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/16/2023 3:48:02 PM
Surr: DNOP	119	69-147		%Rec	1	11/16/2023 3:48:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/18/2023 3:49:16 PM
Surr: BFB	96.0	15-244		%Rec	1	11/18/2023 3:49:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/18/2023 3:49:16 PM
Toluene	ND	0.050		mg/Kg	1	11/18/2023 3:49:16 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/18/2023 3:49:16 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/18/2023 3:49:16 PM
Surr: 4-Bromofluorobenzene	93.3	39.1-146		%Rec	1	11/18/2023 3:49:16 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	350	60		mg/Kg	20	11/17/2023 5:32:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-014 **Matrix:** SOIL

Client Sample ID: BH23-15 0'
Collection Date: 11/9/2023 12:14:00 PM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/16/2023 3:58:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2023 3:58:45 PM
Surr: DNOP	122	69-147		%Rec	1	11/16/2023 3:58:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2023 4:12:58 PM
Surr: BFB	95.0	15-244		%Rec	1	11/18/2023 4:12:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 4:12:58 PM
Toluene	ND	0.048		mg/Kg	1	11/18/2023 4:12:58 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2023 4:12:58 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/18/2023 4:12:58 PM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	11/18/2023 4:12:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 5:47:48 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311613**
Date Reported: **11/22/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 FED 001
Lab ID: 2311613-015 **Matrix:** SOIL

Client Sample ID: BH23-15 2'
Collection Date: 11/9/2023 12:18:00 PM
Received Date: 11/11/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/16/2023 4:09:29 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 4:09:29 PM
Surr: DNOP	101	69-147		%Rec	1	11/16/2023 4:09:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 4:36:41 PM
Surr: BFB	95.7	15-244		%Rec	1	11/18/2023 4:36:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 4:36:41 PM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 4:36:41 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 4:36:41 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/18/2023 4:36:41 PM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	11/18/2023 4:36:41 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 6:02:59 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311613**

22-Nov-23

Client: Devon Energy

Project: SDE 31 FED 001

Sample ID: **MB-78867**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78867**	RunNo: **101284**
Prep Date: **11/17/2023**	Analysis Date: **11/17/2023**	SeqNo: **3724727** Units: **mg/Kg**

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

Sample ID: **LCS-78867**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78867**	RunNo: **101284**
Prep Date: **11/17/2023**	Analysis Date: **11/17/2023**	SeqNo: **3724728** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311613**

22-Nov-23

Client: Devon Energy

Project: SDE 31 FED 001

Sample ID: **LCS-78823**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **78823**	RunNo: **101250**							
Prep Date: **11/15/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722305**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.8	69	147			

Sample ID: **LCS-78828**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **78828**	RunNo: **101250**							
Prep Date: **11/15/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722306**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	128	61.9	130			
Surr: DNOP	7.4		5.000		148	69	147			S

Sample ID: **MB-78823**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **78823**	RunNo: **101250**							
Prep Date: **11/15/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722307**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	69	147			

Sample ID: **MB-78828**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **78828**	RunNo: **101250**							
Prep Date: **11/15/2023**	Analysis Date: **11/16/2023**	SeqNo: **3722308**	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		116	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311613**

22-Nov-23

Client: Devon Energy

Project: SDE 31 FED 001

Sample ID: **lcs-78825**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725395** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	70	130			
Surr: BFB	2000		1000		205	15	244			

Sample ID: **mb-78825**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725396** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		96.4	15	244			

Sample ID: **2311613-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-07 4'**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725470** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.61	0	92.7	70	130			
Surr: BFB	2000		984.3		206	15	244			

Sample ID: **2311613-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-07 4'**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725471** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.53	0	88.8	70	130	4.57	20	
Surr: BFB	2000		981.4		199	15	244	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311613**

22-Nov-23

Client: Devon Energy

Project: SDE 31 FED 001

Sample ID: **LCS-78825**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.1	70	130			
Toluene	0.94	0.050	1.000	0	94.0	70	130			
Ethylbenzene	0.94	0.050	1.000	0	94.3	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.0	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	39.1	146			

Sample ID: **mb-78825**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725516** 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	0.95		1.000		94.7	39.1	146			

Sample ID: **2311613-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-11 0'**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.024	0.9452	0	91.0	70	130			
Toluene	0.87	0.047	0.9452	0	92.4	70	130			
Ethylbenzene	0.86	0.047	0.9452	0	91.4	70	130			
Xylenes, Total	2.6	0.095	2.836	0	90.7	70	130			
Surr: 4-Bromofluorobenzene	0.90		0.9452		95.2	39.1	146			

Sample ID: **2311613-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-11 0'**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725522** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9452	0	93.9	70	130	3.14	20	
Toluene	0.90	0.047	0.9452	0	95.0	70	130	2.78	20	
Ethylbenzene	0.90	0.047	0.9452	0	94.8	70	130	3.62	20	
Xylenes, Total	2.7	0.095	2.836	0	93.8	70	130	3.41	20	
Surr: 4-Bromofluorobenzene	0.91		0.9452		96.8	39.1	146	0	0	

Qualifiers:

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

eurofins | Environment Testing

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

Sample Log-In Check List

Client Name: Devon Energy | Work Order Number: 2311613 | RcptNo: 1

Received By: Juan Rojas | 11/11/2023 7:30:00 AM

Completed By: Juan Rojas | 11/11/23 7:45

Reviewed By: | 11/11/23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: JR 11/11/23

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Client missing mailing address, phone number and email address on COC. JR 11/11/23

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	No	Yogi		

Chain-of-Custody Record

Client: Devon

Mailing Address: on file

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☒ Standard ☒ Rush 5 day

Project Name: SDE 31 Fed 001

Project #: 23E-05201

Project Manager: K. Stallings

Sampler: D. Costafilho

On Ice: ☒ Yes ☐ No

# of Coolers: 1 4oz

Cooler Temp(including CF): 0.9+0.1=1.0 (°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. 2311613	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)
11/09/23	10:33	soil	BH23-07 4'	4oz jar	ice	-001	X	X					X			
	10:10		BH23-11 0'			-002										
	9:57		BH23-10 0'			-003										
	10:08		BH23-10 2'			-004										
	11:11		BH23-10 4'			-005										
	10:15		BH23-11 2'			-006										
	11:35		BH23-11 4'			-007										
	10:46		BH23-12 0'			-008										
	10:51		BH23-12 2'			-009										
	11:18		BH23-13 0'			-010										
	11:28		BH23-13 2'			-011										
	12:02		BH23-14 0'			-012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		11/10/23	900
Date: 11/10/23	Time: 1900	Relinquished by: [signature]	Received by: [signature]	Via: courier	Date 11/11/23	Time 7:30

Remarks:
email results to:
kstallings@vortex.com
dcostafilho@vortex.com

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: Devon

Mailing Address: on file

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☒ Rush 5 Day

Project Name: SDE 31 Fed 001

Project #: 23E-05201

Project Manager: K Stallings

Sampler: D. Costafilho

On Ice: ☐ ~~Yes~~ ☐ No

# of Coolers: 1 Yes

Cooler Temp(including CF): 0.9+a1=1.0 (°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. 2311613	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)
11/09/23	12:07	Soil	BH23-14 2'	4oz jar	ice	-013	X	X					X			
↓	12:14	↓	BH23-15 0'	↓	↓	-014	↓	↓					↓			
↓	12:18	↓	BH23-15 21'	↓	↓	-015	↓	↓					↓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			acumming		11/10/23	900
11/10/23	1900	acumming		courier	11/11/23	7:30

Remarks: email results to:
kstallings@vertex.ca
dcostafilho@vertex.ca

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

eurofins | Environment Testing

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

November 29, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (575) 748-0176
FAX:

RE: SDE 31 Fed 001 OrderNo.: 2311678

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 6 sample(s) on 11/14/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-001 **Matrix:** SOIL

Client Sample ID: BH23-13 4'
Collection Date: 11/10/2023 9:45:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	11/20/2023 9:39:09 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/20/2023 9:39:09 PM
Surr: DNOP	104	69-147		%Rec	1	11/20/2023 9:39:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/21/2023 2:23:00 AM
Surr: BFB	99.6	15-244		%Rec	1	11/21/2023 2:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/21/2023 2:23:00 AM
Toluene	ND	0.048		mg/Kg	1	11/21/2023 2:23:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/21/2023 2:23:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/21/2023 2:23:00 AM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	11/21/2023 2:23:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	160	60		mg/Kg	20	11/20/2023 4:24:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-002 **Matrix:** SOIL

Client Sample ID: BH23-12 4'
Collection Date: 11/10/2023 9:50:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/20/2023 9:49:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/20/2023 9:49:37 PM
Surr: DNOP	99.5	69-147		%Rec	1	11/20/2023 9:49:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/21/2023 2:45:00 AM
Surr: BFB	98.0	15-244		%Rec	1	11/21/2023 2:45:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/21/2023 2:45:00 AM
Toluene	ND	0.047		mg/Kg	1	11/21/2023 2:45:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/21/2023 2:45:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/21/2023 2:45:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/21/2023 2:45:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	650	60		mg/Kg	20	11/20/2023 4:36:43 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-003 **Matrix:** SOIL

Client Sample ID: BH23-07 6'
Collection Date: 11/10/2023 10:00:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/20/2023 10:00:04 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/20/2023 10:00:04 PM
Surr: DNOP	104	69-147		%Rec	1	11/20/2023 10:00:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2023 3:07:00 AM
Surr: BFB	98.0	15-244		%Rec	1	11/21/2023 3:07:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	11/21/2023 3:07:00 AM
Toluene	ND	0.049		mg/Kg	1	11/21/2023 3:07:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2023 3:07:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/21/2023 3:07:00 AM
Surr: 4-Bromofluorobenzene	93.3	39.1-146		%Rec	1	11/21/2023 3:07:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	1200	60		mg/Kg	20	11/20/2023 4:49:07 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-004 **Matrix:** SOIL

Client Sample ID: BH23-10 5'
Collection Date: 11/10/2023 10:20:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	11/20/2023 10:20:50 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/20/2023 10:20:50 PM
Surr: DNOP	105	69-147		%Rec	1	11/20/2023 10:20:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2023 3:28:00 AM
Surr: BFB	99.6	15-244		%Rec	1	11/21/2023 3:28:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	11/21/2023 3:28:00 AM
Toluene	ND	0.049		mg/Kg	1	11/21/2023 3:28:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2023 3:28:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/21/2023 3:28:00 AM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/21/2023 3:28:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	1000	60		mg/Kg	20	11/20/2023 5:26:20 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-005 **Matrix:** SOIL

Client Sample ID: BH23-16 0'
Collection Date: 11/10/2023 10:58:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	11/20/2023 10:31:19 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/20/2023 10:31:19 PM
Surr: DNOP	96.0	69-147		%Rec	1	11/20/2023 10:31:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/21/2023 3:50:00 AM
Surr: BFB	98.8	15-244		%Rec	1	11/21/2023 3:50:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/21/2023 3:50:00 AM
Toluene	ND	0.049		mg/Kg	1	11/21/2023 3:50:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/21/2023 3:50:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/21/2023 3:50:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/21/2023 3:50:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/20/2023 5:38:45 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311678**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Fed 001
Lab ID: 2311678-006 **Matrix:** SOIL

Client Sample ID: BH23-16 2'
Collection Date: 11/10/2023 11:03:00 AM
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	11/20/2023 10:41:48 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/20/2023 10:41:48 PM
Surr: DNOP	103	69-147		%Rec	1	11/20/2023 10:41:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/21/2023 4:33:00 AM
Surr: BFB	101	15-244		%Rec	1	11/21/2023 4:33:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	11/21/2023 4:33:00 AM
Toluene	ND	0.050		mg/Kg	1	11/21/2023 4:33:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/21/2023 4:33:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/21/2023 4:33:00 AM
Surr: 4-Bromofluorobenzene	93.0	39.1-146		%Rec	1	11/21/2023 4:33:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	1700	60		mg/Kg	20	11/20/2023 5:51:10 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311678**

29-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **MB-78898**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78898**	RunNo: **101333**
Prep Date: **11/20/2023**	Analysis Date: **11/20/2023**	SeqNo: **3727442** Units: **mg/Kg**

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

Sample ID: **LCS-78898**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78898**	RunNo: **101333**
Prep Date: **11/20/2023**	Analysis Date: **11/20/2023**	SeqNo: **3727443** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311678**

29-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **LCS-78874**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78874**	RunNo: **101310**
Prep Date: **11/17/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.5	61.9	130			
Surr: DNOP	4.8		5.000		96.1	69	147			

Sample ID: **MB-78874**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78874**	RunNo: **101310**
Prep Date: **11/17/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726865** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.4	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311678**

29-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **lcs-78846**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **78846**	RunNo: **101307**
Prep Date: **11/16/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726718** 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	100	70	130			
Surr: BFB	2200		1000		220	15	244			

Sample ID: **mb-78846**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **78846**	RunNo: **101307**
Prep Date: **11/16/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726719** 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		99.4	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311678**

29-Nov-23

Client: Devon Energy

Project: SDE 31 Fed 001

Sample ID: **lcs-78846**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78846**	RunNo: **101307**
Prep Date: **11/16/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726853** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.2	70	130			
Toluene	0.93	0.050	1.000	0	93.0	70	130			
Ethylbenzene	0.94	0.050	1.000	0	93.9	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.6	70	130			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.0	39.1	146			

Sample ID: **mb-78846**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78846**	RunNo: **101307**
Prep Date: **11/16/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726856** 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	0.95		1.000		95.0	39.1	146			

Qualifiers:

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

eurofins | Environment Testing

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

Sample Log-In Check List

Client Name: Devon Energy | Work Order Number: 2311678 | RcptNo: 1

Received By: Juan Rojas 11/14/2023 7:40:00 AM

Completed By: Tracy Casarrubias 11/14/2023 8:32:05 AM

Reviewed By: TM 11/14/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: SCM 11/14/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 11/14/23

16. Additional remarks:

Client did not relinquish chain of custody

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Devon

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☑ Rush 5 day

Project Name: SDE 31 Fed 001

Project #: 23E-05201

Project Manager: K Stallings

Sampler: D. Castafilho

On Ice: ☐ ~~Yes~~ ☐ No

# of Coolers: 1 Marty

Cooler Temp(including CF): 0.1-0.1=0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311678	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	CDF, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/10/23	9:45	Soil	BH23-13 4'	4oz jar	ice	001	X	X					X			
	9:50		BH23-12 4'			002										
	10:00		BH23-07 6'			003										
	10:20		BH23-10 5'			004										
	10:58		BH23-16 0'			005										
	11:03		BH23-16 2'			006										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/13/23	1030
Date: 11/13/23	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 11/14/23	Time 7:4

Remarks:
Send results to:
kstallings@vertex.ca
dcostafilho@vertex.ca

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

eurofins | Environment Testing

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

February 13, 2024

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL:
FAX:

RE: SDE 31 Federal 001 OrderNo.: 2402005

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 2/1/2024 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2402005**
Date Reported: **2/13/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 7'
Project: SDE 31 Federal 001 **Collection Date:** 1/29/2024 2:00:00 PM
Lab ID: 2402005-001 **Matrix:** SOIL **Received Date:** 2/1/2024 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/2/2024 9:46:41 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/2/2024 9:46:41 PM
Surr: DNOP	103	61.2-134		%Rec	1	2/2/2024 9:46:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/5/2024 7:01:26 PM
Surr: BFB	104	15-244		%Rec	1	2/5/2024 7:01:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	2/5/2024 7:01:26 PM
Toluene	ND	0.047		mg/Kg	1	2/5/2024 7:01:26 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/5/2024 7:01:26 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/5/2024 7:01:26 PM
Surr: 4-Bromofluorobenzene	90.2	39.1-146		%Rec	1	2/5/2024 7:01:26 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	350	60		mg/Kg	20	2/3/2024 3:13:00 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2402005**

13-Feb-24

Client: Vertex Resources Services, Inc.

Project: SDE 31 Federal 001

Sample ID: **MB-80236**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **80236**	RunNo: **102858**
Prep Date: **2/2/2024**	Analysis Date: **2/3/2024**	SeqNo: **3800520** Units: **mg/Kg**

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

Sample ID: **LCS-80236**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **80236**	RunNo: **102858**
Prep Date: **2/2/2024**	Analysis Date: **2/3/2024**	SeqNo: **3800521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2402005**

13-Feb-24

Client: Vertex Resources Services, Inc.

Project: SDE 31 Federal 001

Sample ID: **MB-80224**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **80224**	RunNo: **102843**
Prep Date: **2/1/2024**	Analysis Date: **2/2/2024**	SeqNo: **3800103** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		123	61.2	134			

Sample ID: **LCS-80224**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **80224**	RunNo: **102843**
Prep Date: **2/1/2024**	Analysis Date: **2/2/2024**	SeqNo: **3800104** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	6.4		5.000		127	69	147			

Sample ID: **MB-80220**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **80220**	RunNo: **102843**
Prep Date: **2/1/2024**	Analysis Date: **2/2/2024**	SeqNo: **3800108** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		110	61.2	134			

Sample ID: **LCS-80220**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **80220**	RunNo: **102843**
Prep Date: **2/1/2024**	Analysis Date: **2/2/2024**	SeqNo: **3800109** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	117	61.9	130			
Surr: DNOP	5.9		5.000		119	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2402005**

13-Feb-24

Client: Vertex Resources Services, Inc.

Project: SDE 31 Federal 001

Sample ID: **lcs-80203**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **80203**	RunNo: **102873**
Prep Date: **2/1/2024**	Analysis Date: **2/5/2024**	SeqNo: **3800986** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	70	130			
Surr: BFB	2100		1000		206	15	244			

Sample ID: **mb-80203**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **80203**	RunNo: **102873**
Prep Date: **2/1/2024**	Analysis Date: **2/5/2024**	SeqNo: **3800987** 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		99.1	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2402005**

13-Feb-24

Client: Vertex Resources Services, Inc.

Project: SDE 31 Federal 001

Sample ID: **LCS-80203**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **80203**	RunNo: **102873**
Prep Date: **2/1/2024**	Analysis Date: **2/5/2024**	SeqNo: **3800993** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	84.4	70	130			
Toluene	0.84	0.050	1.000	0	84.2	70	130			
Ethylbenzene	0.85	0.050	1.000	0	85.4	70	130			
Xylenes, Total	2.6	0.10	3.000	0	85.8	70	130			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.1	39.1	146			

Sample ID: **mb-80203**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **80203**	RunNo: **102873**
Prep Date: **2/1/2024**	Analysis Date: **2/5/2024**	SeqNo: **3800994** 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	0.89		1.000		88.6	39.1	146			

Qualifiers:

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

eurofins | Environment Testing

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

Sample Log-In Check List

Client Name: Vertex Resources Work Order Number: 2402005 RcptNo: 1

Received By: Tracy Casarrubias 2/1/2024 7:30:00 AM

Completed By: Desiree Dominguez 2/1/2024 8:20:55 AM DD

Reviewed By: 2-1-24

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: 2/1/24

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:

Mailing address, phone number and Email/Fax are missing on COC- DAD 2/1/24

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Vertex / Devon

Mailing Address: On file

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☑ Standard ☑ Rush 5 Day

Project Name: SDE 31 Federal #001

Project #: 23E-05201

Project Manager: Kent Stallings

Sampler: ~~SM~~ ZE

On Ice: ☑ Yes ☐ No 4 oz jar

# of Coolers: 1

Cooler Temp(Including CF): 2.0 - 0.1 = 2.0 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2402005
1/29/24	14:00	Soil	BH23-07 7'	4oz jar	Ice	-001

Analysis Request

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

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
1/31/24	1130				1/31/24	1130
1/31/24	1700			courier	2/1/24	7:30

Remarks: Direct bill to: Devon
W/O#: 1006092001
cc. kstallings@vertex.ca
SMccarty@vertex.ca

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Kent Stallings
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 4/8/2024 8:17:03 PM

JOB DESCRIPTION

SDE 31 Federal #001

JOB NUMBER

885-1917-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

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4/8/2024 8:17:03 PM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Vertex
Project/Site: SDE 31 Federal #001

Laboratory Job ID: 885-1917-1

Table of Contents

Definitions/Glossary

Client: Vertex Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Vertex Job ID: 885-1917-1
Project: SDE 31 Federal #001

Job ID: 885-1917-1 Eurofins Albuquerque

Job Narrative
885-1917-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/28/2024 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C.

Gasoline Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-01 0-3'
Date Collected: 03/26/24 09:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-1
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 11:02	04/01/24 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*03/28/24 11:02*	*04/01/24 13:45*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 13:45	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 13:45	1
Toluene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 13:45	1
Xylenes, Total	ND		0.098		mg/Kg		03/28/24 11:02	04/01/24 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*03/28/24 11:02*	*04/01/24 13:45*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0		mg/Kg		03/28/24 13:10	03/28/24 15:47	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		03/28/24 13:10	03/28/24 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*91*		*62 - 134*	*03/28/24 13:10*	*03/28/24 15:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 17:37	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-02 0-3'
Date Collected: 03/26/24 09:10
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-2
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 11:02	04/01/24 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 11:02*	*04/01/24 14:51*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 14:51	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 14:51	1
Toluene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 14:51	1
Xylenes, Total	ND		0.098		mg/Kg		03/28/24 11:02	04/01/24 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 11:02*	*04/01/24 14:51*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		03/28/24 13:10	03/28/24 15:59	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		03/28/24 13:10	03/28/24 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*92*		*62 - 134*	*03/28/24 13:10*	*03/28/24 15:59*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 18:14	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-03 0-1"
Date Collected: 03/26/24 09:20
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-3
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 11:02	04/01/24 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*15 - 244*	*03/28/24 11:02*	*04/01/24 15:56*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 11:02	04/01/24 15:56	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 15:56	1
Toluene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 15:56	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 11:02	04/01/24 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*03/28/24 11:02*	*04/01/24 15:56*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.6		mg/Kg		03/28/24 13:10	03/28/24 16:12	1
Motor Oil Range Organics [C28-C40]	ND		43		mg/Kg		03/28/24 13:10	03/28/24 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*95*		*62 - 134*	*03/28/24 13:10*	*03/28/24 16:12*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 18:51	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-04 0-4'
Date Collected: 03/26/24 09:30
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-4
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*03/28/24 11:02*	*04/01/24 16:18*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 16:18	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 16:18	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 16:18	1
Xylenes, Total	ND		0.094		mg/Kg		03/28/24 11:02	04/01/24 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*	*03/28/24 11:02*	*04/01/24 16:18*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5		mg/Kg		03/28/24 13:10	03/28/24 16:24	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*03/28/24 13:10*	*03/28/24 16:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**		60		mg/Kg		03/28/24 15:36	03/28/24 19:04	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-05 0-4"
Date Collected: 03/26/24 09:40
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-5
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*15 - 244*	*03/28/24 11:02*	*04/01/24 16:40*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 16:40	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 16:40	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 16:40	1
Xylenes, Total	ND		0.095		mg/Kg		03/28/24 11:02	04/01/24 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 11:02*	*04/01/24 16:40*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5		mg/Kg		03/28/24 13:10	03/28/24 16:37	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*03/28/24 13:10*	*03/28/24 16:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**220**		60		mg/Kg		03/28/24 15:36	03/28/24 19:41	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-07 0-3'
Date Collected: 03/26/24 09:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-6
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*03/28/24 11:02*	*04/01/24 17:01*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 17:01	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 17:01	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 17:01	1
Xylenes, Total	ND		0.094		mg/Kg		03/28/24 11:02	04/01/24 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*	*03/28/24 11:02*	*04/01/24 17:01*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg		03/28/24 13:10	03/28/24 16:49	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		03/28/24 13:10	03/28/24 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*	*03/28/24 13:10*	*03/28/24 16:49*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**310**		60		mg/Kg		03/28/24 15:36	03/28/24 19:53	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-08 1-3'
Date Collected: 03/26/24 10:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-7
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		03/28/24 11:02	04/01/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*15 - 244*	*03/28/24 11:02*	*04/01/24 17:23*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 17:23	1
Ethylbenzene	ND		0.048		mg/Kg		03/28/24 11:02	04/01/24 17:23	1
Toluene	ND		0.048		mg/Kg		03/28/24 11:02	04/01/24 17:23	1
Xylenes, Total	ND		0.096		mg/Kg		03/28/24 11:02	04/01/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 11:02*	*04/01/24 17:23*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 13:10	03/28/24 17:02	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*	*03/28/24 13:10*	*03/28/24 17:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 20:05	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-09 3-4'
Date Collected: 03/26/24 10:10
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-8
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*15 - 244*	*03/28/24 11:02*	*04/01/24 17:45*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 17:45	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 17:45	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 17:45	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 11:02	04/01/24 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 11:02*	*04/01/24 17:45*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 13:10	03/28/24 17:14	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*91*		*62 - 134*	*03/28/24 13:10*	*03/28/24 17:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**		60		mg/Kg		03/28/24 15:36	03/28/24 20:18	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-10 3-4'
Date Collected: 03/26/24 10:20
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-9
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 11:02*	*04/01/24 18:07*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 18:07	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 18:07	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 18:07	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 11:02	04/01/24 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 11:02*	*04/01/24 18:07*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5		mg/Kg		03/28/24 13:10	03/28/24 17:27	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*96*		*62 - 134*	*03/28/24 13:10*	*03/28/24 17:27*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 20:30	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: WS24-11 0-4'
Date Collected: 03/26/24 10:30
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-10
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		03/28/24 11:02	04/01/24 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 11:02*	*04/01/24 18:29*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 18:29	1
Ethylbenzene	ND		0.048		mg/Kg		03/28/24 11:02	04/01/24 18:29	1
Toluene	ND		0.048		mg/Kg		03/28/24 11:02	04/01/24 18:29	1
Xylenes, Total	ND		0.096		mg/Kg		03/28/24 11:02	04/01/24 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 11:02*	*04/01/24 18:29*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 13:10	03/28/24 17:40	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*	*03/28/24 13:10*	*03/28/24 17:40*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		59		mg/Kg		03/28/24 15:36	03/28/24 20:42	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-01 3'

Date Collected: 03/26/24 10:40
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-11

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 11:02	04/01/24 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*15 - 244*	*03/28/24 11:02*	*04/01/24 19:13*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 19:13	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 19:13	1
Toluene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 19:13	1
Xylenes, Total	ND		0.097		mg/Kg		03/28/24 11:02	04/01/24 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*39 - 146*	*03/28/24 11:02*	*04/01/24 19:13*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 13:10	03/28/24 17:52	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 13:10	03/28/24 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*	*03/28/24 13:10*	*03/28/24 17:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**		60		mg/Kg		03/28/24 15:36	03/28/24 20:55	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-02 3'
Date Collected: 03/26/24 10:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-12
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*03/28/24 11:02*	*04/01/24 19:34*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 19:34	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 19:34	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 19:34	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 11:02	04/01/24 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*03/28/24 11:02*	*04/01/24 19:34*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		03/28/24 13:10	03/28/24 18:05	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		03/28/24 13:10	03/28/24 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*97*		*62 - 134*	*03/28/24 13:10*	*03/28/24 18:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**220**		60		mg/Kg		03/28/24 15:36	03/28/24 21:07	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-03 3'

Date Collected: 03/26/24 11:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-13

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*15 - 244*	*03/28/24 11:02*	*04/01/24 19:56*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 19:56	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 19:56	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 19:56	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 11:02	04/01/24 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*03/28/24 11:02*	*04/01/24 19:56*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg		03/28/24 13:10	03/28/24 18:17	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		03/28/24 13:10	03/28/24 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*	*03/28/24 13:10*	*03/28/24 18:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**		60		mg/Kg		03/28/24 15:36	03/28/24 21:19	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-04 3'
Date Collected: 03/26/24 11:10
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-14
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		03/28/24 11:02	04/01/24 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*15 - 244*	*03/28/24 11:02*	*04/01/24 20:18*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 20:18	1
Ethylbenzene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 20:18	1
Toluene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 20:18	1
Xylenes, Total	ND		0.092		mg/Kg		03/28/24 11:02	04/01/24 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*03/28/24 11:02*	*04/01/24 20:18*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg		03/28/24 13:10	03/28/24 18:30	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		03/28/24 13:10	03/28/24 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*92*		*62 - 134*	*03/28/24 13:10*	*03/28/24 18:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 21:32	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-05 1'
Date Collected: 03/26/24 11:20
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-15
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 11:02	04/01/24 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*03/28/24 11:02*	*04/01/24 20:40*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 20:40	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 20:40	1
Toluene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 20:40	1
Xylenes, Total	ND		0.098		mg/Kg		03/28/24 11:02	04/01/24 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*03/28/24 11:02*	*04/01/24 20:40*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2		mg/Kg		03/28/24 13:10	03/28/24 18:43	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		03/28/24 13:10	03/28/24 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*	*03/28/24 13:10*	*03/28/24 18:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 22:09	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-06 1'
Date Collected: 03/26/24 11:30
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-16
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 11:02	04/01/24 21:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*03/28/24 11:02*	*04/01/24 21:02*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 11:02	04/01/24 21:02	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 21:02	1
Toluene	ND		0.047		mg/Kg		03/28/24 11:02	04/01/24 21:02	1
Xylenes, Total	ND		0.095		mg/Kg		03/28/24 11:02	04/01/24 21:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*03/28/24 11:02*	*04/01/24 21:02*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.7		mg/Kg		03/28/24 13:10	03/28/24 18:55	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		03/28/24 13:10	03/28/24 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*03/28/24 13:10*	*03/28/24 18:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**65**		60		mg/Kg		03/28/24 15:36	03/28/24 22:21	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-07 1'

Date Collected: 03/26/24 11:40
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-17

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		03/28/24 11:02	04/01/24 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*15 - 244*	*03/28/24 11:02*	*04/01/24 21:23*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 21:23	1
Ethylbenzene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 21:23	1
Toluene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 21:23	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 11:02	04/01/24 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 11:02*	*04/01/24 21:23*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0		mg/Kg		03/28/24 13:10	03/28/24 19:08	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		03/28/24 13:10	03/28/24 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*03/28/24 13:10*	*03/28/24 19:08*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		03/28/24 15:36	03/28/24 22:33	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-08 4'

Date Collected: 03/26/24 11:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-18

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 11:02	04/01/24 21:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*15 - 244*	*03/28/24 11:02*	*04/01/24 21:45*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 11:02	04/01/24 21:45	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 21:45	1
Toluene	ND		0.049		mg/Kg		03/28/24 11:02	04/01/24 21:45	1
Xylenes, Total	ND		0.098		mg/Kg		03/28/24 11:02	04/01/24 21:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*39 - 146*	*03/28/24 11:02*	*04/01/24 21:45*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		03/28/24 13:10	03/28/24 19:21	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		03/28/24 13:10	03/28/24 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*96*		*62 - 134*	*03/28/24 13:10*	*03/28/24 19:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1300**		61		mg/Kg		03/28/24 15:36	03/28/24 22:46	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-09 4'
Date Collected: 03/26/24 12:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-19
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		03/28/24 11:02	04/01/24 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*15 - 244*	*03/28/24 11:02*	*04/01/24 22:07*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 11:02	04/01/24 22:07	1
Ethylbenzene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 22:07	1
Toluene	ND		0.046		mg/Kg		03/28/24 11:02	04/01/24 22:07	1
Xylenes, Total	ND		0.092		mg/Kg		03/28/24 11:02	04/01/24 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*39 - 146*	*03/28/24 11:02*	*04/01/24 22:07*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		03/28/24 13:10	03/28/24 19:33	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		03/28/24 13:10	03/28/24 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*91*		*62 - 134*	*03/28/24 13:10*	*03/28/24 19:33*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1000**		60		mg/Kg		03/28/24 15:36	03/28/24 22:58	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-10 4'

Date Collected: 03/26/24 12:10
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-20

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 11:02	04/01/24 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*15 - 244*	*03/28/24 11:02*	*04/01/24 22:29*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 11:02	04/01/24 22:29	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 22:29	1
Toluene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 22:29	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 11:02	04/01/24 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 11:02*	*04/01/24 22:29*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9		mg/Kg		03/28/24 13:10	03/28/24 19:46	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		03/28/24 13:10	03/28/24 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*88*		*62 - 134*	*03/28/24 13:10*	*03/28/24 19:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1400**		59		mg/Kg		03/28/24 15:36	03/28/24 23:10	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-11 4'
Date Collected: 03/26/24 12:20
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-21
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 12:20	03/29/24 11:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 12:20*	*03/29/24 11:24*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 11:24	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 11:24	1
Toluene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 11:24	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 12:20	03/29/24 11:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 12:20*	*03/29/24 11:24*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2		mg/Kg		03/28/24 14:38	03/28/24 21:01	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		03/28/24 14:38	03/28/24 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*89*		*62 - 134*	*03/28/24 14:38*	*03/28/24 21:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1200**		60		mg/Kg		03/29/24 07:42	03/29/24 09:46	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-12 4'
Date Collected: 03/26/24 12:30
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-22
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 12:20	03/29/24 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*15 - 244*	*03/28/24 12:20*	*03/29/24 11:47*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 11:47	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 11:47	1
Toluene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 11:47	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 12:20	03/29/24 11:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 12:20*	*03/29/24 11:47*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 14:38	03/28/24 21:14	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 14:38	03/28/24 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*84*		*62 - 134*	*03/28/24 14:38*	*03/28/24 21:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**510**		60		mg/Kg		03/29/24 07:42	03/29/24 09:58	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-13 4'
Date Collected: 03/26/24 12:40
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-23
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		03/28/24 12:20	03/29/24 12:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 12:20*	*03/29/24 12:11*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 12:20	03/29/24 12:11	1
Ethylbenzene	ND		0.046		mg/Kg		03/28/24 12:20	03/29/24 12:11	1
Toluene	ND		0.046		mg/Kg		03/28/24 12:20	03/29/24 12:11	1
Xylenes, Total	ND		0.091		mg/Kg		03/28/24 12:20	03/29/24 12:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 12:20*	*03/29/24 12:11*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7		mg/Kg		03/28/24 14:38	03/28/24 21:26	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 14:38	03/28/24 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*88*		*62 - 134*	*03/28/24 14:38*	*03/28/24 21:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**850**		60		mg/Kg		03/29/24 07:42	03/29/24 10:10	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-14 4'
Date Collected: 03/26/24 12:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-24
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		03/28/24 12:20	03/29/24 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*15 - 244*	*03/28/24 12:20*	*03/29/24 12:34*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 12:20	03/29/24 12:34	1
Ethylbenzene	ND		0.048		mg/Kg		03/28/24 12:20	03/29/24 12:34	1
Toluene	ND		0.048		mg/Kg		03/28/24 12:20	03/29/24 12:34	1
Xylenes, Total	ND		0.095		mg/Kg		03/28/24 12:20	03/29/24 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*03/28/24 12:20*	*03/29/24 12:34*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		03/28/24 14:38	03/28/24 21:39	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		03/28/24 14:38	03/28/24 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*84*		*62 - 134*	*03/28/24 14:38*	*03/28/24 21:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**890**		60		mg/Kg		03/29/24 07:42	03/29/24 10:23	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-15 4'

Date Collected: 03/26/24 13:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-25

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 12:20	03/29/24 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*03/28/24 12:20*	*03/29/24 12:58*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 12:58	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 12:58	1
Toluene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 12:58	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 12:20	03/29/24 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*	*03/28/24 12:20*	*03/29/24 12:58*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9		mg/Kg		03/28/24 14:38	03/28/24 21:51	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		03/28/24 14:38	03/28/24 21:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*86*		*62 - 134*	*03/28/24 14:38*	*03/28/24 21:51*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**460**		60		mg/Kg		03/29/24 07:42	03/29/24 10:35	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-16 4'
Date Collected: 03/26/24 13:10
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-26
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		03/28/24 12:20	03/29/24 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 12:20*	*03/29/24 13:22*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 12:20	03/29/24 13:22	1
Ethylbenzene	ND		0.048		mg/Kg		03/28/24 12:20	03/29/24 13:22	1
Toluene	ND		0.048		mg/Kg		03/28/24 12:20	03/29/24 13:22	1
Xylenes, Total	ND		0.097		mg/Kg		03/28/24 12:20	03/29/24 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*39 - 146*	*03/28/24 12:20*	*03/29/24 13:22*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		03/28/24 14:38	03/28/24 22:04	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		03/28/24 14:38	03/28/24 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*88*		*62 - 134*	*03/28/24 14:38*	*03/28/24 22:04*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1500**		60		mg/Kg		03/29/24 07:42	03/29/24 10:47	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-17 3'
Date Collected: 03/26/24 13:20
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-27
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 12:20	03/29/24 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*15 - 244*	*03/28/24 12:20*	*03/29/24 13:45*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 12:20	03/29/24 13:45	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 12:20	03/29/24 13:45	1
Toluene	ND		0.047		mg/Kg		03/28/24 12:20	03/29/24 13:45	1
Xylenes, Total	ND		0.093		mg/Kg		03/28/24 12:20	03/29/24 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 12:20*	*03/29/24 13:45*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7		mg/Kg		03/28/24 14:38	03/28/24 22:16	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 14:38	03/28/24 22:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*87*		*62 - 134*	*03/28/24 14:38*	*03/28/24 22:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**210**		60		mg/Kg		03/29/24 07:42	03/29/24 11:24	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-18 3'
Date Collected: 03/26/24 13:30
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-28
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7		mg/Kg		03/28/24 12:20	03/29/24 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 12:20*	*03/29/24 14:09*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		03/28/24 12:20	03/29/24 14:09	1
Ethylbenzene	ND		0.047		mg/Kg		03/28/24 12:20	03/29/24 14:09	1
Toluene	ND		0.047		mg/Kg		03/28/24 12:20	03/29/24 14:09	1
Xylenes, Total	ND		0.094		mg/Kg		03/28/24 12:20	03/29/24 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 12:20*	*03/29/24 14:09*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		03/28/24 14:38	03/28/24 22:29	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		03/28/24 14:38	03/28/24 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*88*		*62 - 134*	*03/28/24 14:38*	*03/28/24 22:29*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**180**		60		mg/Kg		03/29/24 07:42	03/29/24 11:37	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-19 3'
Date Collected: 03/26/24 13:40
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-29
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 12:20	03/29/24 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*15 - 244*	*03/28/24 12:20*	*03/29/24 14:32*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 14:32	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 14:32	1
Toluene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 14:32	1
Xylenes, Total	ND		0.098		mg/Kg		03/28/24 12:20	03/29/24 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*39 - 146*	*03/28/24 12:20*	*03/29/24 14:32*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0		mg/Kg		03/28/24 14:38	03/28/24 22:41	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		03/28/24 14:38	03/28/24 22:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*91*		*62 - 134*	*03/28/24 14:38*	*03/28/24 22:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**200**		60		mg/Kg		03/29/24 07:42	03/29/24 11:49	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-20 3'
Date Collected: 03/26/24 13:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-30
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		03/28/24 12:20	03/29/24 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*15 - 244*	*03/28/24 12:20*	*03/29/24 14:56*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		03/28/24 12:20	03/29/24 14:56	1
Ethylbenzene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 14:56	1
Toluene	ND		0.049		mg/Kg		03/28/24 12:20	03/29/24 14:56	1
Xylenes, Total	ND		0.097		mg/Kg		03/28/24 12:20	03/29/24 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*39 - 146*	*03/28/24 12:20*	*03/29/24 14:56*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg		03/28/24 14:38	03/28/24 22:54	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		03/28/24 14:38	03/28/24 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*96*		*62 - 134*	*03/28/24 14:38*	*03/28/24 22:54*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**180**		59		mg/Kg		03/29/24 07:42	03/29/24 12:02	20

Client Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-21 3'
Date Collected: 03/26/24 14:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-31
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 12:20	03/29/24 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*03/28/24 12:20*	*03/29/24 15:43*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 15:43	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 15:43	1
Toluene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 15:43	1
Xylenes, Total	ND		0.099		mg/Kg		03/28/24 12:20	03/29/24 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*39 - 146*	*03/28/24 12:20*	*03/29/24 15:43*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		03/28/24 14:38	03/28/24 23:06	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		03/28/24 14:38	03/28/24 23:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*92*		*62 - 134*	*03/28/24 14:38*	*03/28/24 23:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**150**		60		mg/Kg		03/29/24 07:42	03/29/24 12:39	20

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-2432/1-A
Matrix: Solid
Analysis Batch: 2653

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2432

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 11:02	04/01/24 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*15 - 244*	*03/28/24 11:02*	*04/01/24 13:23*	*1*

Lab Sample ID: LCS 885-2432/2-A
Matrix: Solid
Analysis Batch: 2653

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2432

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	26.5		mg/Kg		106	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*223*		*15 - 244*

Lab Sample ID: 885-1917-1 MS
Matrix: Solid
Analysis Batch: 2653

Client Sample ID: WS24-01 0-3'
Prep Type: Total/NA
Prep Batch: 2432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]	ND		24.3	24.8		mg/Kg		102	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*222*		*15 - 244*

Lab Sample ID: 885-1917-1 MSD
Matrix: Solid
Analysis Batch: 2653

Client Sample ID: WS24-01 0-3'
Prep Type: Total/NA
Prep Batch: 2432

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	ND		24.4	24.8		mg/Kg		102	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*227*		*15 - 244*

Lab Sample ID: MB 885-2445/1-A
Matrix: Solid
Analysis Batch: 2551

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2445

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		03/28/24 12:20	03/29/24 11:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*15 - 244*	*03/28/24 12:20*	*03/29/24 11:00*	*1*

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8015D - Gasoline Range Organics (GRO) (GC) (Continued)

Lab Sample ID: LCS 885-2445/2-A
Matrix: Solid
Analysis Batch: 2551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2445

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	25.1		mg/Kg		100	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*		*15 - 244*

Lab Sample ID: 885-1917-21 MS
Matrix: Solid
Analysis Batch: 2551

Client Sample ID: BS24-11 4'
Prep Type: Total/NA
Prep Batch: 2445

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]	ND		25.0	28.9		mg/Kg		116	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*226*		*15 - 244*

Lab Sample ID: 885-1917-21 MSD
Matrix: Solid
Analysis Batch: 2551

Client Sample ID: BS24-11 4'
Prep Type: Total/NA
Prep Batch: 2445

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	ND		24.8	28.0		mg/Kg		113	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*225*		*15 - 244*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-2432/1-A
Matrix: Solid
Analysis Batch: 2654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2432

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 11:02	04/01/24 13:23	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 13:23	1
Toluene	ND		0.050		mg/Kg		03/28/24 11:02	04/01/24 13:23	1
Xylenes, Total	ND		0.10		mg/Kg		03/28/24 11:02	04/01/24 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*03/28/24 11:02*	*04/01/24 13:23*	*1*

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 885-2432/3-A
Matrix: Solid
Analysis Batch: 2654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2432

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.930		mg/Kg		93	70 - 130		
Ethylbenzene			1.00	0.940		mg/Kg		94	70 - 130		
m,p-Xylene			2.00	1.88		mg/Kg		94	70 - 130		
o-Xylene			1.00	0.934		mg/Kg		93	70 - 130		
Toluene			1.00	0.929		mg/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*39 - 146*

Lab Sample ID: 885-1917-2 MS
Matrix: Solid
Analysis Batch: 2654

Client Sample ID: WS24-02 0-3'
Prep Type: Total/NA
Prep Batch: 2432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		0.988	0.894		mg/Kg		91	70 - 130		
Ethylbenzene	ND		0.988	0.925		mg/Kg		94	70 - 130		
m,p-Xylene	ND		1.98	1.85		mg/Kg		94	70 - 130		
o-Xylene	ND		0.988	0.920		mg/Kg		93	70 - 130		
Toluene	ND		0.988	0.918		mg/Kg		93	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*

Lab Sample ID: 885-1917-2 MSD
Matrix: Solid
Analysis Batch: 2654

Client Sample ID: WS24-02 0-3'
Prep Type: Total/NA
Prep Batch: 2432

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.988	0.920		mg/Kg		93	70 - 130	3	20
Ethylbenzene	ND		0.988	0.923		mg/Kg		93	70 - 130	0	20
m,p-Xylene	ND		1.98	1.84		mg/Kg		93	70 - 130	0	20
o-Xylene	ND		0.988	0.920		mg/Kg		93	70 - 130	0	20
Toluene	ND		0.988	0.913		mg/Kg		92	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*

Lab Sample ID: MB 885-2445/1-A
Matrix: Solid
Analysis Batch: 2552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2445

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		03/28/24 12:20	03/29/24 11:00	1
Ethylbenzene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 11:00	1
Toluene	ND		0.050		mg/Kg		03/28/24 12:20	03/29/24 11:00	1
Xylenes, Total	ND		0.10		mg/Kg		03/28/24 12:20	03/29/24 11:00	1

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-2445/1-A
Matrix: Solid
Analysis Batch: 2552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2445

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		39 - 146	03/28/24 12:20	03/29/24 11:00	1

Lab Sample ID: LCS 885-2445/3-A
Matrix: Solid
Analysis Batch: 2552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2445

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.851		mg/Kg		85	70 - 130		
Ethylbenzene			1.00	0.875		mg/Kg		88	70 - 130		
m,p-Xylene			2.00	1.80		mg/Kg		90	70 - 130		
o-Xylene			1.00	0.872		mg/Kg		87	70 - 130		
Toluene			1.00	0.876		mg/Kg		88	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		39 - 146

Lab Sample ID: 885-1917-22 MS
Matrix: Solid
Analysis Batch: 2552

Client Sample ID: BS24-12 4'
Prep Type: Total/NA
Prep Batch: 2445

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		0.999	0.892		mg/Kg		89	70 - 130		
Ethylbenzene	ND		0.999	0.928		mg/Kg		93	70 - 130		
m,p-Xylene	ND		2.00	1.88		mg/Kg		94	70 - 130		
o-Xylene	ND		0.999	0.917		mg/Kg		92	70 - 130		
Toluene	ND		0.999	0.907		mg/Kg		91	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		39 - 146

Lab Sample ID: 885-1917-22 MSD
Matrix: Solid
Analysis Batch: 2552

Client Sample ID: BS24-12 4'
Prep Type: Total/NA
Prep Batch: 2445

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.995	0.930		mg/Kg		93	70 - 130	4	20
Ethylbenzene	ND		0.995	0.965		mg/Kg		97	70 - 130	4	20
m,p-Xylene	ND		1.99	1.96		mg/Kg		99	70 - 130	5	20
o-Xylene	ND		0.995	0.964		mg/Kg		97	70 - 130	5	20
Toluene	ND		0.995	0.941		mg/Kg		95	70 - 130	4	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		39 - 146

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-2451/1-A
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2451

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		03/28/24 13:10	03/28/24 15:22	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		03/28/24 13:10	03/28/24 15:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*03/28/24 13:10*	*03/28/24 15:22*	*1*

Lab Sample ID: LCS 885-2451/2-A
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2451

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	45.0		mg/Kg		90	60 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*

Lab Sample ID: 885-1917-20 MS
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: BS24-10 4'
Prep Type: Total/NA
Prep Batch: 2451

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]	ND		45.5	39.2		mg/Kg		86	44 - 136		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*85*		*62 - 134*

Lab Sample ID: 885-1917-20 MSD
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: BS24-10 4'
Prep Type: Total/NA
Prep Batch: 2451

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	ND		44.4	38.8		mg/Kg		87	44 - 136	1	32

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*81*		*62 - 134*

Lab Sample ID: MB 885-2460/1-A
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2460

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		03/28/24 14:38	03/28/24 20:36	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		03/28/24 14:38	03/28/24 20:36	1

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 885-2460/1-A
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2460

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	93		62 - 134	03/28/24 14:38	03/28/24 20:36	1

Lab Sample ID: LCS 885-2460/2-A
Matrix: Solid
Analysis Batch: 2484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2460

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	41.2		mg/Kg		82	60 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Di-n-octyl phthalate (Surr)	83		62 - 134

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-2465/1-A
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2465

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/Kg		03/28/24 15:36	03/28/24 17:12	1

Lab Sample ID: LCS 885-2465/2-A
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2465

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			30.0	27.3		mg/Kg		91	90 - 110		

Lab Sample ID: 885-1917-1 MS
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: WS24-01 0-3'
Prep Type: Total/NA
Prep Batch: 2465

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	ND		29.8	73.3		mg/Kg		NC	50 - 150		

Lab Sample ID: 885-1917-1 MSD
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: WS24-01 0-3'
Prep Type: Total/NA
Prep Batch: 2465

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND		29.8	66.1		mg/Kg		NC	50 - 150	10	20

Lab Sample ID: 885-1917-2 MS
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: WS24-02 0-3'
Prep Type: Total/NA
Prep Batch: 2465

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	ND		29.7	67.9		mg/Kg		NC	50 - 150		

QC Sample Results

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 885-1917-2 MSD
Matrix: Solid
Analysis Batch: 2473

Client Sample ID: WS24-02 0-3'
Prep Type: Total/NA
Prep Batch: 2465

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND		29.8	74.0		mg/Kg		NC	50 - 150	9	20

Lab Sample ID: MB 885-2479/1-A
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2479

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/Kg		03/29/24 07:42	03/29/24 08:56	1

Lab Sample ID: LCS 885-2479/2-A
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2479

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			30.0	27.6		mg/Kg		92	90 - 110		

Lab Sample ID: 885-1917-30 MS
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: BS24-20 3'
Prep Type: Total/NA
Prep Batch: 2479

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	180		30.1	208	4	mg/Kg		98	50 - 150		

Lab Sample ID: 885-1917-30 MSD
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: BS24-20 3'
Prep Type: Total/NA
Prep Batch: 2479

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	180		30.0	207	4	mg/Kg		95	50 - 150	0	20

Lab Sample ID: 885-1917-31 MS
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: BS24-21 3'
Prep Type: Total/NA
Prep Batch: 2479

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	150		30.1	176	4	mg/Kg		100	50 - 150		

Lab Sample ID: 885-1917-31 MSD
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: BS24-21 3'
Prep Type: Total/NA
Prep Batch: 2479

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	150		29.9	180	4	mg/Kg		114	50 - 150	2	20

Lab Sample ID: MRL 885-2553/29
Matrix: Solid
Analysis Batch: 2553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			0.500	0.520		mg/L		104	50 - 150		

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

GC VOA

Prep Batch: 2432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	5030C	
885-1917-2	WS24-02 0-3'	Total/NA	Solid	5030C	
885-1917-3	WS24-03 0-1"	Total/NA	Solid	5030C	
885-1917-4	WS24-04 0-4'	Total/NA	Solid	5030C	
885-1917-5	WS24-05 0-4"	Total/NA	Solid	5030C	
885-1917-6	WS24-07 0-3'	Total/NA	Solid	5030C	
885-1917-7	WS24-08 1-3'	Total/NA	Solid	5030C	
885-1917-8	WS24-09 3-4'	Total/NA	Solid	5030C	
885-1917-9	WS24-10 3-4'	Total/NA	Solid	5030C	
885-1917-10	WS24-11 0-4'	Total/NA	Solid	5030C	
885-1917-11	BS24-01 3'	Total/NA	Solid	5030C	
885-1917-12	BS24-02 3'	Total/NA	Solid	5030C	
885-1917-13	BS24-03 3'	Total/NA	Solid	5030C	
885-1917-14	BS24-04 3'	Total/NA	Solid	5030C	
885-1917-15	BS24-05 1'	Total/NA	Solid	5030C	
885-1917-16	BS24-06 1'	Total/NA	Solid	5030C	
885-1917-17	BS24-07 1'	Total/NA	Solid	5030C	
885-1917-18	BS24-08 4'	Total/NA	Solid	5030C	
885-1917-19	BS24-09 4'	Total/NA	Solid	5030C	
885-1917-20	BS24-10 4'	Total/NA	Solid	5030C	
MB 885-2432/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-2432/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-2432/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-1917-1 MS	WS24-01 0-3'	Total/NA	Solid	5030C	
885-1917-1 MSD	WS24-01 0-3'	Total/NA	Solid	5030C	
885-1917-2 MS	WS24-02 0-3'	Total/NA	Solid	5030C	
885-1917-2 MSD	WS24-02 0-3'	Total/NA	Solid	5030C	

Prep Batch: 2445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	5030C	
885-1917-22	BS24-12 4'	Total/NA	Solid	5030C	
885-1917-23	BS24-13 4'	Total/NA	Solid	5030C	
885-1917-24	BS24-14 4'	Total/NA	Solid	5030C	
885-1917-25	BS24-15 4'	Total/NA	Solid	5030C	
885-1917-26	BS24-16 4'	Total/NA	Solid	5030C	
885-1917-27	BS24-17 3'	Total/NA	Solid	5030C	
885-1917-28	BS24-18 3'	Total/NA	Solid	5030C	
885-1917-29	BS24-19 3'	Total/NA	Solid	5030C	
885-1917-30	BS24-20 3'	Total/NA	Solid	5030C	
885-1917-31	BS24-21 3'	Total/NA	Solid	5030C	
MB 885-2445/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-2445/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-2445/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-1917-21 MS	BS24-11 4'	Total/NA	Solid	5030C	
885-1917-21 MSD	BS24-11 4'	Total/NA	Solid	5030C	
885-1917-22 MS	BS24-12 4'	Total/NA	Solid	5030C	
885-1917-22 MSD	BS24-12 4'	Total/NA	Solid	5030C	

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

GC VOA

Analysis Batch: 2551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	8015D	2445
885-1917-22	BS24-12 4'	Total/NA	Solid	8015D	2445
885-1917-23	BS24-13 4'	Total/NA	Solid	8015D	2445
885-1917-24	BS24-14 4'	Total/NA	Solid	8015D	2445
885-1917-25	BS24-15 4'	Total/NA	Solid	8015D	2445
885-1917-26	BS24-16 4'	Total/NA	Solid	8015D	2445
885-1917-27	BS24-17 3'	Total/NA	Solid	8015D	2445
885-1917-28	BS24-18 3'	Total/NA	Solid	8015D	2445
885-1917-29	BS24-19 3'	Total/NA	Solid	8015D	2445
885-1917-30	BS24-20 3'	Total/NA	Solid	8015D	2445
885-1917-31	BS24-21 3'	Total/NA	Solid	8015D	2445
MB 885-2445/1-A	Method Blank	Total/NA	Solid	8015D	2445
LCS 885-2445/2-A	Lab Control Sample	Total/NA	Solid	8015D	2445
885-1917-21 MS	BS24-11 4'	Total/NA	Solid	8015D	2445
885-1917-21 MSD	BS24-11 4'	Total/NA	Solid	8015D	2445

Analysis Batch: 2552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	8021B	2445
885-1917-22	BS24-12 4'	Total/NA	Solid	8021B	2445
885-1917-23	BS24-13 4'	Total/NA	Solid	8021B	2445
885-1917-24	BS24-14 4'	Total/NA	Solid	8021B	2445
885-1917-25	BS24-15 4'	Total/NA	Solid	8021B	2445
885-1917-26	BS24-16 4'	Total/NA	Solid	8021B	2445
885-1917-27	BS24-17 3'	Total/NA	Solid	8021B	2445
885-1917-28	BS24-18 3'	Total/NA	Solid	8021B	2445
885-1917-29	BS24-19 3'	Total/NA	Solid	8021B	2445
885-1917-30	BS24-20 3'	Total/NA	Solid	8021B	2445
885-1917-31	BS24-21 3'	Total/NA	Solid	8021B	2445
MB 885-2445/1-A	Method Blank	Total/NA	Solid	8021B	2445
LCS 885-2445/3-A	Lab Control Sample	Total/NA	Solid	8021B	2445
885-1917-22 MS	BS24-12 4'	Total/NA	Solid	8021B	2445
885-1917-22 MSD	BS24-12 4'	Total/NA	Solid	8021B	2445

Analysis Batch: 2653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	8015D	2432
885-1917-2	WS24-02 0-3'	Total/NA	Solid	8015D	2432
885-1917-3	WS24-03 0-1"	Total/NA	Solid	8015D	2432
885-1917-4	WS24-04 0-4'	Total/NA	Solid	8015D	2432
885-1917-5	WS24-05 0-4"	Total/NA	Solid	8015D	2432
885-1917-6	WS24-07 0-3'	Total/NA	Solid	8015D	2432
885-1917-7	WS24-08 1-3'	Total/NA	Solid	8015D	2432
885-1917-8	WS24-09 3-4'	Total/NA	Solid	8015D	2432
885-1917-9	WS24-10 3-4'	Total/NA	Solid	8015D	2432
885-1917-10	WS24-11 0-4'	Total/NA	Solid	8015D	2432
885-1917-11	BS24-01 3'	Total/NA	Solid	8015D	2432
885-1917-12	BS24-02 3'	Total/NA	Solid	8015D	2432
885-1917-13	BS24-03 3'	Total/NA	Solid	8015D	2432
885-1917-14	BS24-04 3'	Total/NA	Solid	8015D	2432
885-1917-15	BS24-05 1'	Total/NA	Solid	8015D	2432

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

GC VOA (Continued)

Analysis Batch: 2653 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-16	BS24-06 1'	Total/NA	Solid	8015D	2432
885-1917-17	BS24-07 1'	Total/NA	Solid	8015D	2432
885-1917-18	BS24-08 4'	Total/NA	Solid	8015D	2432
885-1917-19	BS24-09 4'	Total/NA	Solid	8015D	2432
885-1917-20	BS24-10 4'	Total/NA	Solid	8015D	2432
MB 885-2432/1-A	Method Blank	Total/NA	Solid	8015D	2432
LCS 885-2432/2-A	Lab Control Sample	Total/NA	Solid	8015D	2432
885-1917-1 MS	WS24-01 0-3'	Total/NA	Solid	8015D	2432
885-1917-1 MSD	WS24-01 0-3'	Total/NA	Solid	8015D	2432

Analysis Batch: 2654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	8021B	2432
885-1917-2	WS24-02 0-3'	Total/NA	Solid	8021B	2432
885-1917-3	WS24-03 0-1"	Total/NA	Solid	8021B	2432
885-1917-4	WS24-04 0-4'	Total/NA	Solid	8021B	2432
885-1917-5	WS24-05 0-4"	Total/NA	Solid	8021B	2432
885-1917-6	WS24-07 0-3'	Total/NA	Solid	8021B	2432
885-1917-7	WS24-08 1-3'	Total/NA	Solid	8021B	2432
885-1917-8	WS24-09 3-4'	Total/NA	Solid	8021B	2432
885-1917-9	WS24-10 3-4'	Total/NA	Solid	8021B	2432
885-1917-10	WS24-11 0-4'	Total/NA	Solid	8021B	2432
885-1917-11	BS24-01 3'	Total/NA	Solid	8021B	2432
885-1917-12	BS24-02 3'	Total/NA	Solid	8021B	2432
885-1917-13	BS24-03 3'	Total/NA	Solid	8021B	2432
885-1917-14	BS24-04 3'	Total/NA	Solid	8021B	2432
885-1917-15	BS24-05 1'	Total/NA	Solid	8021B	2432
885-1917-16	BS24-06 1'	Total/NA	Solid	8021B	2432
885-1917-17	BS24-07 1'	Total/NA	Solid	8021B	2432
885-1917-18	BS24-08 4'	Total/NA	Solid	8021B	2432
885-1917-19	BS24-09 4'	Total/NA	Solid	8021B	2432
885-1917-20	BS24-10 4'	Total/NA	Solid	8021B	2432
MB 885-2432/1-A	Method Blank	Total/NA	Solid	8021B	2432
LCS 885-2432/3-A	Lab Control Sample	Total/NA	Solid	8021B	2432
885-1917-2 MS	WS24-02 0-3'	Total/NA	Solid	8021B	2432
885-1917-2 MSD	WS24-02 0-3'	Total/NA	Solid	8021B	2432

GC Semi VOA

Prep Batch: 2451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	SHAKE	
885-1917-2	WS24-02 0-3'	Total/NA	Solid	SHAKE	
885-1917-3	WS24-03 0-1"	Total/NA	Solid	SHAKE	
885-1917-4	WS24-04 0-4'	Total/NA	Solid	SHAKE	
885-1917-5	WS24-05 0-4"	Total/NA	Solid	SHAKE	
885-1917-6	WS24-07 0-3'	Total/NA	Solid	SHAKE	
885-1917-7	WS24-08 1-3'	Total/NA	Solid	SHAKE	
885-1917-8	WS24-09 3-4'	Total/NA	Solid	SHAKE	
885-1917-9	WS24-10 3-4'	Total/NA	Solid	SHAKE	
885-1917-10	WS24-11 0-4'	Total/NA	Solid	SHAKE	

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

GC Semi VOA (Continued)

Prep Batch: 2451 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-11	BS24-01 3'	Total/NA	Solid	SHAKE	
885-1917-12	BS24-02 3'	Total/NA	Solid	SHAKE	
885-1917-13	BS24-03 3'	Total/NA	Solid	SHAKE	
885-1917-14	BS24-04 3'	Total/NA	Solid	SHAKE	
885-1917-15	BS24-05 1'	Total/NA	Solid	SHAKE	
885-1917-16	BS24-06 1'	Total/NA	Solid	SHAKE	
885-1917-17	BS24-07 1'	Total/NA	Solid	SHAKE	
885-1917-18	BS24-08 4'	Total/NA	Solid	SHAKE	
885-1917-19	BS24-09 4'	Total/NA	Solid	SHAKE	
885-1917-20	BS24-10 4'	Total/NA	Solid	SHAKE	
MB 885-2451/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-2451/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-1917-20 MS	BS24-10 4'	Total/NA	Solid	SHAKE	
885-1917-20 MSD	BS24-10 4'	Total/NA	Solid	SHAKE	

Prep Batch: 2460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	SHAKE	
885-1917-22	BS24-12 4'	Total/NA	Solid	SHAKE	
885-1917-23	BS24-13 4'	Total/NA	Solid	SHAKE	
885-1917-24	BS24-14 4'	Total/NA	Solid	SHAKE	
885-1917-25	BS24-15 4'	Total/NA	Solid	SHAKE	
885-1917-26	BS24-16 4'	Total/NA	Solid	SHAKE	
885-1917-27	BS24-17 3'	Total/NA	Solid	SHAKE	
885-1917-28	BS24-18 3'	Total/NA	Solid	SHAKE	
885-1917-29	BS24-19 3'	Total/NA	Solid	SHAKE	
885-1917-30	BS24-20 3'	Total/NA	Solid	SHAKE	
885-1917-31	BS24-21 3'	Total/NA	Solid	SHAKE	
MB 885-2460/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-2460/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 2484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	8015D	2451
885-1917-2	WS24-02 0-3'	Total/NA	Solid	8015D	2451
885-1917-3	WS24-03 0-1"	Total/NA	Solid	8015D	2451
885-1917-4	WS24-04 0-4'	Total/NA	Solid	8015D	2451
885-1917-5	WS24-05 0-4"	Total/NA	Solid	8015D	2451
885-1917-6	WS24-07 0-3'	Total/NA	Solid	8015D	2451
885-1917-7	WS24-08 1-3'	Total/NA	Solid	8015D	2451
885-1917-8	WS24-09 3-4'	Total/NA	Solid	8015D	2451
885-1917-9	WS24-10 3-4'	Total/NA	Solid	8015D	2451
885-1917-10	WS24-11 0-4'	Total/NA	Solid	8015D	2451
885-1917-11	BS24-01 3'	Total/NA	Solid	8015D	2451
885-1917-12	BS24-02 3'	Total/NA	Solid	8015D	2451
885-1917-13	BS24-03 3'	Total/NA	Solid	8015D	2451
885-1917-14	BS24-04 3'	Total/NA	Solid	8015D	2451
885-1917-15	BS24-05 1'	Total/NA	Solid	8015D	2451
885-1917-16	BS24-06 1'	Total/NA	Solid	8015D	2451
885-1917-17	BS24-07 1'	Total/NA	Solid	8015D	2451
885-1917-18	BS24-08 4'	Total/NA	Solid	8015D	2451

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

GC Semi VOA (Continued)

Analysis Batch: 2484 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-19	BS24-09 4'	Total/NA	Solid	8015D	2451
885-1917-20	BS24-10 4'	Total/NA	Solid	8015D	2451
885-1917-21	BS24-11 4'	Total/NA	Solid	8015D	2460
885-1917-22	BS24-12 4'	Total/NA	Solid	8015D	2460
885-1917-23	BS24-13 4'	Total/NA	Solid	8015D	2460
885-1917-24	BS24-14 4'	Total/NA	Solid	8015D	2460
885-1917-25	BS24-15 4'	Total/NA	Solid	8015D	2460
885-1917-26	BS24-16 4'	Total/NA	Solid	8015D	2460
885-1917-27	BS24-17 3'	Total/NA	Solid	8015D	2460
885-1917-28	BS24-18 3'	Total/NA	Solid	8015D	2460
885-1917-29	BS24-19 3'	Total/NA	Solid	8015D	2460
885-1917-30	BS24-20 3'	Total/NA	Solid	8015D	2460
885-1917-31	BS24-21 3'	Total/NA	Solid	8015D	2460
MB 885-2451/1-A	Method Blank	Total/NA	Solid	8015D	2451
MB 885-2460/1-A	Method Blank	Total/NA	Solid	8015D	2460
LCS 885-2451/2-A	Lab Control Sample	Total/NA	Solid	8015D	2451
LCS 885-2460/2-A	Lab Control Sample	Total/NA	Solid	8015D	2460
885-1917-20 MS	BS24-10 4'	Total/NA	Solid	8015D	2451
885-1917-20 MSD	BS24-10 4'	Total/NA	Solid	8015D	2451

HPLC/IC

Prep Batch: 2465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	300_Prep	
885-1917-2	WS24-02 0-3'	Total/NA	Solid	300_Prep	
885-1917-3	WS24-03 0-1"	Total/NA	Solid	300_Prep	
885-1917-4	WS24-04 0-4'	Total/NA	Solid	300_Prep	
885-1917-5	WS24-05 0-4"	Total/NA	Solid	300_Prep	
885-1917-6	WS24-07 0-3'	Total/NA	Solid	300_Prep	
885-1917-7	WS24-08 1-3'	Total/NA	Solid	300_Prep	
885-1917-8	WS24-09 3-4'	Total/NA	Solid	300_Prep	
885-1917-9	WS24-10 3-4'	Total/NA	Solid	300_Prep	
885-1917-10	WS24-11 0-4'	Total/NA	Solid	300_Prep	
885-1917-11	BS24-01 3'	Total/NA	Solid	300_Prep	
885-1917-12	BS24-02 3'	Total/NA	Solid	300_Prep	
885-1917-13	BS24-03 3'	Total/NA	Solid	300_Prep	
885-1917-14	BS24-04 3'	Total/NA	Solid	300_Prep	
885-1917-15	BS24-05 1'	Total/NA	Solid	300_Prep	
885-1917-16	BS24-06 1'	Total/NA	Solid	300_Prep	
885-1917-17	BS24-07 1'	Total/NA	Solid	300_Prep	
885-1917-18	BS24-08 4'	Total/NA	Solid	300_Prep	
885-1917-19	BS24-09 4'	Total/NA	Solid	300_Prep	
885-1917-20	BS24-10 4'	Total/NA	Solid	300_Prep	
MB 885-2465/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-2465/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	
885-1917-1 MS	WS24-01 0-3'	Total/NA	Solid	300_Prep	
885-1917-1 MSD	WS24-01 0-3'	Total/NA	Solid	300_Prep	
885-1917-2 MS	WS24-02 0-3'	Total/NA	Solid	300_Prep	
885-1917-2 MSD	WS24-02 0-3'	Total/NA	Solid	300_Prep	

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

HPLC/IC

Analysis Batch: 2473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-1	WS24-01 0-3'	Total/NA	Solid	300.0	2465
885-1917-2	WS24-02 0-3'	Total/NA	Solid	300.0	2465
885-1917-3	WS24-03 0-1"	Total/NA	Solid	300.0	2465
885-1917-4	WS24-04 0-4'	Total/NA	Solid	300.0	2465
885-1917-5	WS24-05 0-4"	Total/NA	Solid	300.0	2465
885-1917-6	WS24-07 0-3'	Total/NA	Solid	300.0	2465
885-1917-7	WS24-08 1-3'	Total/NA	Solid	300.0	2465
885-1917-8	WS24-09 3-4'	Total/NA	Solid	300.0	2465
885-1917-9	WS24-10 3-4'	Total/NA	Solid	300.0	2465
885-1917-10	WS24-11 0-4'	Total/NA	Solid	300.0	2465
885-1917-11	BS24-01 3'	Total/NA	Solid	300.0	2465
885-1917-12	BS24-02 3'	Total/NA	Solid	300.0	2465
885-1917-13	BS24-03 3'	Total/NA	Solid	300.0	2465
885-1917-14	BS24-04 3'	Total/NA	Solid	300.0	2465
885-1917-15	BS24-05 1'	Total/NA	Solid	300.0	2465
885-1917-16	BS24-06 1'	Total/NA	Solid	300.0	2465
885-1917-17	BS24-07 1'	Total/NA	Solid	300.0	2465
885-1917-18	BS24-08 4'	Total/NA	Solid	300.0	2465
885-1917-19	BS24-09 4'	Total/NA	Solid	300.0	2465
885-1917-20	BS24-10 4'	Total/NA	Solid	300.0	2465
MB 885-2465/1-A	Method Blank	Total/NA	Solid	300.0	2465
LCS 885-2465/2-A	Lab Control Sample	Total/NA	Solid	300.0	2465
885-1917-1 MS	WS24-01 0-3'	Total/NA	Solid	300.0	2465
885-1917-1 MSD	WS24-01 0-3'	Total/NA	Solid	300.0	2465
885-1917-2 MS	WS24-02 0-3'	Total/NA	Solid	300.0	2465
885-1917-2 MSD	WS24-02 0-3'	Total/NA	Solid	300.0	2465

Prep Batch: 2479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	300_Prep	
885-1917-22	BS24-12 4'	Total/NA	Solid	300_Prep	
885-1917-23	BS24-13 4'	Total/NA	Solid	300_Prep	
885-1917-24	BS24-14 4'	Total/NA	Solid	300_Prep	
885-1917-25	BS24-15 4'	Total/NA	Solid	300_Prep	
885-1917-26	BS24-16 4'	Total/NA	Solid	300_Prep	
885-1917-27	BS24-17 3'	Total/NA	Solid	300_Prep	
885-1917-28	BS24-18 3'	Total/NA	Solid	300_Prep	
885-1917-29	BS24-19 3'	Total/NA	Solid	300_Prep	
885-1917-30	BS24-20 3'	Total/NA	Solid	300_Prep	
885-1917-31	BS24-21 3'	Total/NA	Solid	300_Prep	
MB 885-2479/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-2479/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	
885-1917-30 MS	BS24-20 3'	Total/NA	Solid	300_Prep	
885-1917-30 MSD	BS24-20 3'	Total/NA	Solid	300_Prep	
885-1917-31 MS	BS24-21 3'	Total/NA	Solid	300_Prep	
885-1917-31 MSD	BS24-21 3'	Total/NA	Solid	300_Prep	

Analysis Batch: 2553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-21	BS24-11 4'	Total/NA	Solid	300.0	2479
885-1917-22	BS24-12 4'	Total/NA	Solid	300.0	2479

QC Association Summary

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

HPLC/IC (Continued)

Analysis Batch: 2553 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-1917-23	BS24-13 4'	Total/NA	Solid	300.0	2479
885-1917-24	BS24-14 4'	Total/NA	Solid	300.0	2479
885-1917-25	BS24-15 4'	Total/NA	Solid	300.0	2479
885-1917-26	BS24-16 4'	Total/NA	Solid	300.0	2479
885-1917-27	BS24-17 3'	Total/NA	Solid	300.0	2479
885-1917-28	BS24-18 3'	Total/NA	Solid	300.0	2479
885-1917-29	BS24-19 3'	Total/NA	Solid	300.0	2479
885-1917-30	BS24-20 3'	Total/NA	Solid	300.0	2479
885-1917-31	BS24-21 3'	Total/NA	Solid	300.0	2479
MB 885-2479/1-A	Method Blank	Total/NA	Solid	300.0	2479
LCS 885-2479/2-A	Lab Control Sample	Total/NA	Solid	300.0	2479
MRL 885-2553/29	Lab Control Sample	Total/NA	Solid	300.0	
885-1917-30 MS	BS24-20 3'	Total/NA	Solid	300.0	2479
885-1917-30 MSD	BS24-20 3'	Total/NA	Solid	300.0	2479
885-1917-31 MS	BS24-21 3'	Total/NA	Solid	300.0	2479
885-1917-31 MSD	BS24-21 3'	Total/NA	Solid	300.0	2479

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: WS24-01 0-3'
Lab Sample ID: 885-1917-1
Date Collected: 03/26/24 09:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 13:45
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 13:45
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 15:47
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 17:37

Client Sample ID: WS24-02 0-3'
Lab Sample ID: 885-1917-2
Date Collected: 03/26/24 09:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 14:51
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 14:51
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 15:59
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 18:14

Client Sample ID: WS24-03 0-1"
Lab Sample ID: 885-1917-3
Date Collected: 03/26/24 09:20
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 15:56
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 15:56
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 16:12
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 18:51

Client Sample ID: WS24-04 0-4'
Lab Sample ID: 885-1917-4
Date Collected: 03/26/24 09:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 16:18

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: WS24-04 0-4'
Lab Sample ID: 885-1917-4
Date Collected: 03/26/24 09:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 16:18
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 16:24
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 19:04

Client Sample ID: WS24-05 0-4"
Lab Sample ID: 885-1917-5
Date Collected: 03/26/24 09:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 16:40
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 16:40
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 16:37
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 19:41

Client Sample ID: WS24-07 0-3'
Lab Sample ID: 885-1917-6
Date Collected: 03/26/24 09:50
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 17:01
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 17:01
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 16:49
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 19:53

Client Sample ID: WS24-08 1-3'
Lab Sample ID: 885-1917-7
Date Collected: 03/26/24 10:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 17:23
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 17:23

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: WS24-08 1-3'
Lab Sample ID: 885-1917-7
Date Collected: 03/26/24 10:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 17:02
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 20:05

Client Sample ID: WS24-09 3-4'
Lab Sample ID: 885-1917-8
Date Collected: 03/26/24 10:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 17:45
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 17:45
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 17:14
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 20:18

Client Sample ID: WS24-10 3-4'
Lab Sample ID: 885-1917-9
Date Collected: 03/26/24 10:20
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 18:07
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 18:07
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 17:27
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 20:30

Client Sample ID: WS24-11 0-4'
Lab Sample ID: 885-1917-10
Date Collected: 03/26/24 10:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 18:29
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 18:29
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 17:40

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: WS24-11 0-4'
Lab Sample ID: 885-1917-10
Date Collected: 03/26/24 10:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 20:42

Client Sample ID: BS24-01 3'
Lab Sample ID: 885-1917-11
Date Collected: 03/26/24 10:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 19:13
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 19:13
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 17:52
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 20:55

Client Sample ID: BS24-02 3'
Lab Sample ID: 885-1917-12
Date Collected: 03/26/24 10:50
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 19:34
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 19:34
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 18:05
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 21:07

Client Sample ID: BS24-03 3'
Lab Sample ID: 885-1917-13
Date Collected: 03/26/24 11:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 19:56
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 19:56
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 18:17
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 21:19

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: BS24-04 3'
Lab Sample ID: 885-1917-14
Date Collected: 03/26/24 11:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 20:18
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 20:18
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 18:30
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 21:32

Client Sample ID: BS24-05 1'
Lab Sample ID: 885-1917-15
Date Collected: 03/26/24 11:20
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 20:40
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 20:40
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 18:43
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 22:09

Client Sample ID: BS24-06 1'
Lab Sample ID: 885-1917-16
Date Collected: 03/26/24 11:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 21:02
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 21:02
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 18:55
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 22:21

Client Sample ID: BS24-07 1'
Lab Sample ID: 885-1917-17
Date Collected: 03/26/24 11:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 21:23

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: BS24-07 1'
Lab Sample ID: 885-1917-17
Date Collected: 03/26/24 11:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 21:23
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 19:08
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 22:33

Client Sample ID: BS24-08 4'
Lab Sample ID: 885-1917-18
Date Collected: 03/26/24 11:50
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 21:45
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 21:45
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 19:21
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 22:46

Client Sample ID: BS24-09 4'
Lab Sample ID: 885-1917-19
Date Collected: 03/26/24 12:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 22:07
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 22:07
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 19:33
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 22:58

Client Sample ID: BS24-10 4'
Lab Sample ID: 885-1917-20
Date Collected: 03/26/24 12:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8015D		1	2653	RA	EET ALB	04/01/24 22:29
Total/NA	Prep	5030C			2432	IMR	EET ALB	03/28/24 11:02
Total/NA	Analysis	8021B		1	2654	RA	EET ALB	04/01/24 22:29

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: BS24-10 4'
Lab Sample ID: 885-1917-20
Date Collected: 03/26/24 12:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			2451	JU	EET ALB	03/28/24 13:10
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 19:46
Total/NA	Prep	300_Prep			2465	RC	EET ALB	03/28/24 15:36
Total/NA	Analysis	300.0		20	2473	KB	EET ALB	03/28/24 23:10

Client Sample ID: BS24-11 4'
Lab Sample ID: 885-1917-21
Date Collected: 03/26/24 12:20
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 11:24
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 11:24
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 21:01
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 09:46

Client Sample ID: BS24-12 4'
Lab Sample ID: 885-1917-22
Date Collected: 03/26/24 12:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 11:47
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 11:47
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 21:14
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 09:58

Client Sample ID: BS24-13 4'
Lab Sample ID: 885-1917-23
Date Collected: 03/26/24 12:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 12:11
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 12:11
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 21:26

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: BS24-13 4'
Lab Sample ID: 885-1917-23
Date Collected: 03/26/24 12:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 10:10

Client Sample ID: BS24-14 4'
Lab Sample ID: 885-1917-24
Date Collected: 03/26/24 12:50
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 12:34
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 12:34
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 21:39
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 10:23

Client Sample ID: BS24-15 4'
Lab Sample ID: 885-1917-25
Date Collected: 03/26/24 13:00
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 12:58
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 12:58
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 21:51
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 10:35

Client Sample ID: BS24-16 4'
Lab Sample ID: 885-1917-26
Date Collected: 03/26/24 13:10
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 13:22
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 13:22
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 22:04
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 10:47

Lab Chronicle

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Client Sample ID: BS24-17 3'
Lab Sample ID: 885-1917-27
Date Collected: 03/26/24 13:20
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 13:45
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 13:45
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 22:16
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 11:24

Client Sample ID: BS24-18 3'
Lab Sample ID: 885-1917-28
Date Collected: 03/26/24 13:30
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 14:09
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 14:09
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 22:29
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 11:37

Client Sample ID: BS24-19 3'
Lab Sample ID: 885-1917-29
Date Collected: 03/26/24 13:40
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 14:32
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 14:32
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 22:41
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 11:49

Client Sample ID: BS24-20 3'
Lab Sample ID: 885-1917-30
Date Collected: 03/26/24 13:50
Matrix: Solid
Date Received: 03/28/24 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 14:56

Lab Chronicle

Client: Vertex
Project/Site: SDE 31 Federal #001

Job ID: 885-1917-1

Client Sample ID: BS24-20 3'

Date Collected: 03/26/24 13:50
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 14:56
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 22:54
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 12:02

Client Sample ID: BS24-21 3'

Date Collected: 03/26/24 14:00
Date Received: 03/28/24 08:40

Lab Sample ID: 885-1917-31
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8015D		1	2551	JP	EET ALB	03/29/24 15:43
Total/NA	Prep	5030C			2445	IMR	EET ALB	03/28/24 12:20
Total/NA	Analysis	8021B		1	2552	JP	EET ALB	03/29/24 15:43
Total/NA	Prep	SHAKE			2460	JU	EET ALB	03/28/24 14:38
Total/NA	Analysis	8015D		1	2484	JU	EET ALB	03/28/24 23:06
Total/NA	Prep	300_Prep			2479	JT	EET ALB	03/29/24 07:42
Total/NA	Analysis	300.0		20	2553	RC	EET ALB	03/29/24 12:39

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Vertex
Job ID: 885-1917-1
Project/Site: SDE 31 Federal #001

Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Chain-of-Custody Record

Client: Vertex (Devon Energy)

Mailing Address: On File

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☐ Standard ☒ Rush 48 hour

Project Name: SDE 31 Federal #001

Project #: 23E-05201

Project Manager: Kent Stallings

Sampler: AH AL, LP

On Ice: ☑ Yes ☐ No 409

# of Coolers: 1

Cooler Temp(including CF): 3.8 - 0.1 = 3.7 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

885-1917 COC

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)
3-26-24	0900	Soil	WS24-01 0-3'	4oz	ICE	1										
	0910		WS24-02 0-3'			2										
	0920		WS24-03 0-1'			3										
	0930		WS24-04 0-4'			4										
	0940		WS24-05 0-4'			5										
	0950		WS24-07 0-3'			6										
	1000		WS24-08 1-3'			7										
	1010		WS24-09 3-4'			8										
	1020		WS24-10 3-4'			9										
	1030		WS24-11 0-4'			10										
	1040		BS24-01 3'			11										
	1050		BS24-02 3'			12										

Date	Time	Relinquished by	Received by	Via	Date	Time
3/27/24	9:35	Stephen McCaf				
3/27/24	1900				3/27/24	9:35
Date:	Time	Relinquished by	Received by:	Via	Date	Time
3/27/24	1900			Courier	3/28/24	8:40

Remarks: WO #: 209406601
cc: KStallings@vertex.ca

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

Chain-of-Custody Record

Client: Vertex (Devon Energy)

Mailing Address: On File

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 48 hour

Project Name: SDE 31 Federal #001

Project #: 23E-05201

Project Manager: Kent Stallings

Sampler: AA AL

On Ice: ☒ Yes ☐ No 4 0gi

# of Coolers: 1

Cooler Temp (Including CF): 3.8 - 0.1 = 3.7 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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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)
3-26-24	1100	Soil	BS24-03 3'	4 oz	ICE	13										
	1110		BS24-04 3'			14										
	1120		BS24-05 1'			15										
	1130		BS24-06 1'			16										
	1140		BS24-07 1'			17										
	1150		BS24-08 4'			18										
	1200		BS24-09 4'			19										
	1210		BS24-10 4'			20										
	1220		BS24-11 4'			21										
	1230		BS24-12 4'			22										
	1240		BS24-13 4'			23										
	1250		BS24-14 4'			24										

Date	Time	Relinquished by	Received by	Via	Date	Time
3/27/24	9:35				3/27/24	935
3/27/24	1900			Courier	3/28/24	8:40

Remarks: W/O #: 1094064601
CC: KStallings@Vertex.ca

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

Chain-of-Custody Record

Client: Vertex (Devon Energy)

Mailing Address: On File

Phone #: ↓

email or Fax#:

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

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

Turn-Around Time:
☐ Standard ☒ Rush 48 hour

Project Name: SDE 31 Federal #001

Project #: 23E-05201

Project Manager: Kent Stallings

Sampler: AH AL

On Ice: ☒ Yes ☐ No yogi

# of Coolers: 1

Cooler Temp(including CF): 3.8-0.1=3.7 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	(BTEX) / MTBE / TMB's (8021)	(TPH) 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl), F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)					
3-26-24	1300	Soil	BS24-15 4'	4oz	ICE	25	✓	✓					✓								
↓	1310	↓	BS24-16 4'	↓	↓	26	↓	↓					↓								
↓	1320	↓	BS24-17 3'	↓	↓	27	↓	↓					↓								
↓	1330	↓	BS24-18 3'	↓	↓	28	↓	↓					↓								
↓	1340	↓	BS24-19 3'	↓	↓	29	↓	↓					↓								
↓	1350	↓	BS24-20 3'	↓	↓	30	↓	↓					↓								
↓	1410	↓	BS24-21 3'	↓	↓	31	↓	↓					↓								

Date	Time	Relinquished by	Received by	Via	Date	Time
3/27/24	9:35	[signature]	[signature]		3/27/24	935
3/27/24	1900	[signature]	[signature]	courier	3/28/24	8:40

Remarks: w/o #: 1094064601
CC: KStallings@vertex.ca

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

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4/8/2024

Login Sample Receipt Checklist

Client: Vertex Job Number: 885-1917-1

Login Number: 1917 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
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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

QUESTIONS

Action 350875

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAB1915738719**
Incident Name	**NAB1915738719 SDE 31 FEDERAL #001 @ 30-025-32676**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-025-32676] SDE 31 FEDERAL #001**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SDE 31 FEDERAL #001
Date Release Discovered	05/10/2019
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Corrosion | Flow Line - Production | Crude Oil | Released: 0 BBL | Recovered: 0 BBL | Lost: 0 BBL.
Produced Water Released (bbls) Details	*Not answered.*
Is the concentration of chloride in the produced water >10,000 mg/l	*Not answered.*
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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Energy, Minerals and Natural Resources
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Santa Fe, NM 87505

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**More info needed to determine if this will be treated as a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	*Unavailable.*
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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

I hereby agree and sign off to the above statement	Name: Dale Woodall Title: EHS Professional Email: Dale.Woodall@dvn.com Date: 06/05/2024

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

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	2000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	18
GRO+DRO (EPA SW-846 Method 8015M)	18
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	04/08/2024
On what date will (or did) the final sampling or liner inspection occur	05/29/2024
On what date will (or was) the remediation complete(d)	05/29/2024
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	3473
What is the estimated volume (in cubic yards) that will be remediated	420
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	R360 ARTESIA LLC LANDFARM [fEEM0112340644]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Dale Woodall Title: EHS Professional Email: Dale.Woodall@dvn.com Date: 06/05/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only *Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**325352**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**03/26/2024**
What was the (estimated) number of samples that were to be gathered	**29**
What was the sampling surface area in square feet	**4400**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3673
What was the total volume (cubic yards) remediated	433
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	see report

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

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

I hereby agree and sign off to the above statement	Name: Dale Woodall Title: EHS Professional Email: Dale.Woodall@dvn.com Date: 06/05/2024

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QUESTIONS (continued)

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	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 350875

CONDITIONS

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	Action Number: 350875
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
bhall	Remediation closure approved. This site has been plugged and abandoned and is no longer reasonably needed for subsequent drilling or production operations and will need to meet the requirements of 19.15.29.13 NMAC. A reclamation report must be submitted.	7/16/2024
bhall	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	7/16/2024
bhall	Per 19.15.29.13 E. NMAC, if a reclamation and revegetation report has been submitted to the surface owner, it may be used if the requirements of the surface owner provide equal or better protection of freshwater, human health, and the environment. A copy of the approval of the reclamation and revegetation report from the surface owner and a copy of the approved reclamation and revegetation report will need to be submitted to the OCD via the Permitting website.	7/16/2024