

Environmental Site Remediation Work Plan

General Information

NMOCD District:	2 – Artesia
Landowner:	State
Client:	Devon Energy Production Company, LP
Date:	May 21, 2025
Client Contact:	Jim Raley
Vertex PM:	Kent Stallings

Incident ID:	nAB1532334246
RP Reference:	2RP-3405
Site Location:	Todd 36 State #001
Project #:	25A-01349
Phone #:	575.689.7597
Phone #:	346.814.1413

Objective

The objective of the environmental remediation work plan is to identify exceedances found during the site assessment/characterization activity and propose an appropriate remediation technique to address the open release at Todd 36 State #001 (hereafter referred to as “site”). The incident occurred on January 21, 2015, when a hole developed in the produced water tank. Approximately 75 barrels (bbl) of produced water were released into the lined containment, which then overflowed onto the pad. Approximately 50 bbl of produced water were recovered from the release and removed for disposal off-site. Areas of environmental concern identified and delineated include the pad and pasture east of the containment. An aerial photograph of the site with characterization locations is presented on Figure 1 (Attachment 1). Closure criteria have been selected as per New Mexico Administrative Code 19.15.29.

Table 1. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
> 100 feet	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS – Total dissolved solids

TPH – Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

BTEX - Benzene, toluene, ethylbenzene, and xylenes

Site Assessment/Characterization

Site characterization was completed on April 12, 2023. A total of 28 sample points were established and samples collected for field screening. As the depth to groundwater at the site is greater than 100 feet below ground surface (bgs), vertical delineation is not required. In total, 104 samples were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analysis. The sample locations are presented in Attachment 1. Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented alongside field screen results in Table 2 (Attachment 2). Exceedances are identified in the table as bold with a grey background. The daily field reports and laboratory data reports are included in Attachments 3 and 4, respectively. All applicable research as it pertains to closure criteria selection is presented in Attachment 5, and the completed NMCOD C-141 Report for the incident is included in Attachment 6.

Environmental Site Remediation Work Plan

Remedial Activities

General

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. Soil will be excavated to the extents of the known contamination or in 1-foot increments, and field screening will be utilized to confirm removal of impacted soil below the applicable closure criteria. Impacted soil will be stored on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

nAB1532334246, 2RP-3405 - Release on Pad

Exceedances to reclamation closure criteria were identified at BH22-09 east of the battery containment and will be remediated to closure criteria via excavation. Heavy equipment will be used to complete excavation in areas free of infrastructure or equipment and hand tools will be utilized to remove contaminated soil in close proximity to equipment, buried utilities, and pipelines. Field screening will be utilized to find the horizontal and vertical extents of the spill area. Confirmation samples will be collected as per New Mexico Oil Conservation Division (NMOCD) guidance and submitted for laboratory analysis of all applicable parameters. Surfaces of the final extents of the excavation will meet NMOCD reclamation closure criteria for depth to groundwater greater than 100 feet bgs. The remediation area is approximately 198 square feet as presented on Figure 2 (Attachment 1). Excavation is planned to be completed within 90 days of approval of this Environmental Site Remediation Work Plan. The estimated volume to be excavated is approximately 9 cubic yards.

Sample Point	Excavation Depth	Remediation Method
BH22-09	1'	Heavy equipment/Handcrew

Confirmation samples will also be collected from the remaining area of impact to verify the pad surface is within closure criteria. The remaining area of impact covers approximately 6,753 square feet. Vertex and Devon respectfully request a variance for confirmation sampling due to the large area. This variance request will consist of five-point composite samples for every 400 square feet of impact area.



Environmental Site Remediation Work Plan

Should you have any questions or concerns, please do not hesitate to contact Project Manager Kent Stallings at 346.814.1413 or kstallings@vertexresouce.com.

Lakin Pullman

May 21, 2025

Lakin Pullman, B.Sc.
ENVIRONMENTAL SPECIALIST, REPORTING

Date

Kent Stallings

November 3, 2025

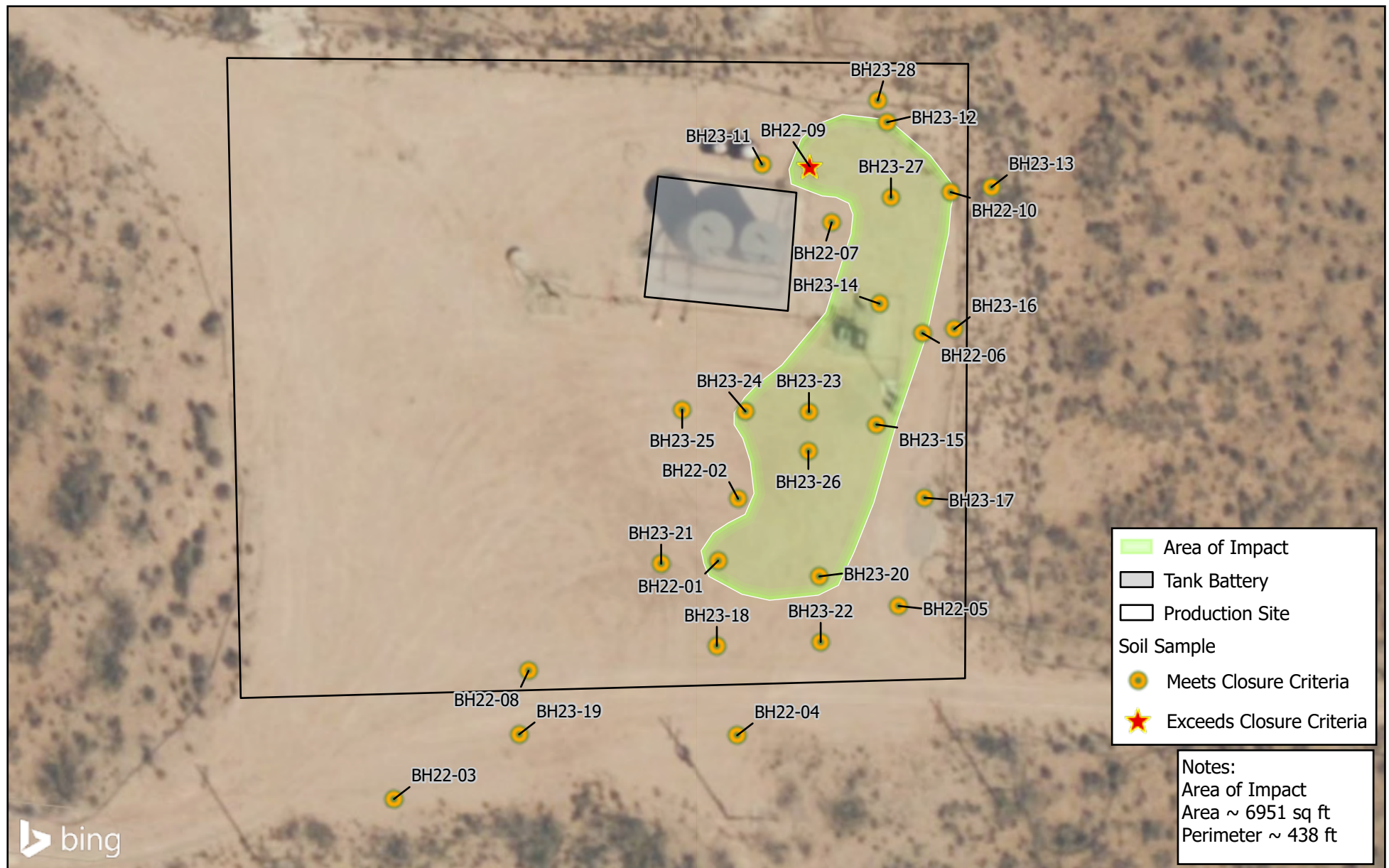
Kent Stallings, P.G.
PROJECT MANAGER, REPORT REVIEW

Date

Attachments

- Attachment 1. Aerial Photograph and Characterization Figure
- Attachment 2. Field Screening and Laboratory Results Table
- Attachment 3. Daily Field Reports with Photographs
- Attachment 4. Laboratory Data Reports with Chain of Custody Forms
- Attachment 5. Closure Criteria Research
- Attachment 6. NMOCD C-141 Report

ATTACHMENT 1



0 25 50 ft
 NAD 1983 StatePlane New Mexico East FIPS 3001 Feet

Map Center:
 Lat/Long: 32.26259°N, 103.733495°W
 Date: Apr 23/25



Characterization Sampling Site Schematic
 Todd 36 State #001

FIGURE:

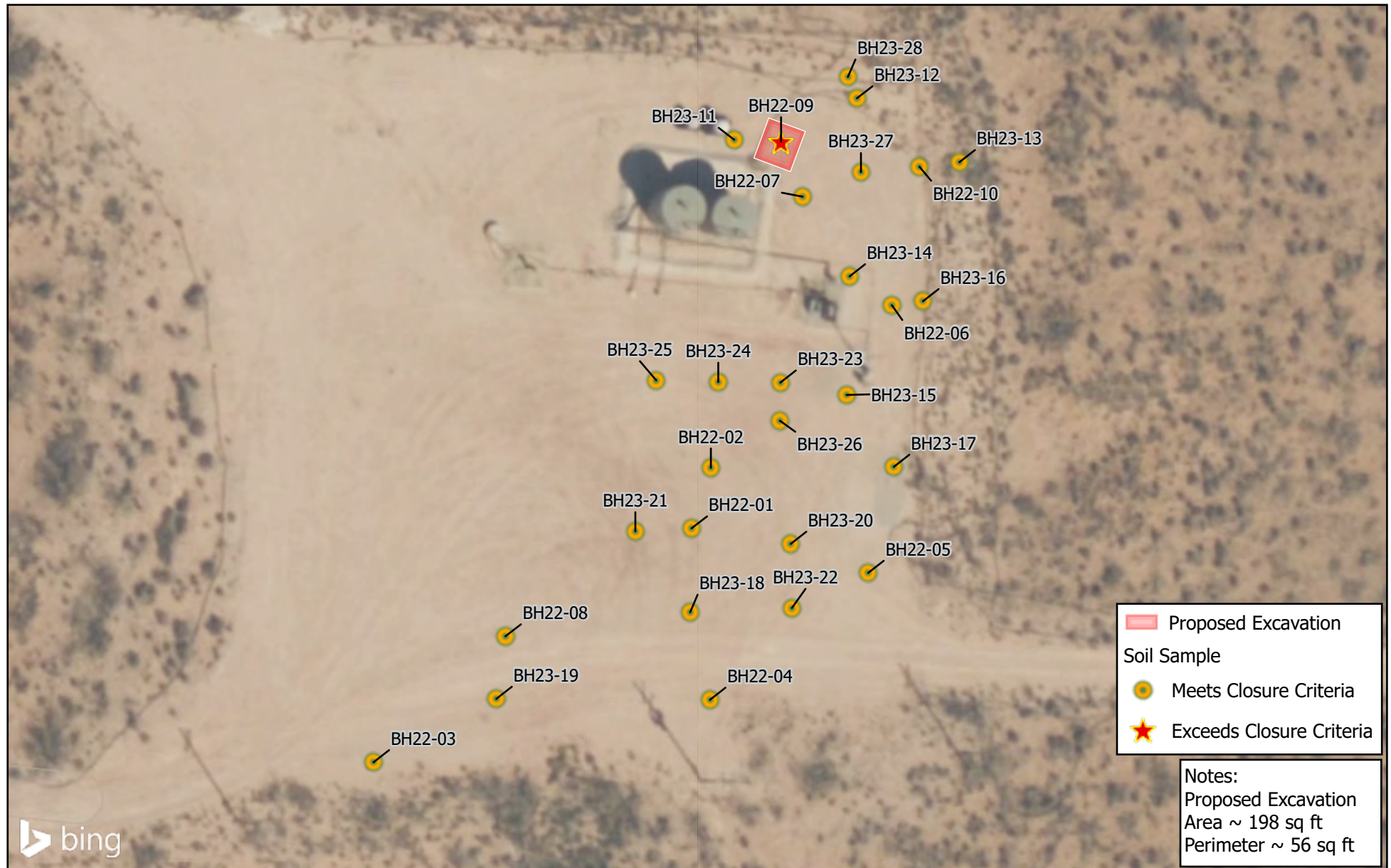
1



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, 2025. Site features from GPS, Vertex, 2025.

VERSATILITY. EXPERTISE.



Map Center:
 Lat/Long: 32.262562°N, 103.733464°W

Date: Apr 23/25



Proposed Excavation Schematic
Todd 36 State #001

FIGURE:

2



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, 2025. Site features from GPS, Vertex, 2025.

VERSATILITY. EXPERTISE.

ATTACHMENT 2

Client Name: Devon Energy Production Company, LP

Site Name: Todd 36 State #001

NMOCD Tracking #: nAB1532334246, 2RP-3405

Project #: 25A-01349

Lab Reports: 2210E20, 2211737, 2303C31, 2303D16, 2303C84, 2303F73, 2304087, and 2304667

Table 2. Initial Characterization Field Screen and Laboratory Results - Depth to Groundwater >100 feet bgs

Sample Description			Petroleum Hydrocarbons							
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					Inorganic
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
BH22-01	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	410
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	740
	6	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	2,600
BH22-02	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	100
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	96
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	120
BH22-03	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	65
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	94
BH22-04	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	84
BH22-05	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	260
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	81
BH22-06	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	ND
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	470
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	1,700
BH22-07	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	470
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	570
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	460
BH22-08	0	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	83
	2	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	71
	4	October 26, 2022	ND	ND	ND	ND	ND	ND	ND	130
BH22-09	0	November 10, 2022	ND	ND	ND	9,400	7,000	9,400	16,400	30,000
	2	November 10, 2022	ND	ND	ND	56	74	56	130	2,000
	4	November 10, 2022	ND	ND	ND	ND	ND	ND	ND	1,800
BH22-10	0	November 10, 2022	ND	ND	ND	ND	ND	ND	ND	460
	2	November 10, 2022	ND	ND	ND	ND	ND	ND	ND	580
	4	November 10, 2022	ND	ND	ND	ND	ND	ND	ND	1,500
BH23-11	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	210
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	420
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	360

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Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					Inorganic
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-12	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	490
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	610
BH23-13	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	150
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	85
	4	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	120
BH23-14	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	2,400
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	3,000
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	2,200
	4	March 31, 2023	ND	ND	ND	ND	ND	ND	ND	420
	5	March 31, 2023	ND	ND	ND	ND	ND	ND	ND	480
BH23-15	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	1,300
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	3,100
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	3,300
	4	March 31, 2023	ND	ND	ND	ND	ND	ND	ND	2,500
BH23-16	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	290
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	280
BH23-17	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	360
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	78
	3	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	78
BH23-18	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	410
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	70
	4	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	83
BH23-19	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	4	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	ND
BH23-20	0	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	1,400
	2	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	1,100
	4	March 22, 2023	ND	ND	ND	ND	ND	ND	ND	1,100
	6	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	3,200
	8	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	2,300
	10	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	2,800
	12	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	790
	13	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	1,200
BH23-21	0	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	200
	2	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	340
	4	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	460

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Table 2. Initial Characterization Field Screen and Laboratory Results - Depth to Groundwater >100 feet bgs										
Sample Description			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
BH23-22	0	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	380
	2	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	72
	4	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	ND
BH23-23	0	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	1,100
	2	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	1,900
	3	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	6,100
	4	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	7,900
	6	March 31, 2023	ND	ND	ND	ND	ND	ND	ND	5,000
	8	March 31, 2023	ND	ND	ND	ND	ND	ND	ND	5,600
BH23-24	0	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	1,900
	2	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	1,900
	4	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	2,600
	4	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	4,700
	5	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	4,500
	6	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	5,100
	10	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	5,200
	12	March 30, 2023	ND	ND	ND	ND	ND	ND	ND	4,100
BH23--25	0	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	68
	4	March 23, 2023	ND	ND	ND	ND	ND	ND	ND	160
BH23-26	0	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	3,800
	2	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	380
	4	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	1,700
BH23-27	0	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	520
	3	March 24, 2023	ND	ND	ND	ND	ND	ND	ND	610
BH23-28	0	April 12, 2023	ND	ND	ND	ND	ND	ND	ND	ND
	2	April 12, 2023	ND	ND	ND	ND	ND	ND	ND	150
	3.5	April 12, 2023	ND	ND	ND	ND	ND	ND	ND	170

"ND" Not Detected at the Reporting Limit

"- " indicates not analyzed/assessed

Bold and grey shaded indicates exceedance outside of NMOCD Remediation Closure Criteria

ATTACHMENT 3



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	9/9/2022
Site Location Name:	Todd 36 State 1	Report Run Date:	9/9/2022 10:56 PM
Client Contact Name:	Wes Matthews	API #:	30-015-20341
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	9/9/2022 9:53 AM
Departed Site	9/9/2022 5:15 PM

Field Notes

10:38 Arrived on site and filled out JSA

10:39 Surveyed area for Borehole placement

10:41 Notice oil staining on Northeast corner about 10 feet off pad

16:18 Began taking samples from BH 1-5 at 1'-2'

16:19 Field screened samples at 0'-2'. Samples were clean on EC but getting hotter at 2'

16:22 Went deeper on BH 01 at 4'
BH03 at 4' and 6'
BH05 at 4' and 5' (significantly hotter than 0' and 2')

16:24 No Petroflag was ran until further instruction

16:25 At BH22-05 soil changed dramatically at 5'

16:25 Hit refusal at 5' on BH22- 01, and 05

16:26 Updated collector with Data points on location of Boreholes

Next Steps & Recommendations

Daily Site Visit Report

1 Continue soil sampling



Daily Site Visit Report



Site Photos

Viewing Direction: North



Oil staining Northeast corner off pad still
within white line area

Viewing Direction: North



BH22-01 (0'-4')

Viewing Direction: North



BH22-02 (0'-2')

Viewing Direction: West



BH22-03 (0'-6')



Daily Site Visit Report

Viewing Direction: North



BH22-04 (0'-2')

Viewing Direction: North



BH22-05 (0'-5')

Viewing Direction: North



At BH22-05 soil changed instantly at 5 feet and hit refusal

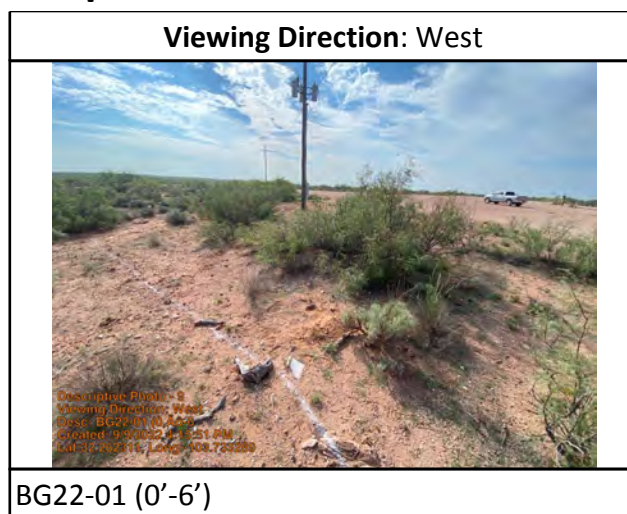
Viewing Direction: West



BH22-06 (0'-2')



Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Signature

Inspector: Jacob Reta

Signature:

A handwritten signature in black ink, appearing to be 'JR', written over a horizontal line. The word 'Signature' is faintly visible below the line.



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	10/26/2022
Site Location Name:	Todd 36 State 1	Report Run Date:	10/27/2022 6:07 PM
Client Contact Name:	Wes Matthews	API #:	30-015-20341
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	10/26/2022 10:16 AM
Departed Site	10/26/2022 6:20 PM

Field Notes

17:30 Arrived on site and filled out JSA
Had Halo crew sign JSA

17:32 At 10:45 I had Halo Crew begin potholing Boreholes with Backhoe

8 boreholes were dug

17:33 BH22-01 was a vertical Borehole and 0-6'

At 6' refusal was hit

17:35 BH22-06 was dug and at 1' a liner was exposed.

Liner was bunched up and assumed to be trash that was buried.

However field screening showed contaminates on Chlorides



Daily Site Visit Report

17:37 All samples were field screened on Chlorides.

2 samples were hot on Chlorides at 4' depth

Samples at 4' and 6' were field screened on TPH

All samples were clean on TPH

17:37 At 2:30 work was concluded for Halo crew while I began field screening

17:40 All samples are jarred and sent to lab

Soil composition is sandy.

Caliche mix around 4' and at top soil

17:51 At 12:00 I had a meeting with Derek from Buckhorn about old equipment that is leaking a white lubricant/ oil right next to project area

There is staining all around this equipment that goes into project area.

17:42 Work concluded at 6:00pm

Next Steps & Recommendations

- 1 Excavation of contaminated areas

Daily Site Visit Report



Site Photos

Viewing Direction: South

BH22-01
0-6'

Viewing Direction: South



Close up of leaking

Viewing Direction: Southeast



Staining around equipment and into project area

Viewing Direction: North

BH22-02
0-4'



Daily Site Visit Report

Viewing Direction: North



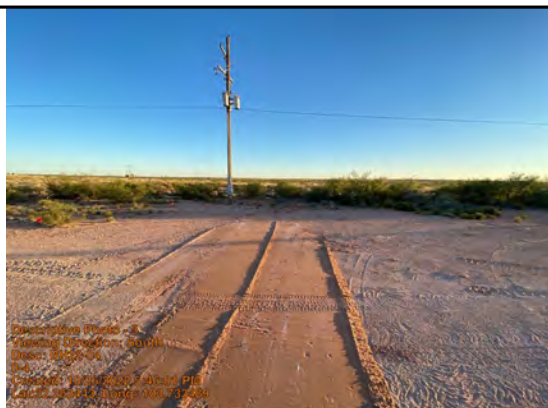
BH22-08
0-4'

Viewing Direction: South



BH22-03
0-4'

Viewing Direction: South



BH22-04
0-4'

Viewing Direction: North



BH22-05
0-4'



Daily Site Visit Report

Viewing Direction: North



BH22-06

0-4'

Were liner was located at 1.5' depth

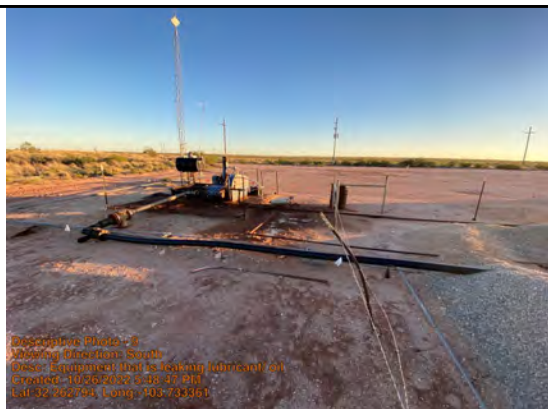
Viewing Direction: West



BH22-07

0-4'

Viewing Direction: South



Equipment that is leaking lubricant/ oil

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Jacob Reta

Signature:

A handwritten signature in black ink, appearing to be 'JR', written over a horizontal line. The word 'Signature' is faintly visible to the left of the line.



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	3/24/2023
Site Location Name:	Todd 36 State 1	Report Run Date:	3/25/2023 12:39 AM
Client Contact Name:	Wes Matthews	API #:	30-015-20341
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/24/2023 6:35 AM
Departed Site	3/24/2023 11:21 AM

Field Notes

- 6:47** Completed JSA on arrival. On site to attempt vertical delineation of pad release with Geoprobe.
- 6:55** Mapped borehole locations and swept areas with magnetic locator prior to ground disturbance.
- 7:23** Conducted safety meeting with other Vertex technician.
- 7:49** Used hand tools to advance BH23-26 and BH23-27 pilot holes to refusal at 4 and 2 feet bgs, respectively.
- 8:58** Attempted to advance BH23-26 with Geoprobe for vertical delineation but could not push beyond caliche at 4 feet bgs.
- 9:24** Attempted to advance BH23-27 with Geoprobe for vertical delineation but could not push beyond caliche at 3 feet bgs.
- 10:29** Attempted to advance BH23-24 with Geoprobe for vertical delineation but could not push beyond caliche at 5 feet bgs.
- 10:44** Attempted to advance BH23-20 with Geoprobe for vertical delineation but could not push beyond caliche at 6 feet bgs.
- 10:45** Attempted to advance BH23-01 with Geoprobe for vertical delineation but could not push beyond caliche at 6 feet bgs.
- 11:12** Unable to complete vertical delineation with Geoprobe due to caliche. Will need large excavator or drill rig to complete vertical delineation.

Next Steps & Recommendations

Daily Site Visit Report



- 1 Arrange for larger equipment to complete vertical delineation.

Daily Site Visit Report



Site Photos

Viewing Direction: North



South of fence around containment facing north.

Viewing Direction: Northeast



Southwest of electrical boxes facing northeast. Started pilot hole for BH23-26.

Viewing Direction: South



Northeast of tank battery facing south. Started pilot hole for BH23-27.

Viewing Direction: North



Southwest of electrical boxes facing northeast. Attempted Geoprobe at BH23-26 but could not get beyond caliche refusal at 4 feet bgs.



Daily Site Visit Report

Viewing Direction: Southwest



Northeast of tank battery facing southwest. Attempted Geoprobe at BH23-27 but could not get beyond caliche refusal at 3 feet bgs.

Viewing Direction: North



South of tank battery facing north. Attempted Geoprobe at BH23-24 but could not get beyond caliche refusal at 5 feet bgs.

Viewing Direction: Northwest



South-southeast of electrical boxes facing northwest. Attempted Geoprobe at BH23-20 but could not get beyond caliche refusal at 6 feet bgs.

Viewing Direction: Northeast



South of tank battery facing northeast. Attempted Geoprobe at BH23-01 but could not get beyond caliche refusal at 6 feet bgs.

Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:

A handwritten signature in black ink, appearing to be 'LP', written over a horizontal line.

Signature



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	3/30/2023
Site Location Name:	Todd 36 State 1	Report Run Date:	3/30/2023 10:43 PM
Client Contact Name:	Wes Matthews	API #:	30-015-20341
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/30/2023 7:40 AM
Departed Site	3/30/2023 3:30 PM

Field Notes

8:50 Arrived on site and filled out safety documents. Met with Devon contractors, discussing work plan for the day and safety and signing safety documents.

Marked proposed sampling points for line sweep.

Lines were swept.

Determined BH23-23, BH23-24, and BH23-20 to be accessible.

9:31 Excavated BH23-23 at 2 ft and 4 ft hitting caliche layer at 3.5 ft but still able to excavate but with difficulty.
Collected samples BH23-23 2' and BH23-23 4'.

9:33 Field screened samples BH23-23 2' and BH23-23 4' for chlorides using EC meter. Samples exhibited above 600 ppm Cl.

9:58 BH23-20 excavated to 8 ft.
Collected sample BH23-20 8' and field screened for Chlorides with EC meter. Samples exhibited above 600 ppm Cl.
Prepared trackhoe for excavation beyond 8 ft depth at BH23-20.

10:42 Excavated BH23-20 to 10 ft.
Collected sample BH23-20 10'.
Field screened sample BH23-20 10' for Chlorides with EC meter. Sample exhibited greater than 600 ppm Cl.



Daily Site Visit Report

11:28 Excavated BH23-20 to 12 ft.

Collected sample BH23-20 12'.

Field screened sample BH23-20 12' for chlorides with EC meter. Sample exhibited chlorides exceeding 600 ppm.

Field screened samples BH23-23 4' and BH23-20 8', 10', and 12' for VOCs. All 0 VOC detected.

Collected sample BH23-20 13'.

Field screened sample BH23-20 13' for chlorides with EC meter. Sample exhibited chlorides exceeding 600 ppm.

11:51 Refusal for BH23-20 was hit at 13 ft.

13:51 Moved to BH23-24 for excavation.

Excavated BH23-24 to 4ft.

Collected sample BH23-24 4'.

Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 11:45.

Excavated BH23-24 to 6ft.

Collected sample BH23-24 6'.

Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 12:10

Excavated BH23-24 to 8ft.

Collected sample BH23-24 8'.

Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 12:30.

Excavated BH23-24 to 10ft.

Collected sample BH23-24 10'.

Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 12:45.

Excavated BH23-24 to 12ft.

Collected sample BH23-24 12'.

Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 13:15.



Daily Site Visit Report

- 13:59** Excavated BH23-24 to 13ft.
Collected sample BH23-24 13'.
Field screened for chlorides with EC meter. Chlorides exceeded 600 ppm Cl. 13:45.
Hit refusal at 13ft.
- 15:04** Excavation boreholes were backfilled and remaining material was piled for haul off.

Samples BH23-23 4';
BH23-24 4', 6', 8', 10', 12', 13';
BH23-20 8', 10', 12', 13' were prepared for lab.

Discussion with crew and Devon representative for tomorrow plan.
Completed daily field report and daily soil sampling report.

Next Steps & Recommendations

- 1 Hydro vac lines for access to vertical delineation.
- 2 Continue to pursue vertical delineation.

Daily Site Visit Report



Site Photos

Viewing Direction: South



BH23-23 2 ft - 4 ft

Viewing Direction: North



BH23-20 8ft

Viewing Direction: West



BH23-20 8ft - 13ft

Viewing Direction: North



BH23-24 4ft to 13ft



Daily Site Visit Report

Viewing Direction: East



Descriptive Photo - 5
Viewing Direction: East
Desc: Backfilled sample boreholes and remaining material pile
Created: 3/30/2023 3:05:34 PM
Lat:32.582877, Long:-103.733899

Backfilled sample boreholes and remaining material pile

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Stephanie McCartyM

Signature: 
Signature



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	3/31/2023
Site Location Name:	Todd 36 State 1	Report Run Date:	3/31/2023 6:07 PM
Client Contact Name:	Jim Raley	API #:	30-015-20341
Client Contact Phone #:	575-748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	3/31/2023 7:40 AM
Departed Site	3/31/2023 12:15 PM

Field Notes

- 8:22** Arrived on site and filled out safety documents. Met with Devon contractors (Halo), discussing work plan for the day and safety and signing safety documents.
- 9:17** Excavated BH23-23 to 6'.
Collected Bh23-23 6' and field screened for chlorides with EC meter. Cl exceeded 600 ppm.
Excavated BH23-23 to 8'.
Collected Bh23-23 8' and field screened for chlorides with EC meter. Cl exceeded 600 ppm.
Hit refusal at 8 ft.
- 10:21** Excavated BH23-14 to 4'.
Collected sample BH23-14 4' and field screened for chlorides with EC meter. Chloride ppm were close to 600 ppm Cl. Excavated to 5' and collected sample BH23-14 5' field screening for chlorides. Chloride ppm below 600. Back filled excavated borehole.
- 11:12** Excavated BH23-15 to 4'.
Collected sample BH23-15 4'.
Field screened for chlorides using EC meter.
Chloride ppm above 600.



Daily Site Visit Report

11:37 Backfilled excavated boreholes BH23-15 and BH23-23.

Field screened all samples for VOCs with PID.

Prepared samples for lab.

11:47 Communication with Devon representative Brice Blaylock.

Completed daily field report and daily soil sampling report.

Next Steps & Recommendations

- 1 Receive lab data from submitted samples.

Daily Site Visit Report



Site Photos

Viewing Direction: Northwest



BH23-23 6ft - 8ft

Viewing Direction: East



Hydrovac and daylighted lines

Viewing Direction: West



BH23-14 4ft - 5ft backfilling

Viewing Direction: Northwest



BH23-15 4ft



Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Signature

Inspector: Stephanie McCartyM

Signature:

A handwritten signature in black ink, appearing to read 'Steph M', written over a thin horizontal line. The word 'Signature' is printed in small text below the line on the left.



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	4/12/2023
Site Location Name:	Todd 36 State 1	Report Run Date:	4/12/2023 11:41 PM
Client Contact Name:	Wes Matthews	API #:	30-015-20341
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/12/2023 1:18 PM
Departed Site	4/12/2023 3:52 PM

Field Notes

- 13:21** Completed JSA at previous location. On site to complete horizontal delineation.
- 15:36** Mapped additional borehole location. Swept borehole area with magnetic locator prior to ground disturbance.
- 15:39** Advanced BH23-28 NW of BH23-12 to complete horizontal delineation to north. Collected samples at 0, 2, and 3.5 feet bgs. Hit refusal at 3.5 feet bgs.
- 15:41** Field screening results for all samples were below NMOCD strictest criteria for chloride and TPH.
- 15:41** Horizontal delineation complete pending laboratory results.

Next Steps & Recommendations

1

Daily Site Visit Report



Site Photos

Viewing Direction: North



South of fence around containment facing north.

Viewing Direction: South



Northwest of tank battery facing south.
Advanced BH23-28 northwest of BH23-12.

Viewing Direction: East



Southwest of tanks facing east.

Viewing Direction: North



South of lease road on south edge of pad facing north.

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:

A handwritten signature in black ink, appearing to be 'LP', written over a horizontal line.

Signature

ATTACHMENT 4



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

November 08, 2022

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 1 Pad

OrderNo.: 2210E20

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 25 sample(s) on 10/28/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-01 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:30:00 AM

Lab ID: 2210E20-001

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 5:04:36 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/2/2022 5:04:36 PM
Surr: DNOP	77.4	21-129		%Rec	1	11/2/2022 5:04:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/2/2022 2:39:00 AM
Surr: BFB	96.7	37.7-212		%Rec	1	11/2/2022 2:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/2/2022 2:39:00 AM
Toluene	ND	0.050		mg/Kg	1	11/2/2022 2:39:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/2/2022 2:39:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/2/2022 2:39:00 AM
Surr: 4-Bromofluorobenzene	127	70-130		%Rec	1	11/2/2022 2:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/3/2022 3:48:22 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-01 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:35:00 AM

Lab ID: 2210E20-002

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 5:28:14 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 5:28:14 PM
Surr: DNOP	82.2	21-129		%Rec	1	11/2/2022 5:28:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/2/2022 2:59:00 AM
Surr: BFB	99.0	37.7-212		%Rec	1	11/2/2022 2:59:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/2/2022 2:59:00 AM
Toluene	ND	0.047		mg/Kg	1	11/2/2022 2:59:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/2/2022 2:59:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/2/2022 2:59:00 AM
Surr: 4-Bromofluorobenzene	129	70-130		%Rec	1	11/2/2022 2:59:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	410	60		mg/Kg	20	11/3/2022 4:00:43 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-01 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:40:00 AM

Lab ID: 2210E20-003

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 5:52:04 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/2/2022 5:52:04 PM
Surr: DNOP	78.5	21-129		%Rec	1	11/2/2022 5:52:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/2/2022 3:19:00 AM
Surr: BFB	97.7	37.7-212		%Rec	1	11/2/2022 3:19:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/2/2022 3:19:00 AM
Toluene	ND	0.048		mg/Kg	1	11/2/2022 3:19:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/2/2022 3:19:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/2/2022 3:19:00 AM
Surr: 4-Bromofluorobenzene	129	70-130		%Rec	1	11/2/2022 3:19:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	740	60		mg/Kg	20	11/3/2022 4:13:04 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-01 6'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:45:00 AM

Lab ID: 2210E20-004

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 6:15:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 6:15:47 PM
Surr: DNOP	84.5	21-129		%Rec	1	11/2/2022 6:15:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/2/2022 3:39:00 AM
Surr: BFB	98.9	37.7-212		%Rec	1	11/2/2022 3:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/2/2022 3:39:00 AM
Toluene	ND	0.048		mg/Kg	1	11/2/2022 3:39:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/2/2022 3:39:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/2/2022 3:39:00 AM
Surr: 4-Bromofluorobenzene	130	70-130		%Rec	1	11/2/2022 3:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	2600	150		mg/Kg	50	11/4/2022 9:32:26 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-02 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:50:00 AM

Lab ID: 2210E20-005

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 6:39:34 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 6:39:34 PM
Surr: DNOP	82.5	21-129		%Rec	1	11/2/2022 6:39:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/2/2022 3:58:00 AM
Surr: BFB	101	37.7-212		%Rec	1	11/2/2022 3:58:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/2/2022 3:58:00 AM
Toluene	ND	0.050		mg/Kg	1	11/2/2022 3:58:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/2/2022 3:58:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/2/2022 3:58:00 AM
Surr: 4-Bromofluorobenzene	132	70-130	S	%Rec	1	11/2/2022 3:58:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	100	60		mg/Kg	20	11/3/2022 4:37:47 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-02 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 10:55:00 AM

Lab ID: 2210E20-006

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 7:03:15 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 7:03:15 PM
Surr: DNOP	81.3	21-129		%Rec	1	11/2/2022 7:03:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/2/2022 4:18:00 AM
Surr: BFB	98.8	37.7-212		%Rec	1	11/2/2022 4:18:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/2/2022 4:18:00 AM
Toluene	ND	0.047		mg/Kg	1	11/2/2022 4:18:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/2/2022 4:18:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/2/2022 4:18:00 AM
Surr: 4-Bromofluorobenzene	128	70-130		%Rec	1	11/2/2022 4:18:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	96	60		mg/Kg	20	11/3/2022 3:43:37 PM

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

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

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-02 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:00:00 AM

Lab ID: 2210E20-007

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 7:26:55 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 7:26:55 PM
Surr: DNOP	100	21-129		%Rec	1	11/2/2022 7:26:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/2/2022 4:38:00 AM
Surr: BFB	100	37.7-212		%Rec	1	11/2/2022 4:38:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/2/2022 4:38:00 AM
Toluene	ND	0.050		mg/Kg	1	11/2/2022 4:38:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/2/2022 4:38:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/2/2022 4:38:00 AM
Surr: 4-Bromofluorobenzene	129	70-130		%Rec	1	11/2/2022 4:38:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	120	60		mg/Kg	20	11/3/2022 3:56:02 PM

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

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

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-03 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:05:00 AM

Lab ID: 2210E20-008

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 7:50:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 7:50:44 PM
Surr: DNOP	76.1	21-129		%Rec	1	11/2/2022 7:50:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/2/2022 4:57:00 AM
Surr: BFB	93.4	37.7-212		%Rec	1	11/2/2022 4:57:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/2/2022 4:57:00 AM
Toluene	ND	0.048		mg/Kg	1	11/2/2022 4:57:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/2/2022 4:57:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/2/2022 4:57:00 AM
Surr: 4-Bromofluorobenzene	127	70-130		%Rec	1	11/2/2022 4:57:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	11/3/2022 5:22:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-03 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:10:00 AM

Lab ID: 2210E20-009

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 8:14:23 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 8:14:23 PM
Surr: DNOP	85.5	21-129		%Rec	1	11/2/2022 8:14:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/2/2022 5:17:00 AM
Surr: BFB	103	37.7-212		%Rec	1	11/2/2022 5:17:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/2/2022 5:17:00 AM
Toluene	ND	0.049		mg/Kg	1	11/2/2022 5:17:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/2/2022 5:17:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/2/2022 5:17:00 AM
Surr: 4-Bromofluorobenzene	129	70-130		%Rec	1	11/2/2022 5:17:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	65	60		mg/Kg	20	11/3/2022 5:35:17 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-03 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:15:00 AM

Lab ID: 2210E20-010

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 8:38:04 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 8:38:04 PM
Surr: DNOP	89.8	21-129		%Rec	1	11/2/2022 8:38:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/2/2022 5:37:00 AM
Surr: BFB	102	37.7-212		%Rec	1	11/2/2022 5:37:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/2/2022 5:37:00 AM
Toluene	ND	0.049		mg/Kg	1	11/2/2022 5:37:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/2/2022 5:37:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/2/2022 5:37:00 AM
Surr: 4-Bromofluorobenzene	131	70-130	S	%Rec	1	11/2/2022 5:37:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	94	60		mg/Kg	20	11/3/2022 5:47:41 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-04 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:20:00 AM

Lab ID: 2210E20-011

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 8:45:52 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 8:45:52 PM
Surr: DNOP	85.6	21-129		%Rec	1	11/2/2022 8:45:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/3/2022 12:02:19 AM
Surr: BFB	89.0	37.7-212		%Rec	1	11/3/2022 12:02:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/3/2022 12:02:19 AM
Toluene	ND	0.047		mg/Kg	1	11/3/2022 12:02:19 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/3/2022 12:02:19 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/3/2022 12:02:19 AM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	11/3/2022 12:02:19 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	11/3/2022 6:00:05 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-04 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:25:00 AM

Lab ID: 2210E20-012

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 8:56:36 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/2/2022 8:56:36 PM
Surr: DNOP	96.3	21-129		%Rec	1	11/2/2022 8:56:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/3/2022 1:13:11 AM
Surr: BFB	86.7	37.7-212		%Rec	1	11/3/2022 1:13:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/3/2022 1:13:11 AM
Toluene	ND	0.050		mg/Kg	1	11/3/2022 1:13:11 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/3/2022 1:13:11 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/3/2022 1:13:11 AM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	11/3/2022 1:13:11 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	11/3/2022 6:12:29 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-04 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 11:30:00 AM

Lab ID: 2210E20-013

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 9:07:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 9:07:19 PM
Surr: DNOP	96.0	21-129		%Rec	1	11/2/2022 9:07:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/3/2022 2:23:42 AM
Surr: BFB	88.2	37.7-212		%Rec	1	11/3/2022 2:23:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/3/2022 2:23:42 AM
Toluene	ND	0.048		mg/Kg	1	11/3/2022 2:23:42 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/3/2022 2:23:42 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/3/2022 2:23:42 AM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	11/3/2022 2:23:42 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	84	60		mg/Kg	20	11/3/2022 6:24:54 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-05 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:30:00 PM

Lab ID: 2210E20-014

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 9:18:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 9:18:04 PM
Surr: DNOP	98.2	21-129		%Rec	1	11/2/2022 9:18:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/3/2022 12:46:00 AM
Surr: BFB	93.8	37.7-212		%Rec	1	11/3/2022 12:46:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/3/2022 12:46:00 AM
Toluene	ND	0.049		mg/Kg	1	11/3/2022 12:46:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/3/2022 12:46:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/3/2022 12:46:00 AM
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	11/3/2022 12:46:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	260	60		mg/Kg	20	11/3/2022 7:02:06 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-05 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:35:00 PM

Lab ID: 2210E20-015

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 9:28:48 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/2/2022 9:28:48 PM
Surr: DNOP	93.5	21-129		%Rec	1	11/2/2022 9:28:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/3/2022 1:05:00 AM
Surr: BFB	94.0	37.7-212		%Rec	1	11/3/2022 1:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 1:05:00 AM
Toluene	ND	0.047		mg/Kg	1	11/3/2022 1:05:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/3/2022 1:05:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/3/2022 1:05:00 AM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	11/3/2022 1:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	11/3/2022 7:14:30 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-05 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:40:00 PM

Lab ID: 2210E20-016

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 9:39:42 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/2/2022 9:39:42 PM
Surr: DNOP	96.7	21-129		%Rec	1	11/2/2022 9:39:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/3/2022 2:04:00 AM
Surr: BFB	93.6	37.7-212		%Rec	1	11/3/2022 2:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/3/2022 2:04:00 AM
Toluene	ND	0.050		mg/Kg	1	11/3/2022 2:04:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/3/2022 2:04:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/3/2022 2:04:00 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	11/3/2022 2:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	81	60		mg/Kg	20	11/3/2022 7:26:54 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-06 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:45:00 PM

Lab ID: 2210E20-017

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 9:50:35 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 9:50:35 PM
Surr: DNOP	94.3	21-129		%Rec	1	11/2/2022 9:50:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/3/2022 2:24:00 AM
Surr: BFB	98.7	37.7-212		%Rec	1	11/3/2022 2:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/3/2022 2:24:00 AM
Toluene	ND	0.049		mg/Kg	1	11/3/2022 2:24:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/3/2022 2:24:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/3/2022 2:24:00 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	11/3/2022 2:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	61		mg/Kg	20	11/3/2022 7:39:19 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-06 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:50:00 PM

Lab ID: 2210E20-018

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 10:12:04 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 10:12:04 PM
Surr: DNOP	96.6	21-129		%Rec	1	11/2/2022 10:12:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/3/2022 2:44:00 AM
Surr: BFB	90.9	37.7-212		%Rec	1	11/3/2022 2:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 2:44:00 AM
Toluene	ND	0.049		mg/Kg	1	11/3/2022 2:44:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/3/2022 2:44:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/3/2022 2:44:00 AM
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	1	11/3/2022 2:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	470	61		mg/Kg	20	11/3/2022 7:51:43 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-06 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 12:55:00 PM

Lab ID: 2210E20-019

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 10:22:56 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/2/2022 10:22:56 PM
Surr: DNOP	110	21-129		%Rec	1	11/2/2022 10:22:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/3/2022 3:03:00 AM
Surr: BFB	91.0	37.7-212		%Rec	1	11/3/2022 3:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/3/2022 3:03:00 AM
Toluene	ND	0.049		mg/Kg	1	11/3/2022 3:03:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/3/2022 3:03:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/3/2022 3:03:00 AM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	11/3/2022 3:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	1700	60		mg/Kg	20	11/3/2022 8:04:07 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-07 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:00:00 PM

Lab ID: 2210E20-020

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 10:33:46 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/2/2022 10:33:46 PM
Surr: DNOP	104	21-129		%Rec	1	11/2/2022 10:33:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/3/2022 3:23:00 AM
Surr: BFB	92.0	37.7-212		%Rec	1	11/3/2022 3:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 3:23:00 AM
Toluene	ND	0.048		mg/Kg	1	11/3/2022 3:23:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/3/2022 3:23:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/3/2022 3:23:00 AM
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	11/3/2022 3:23:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	470	60		mg/Kg	20	11/3/2022 8:16:32 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-07 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:05:00 PM

Lab ID: 2210E20-021

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 10:44:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 10:44:37 PM
Surr: DNOP	94.9	21-129		%Rec	1	11/2/2022 10:44:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/3/2022 3:43:00 AM
Surr: BFB	94.8	37.7-212		%Rec	1	11/3/2022 3:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 3:43:00 AM
Toluene	ND	0.049		mg/Kg	1	11/3/2022 3:43:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/3/2022 3:43:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/3/2022 3:43:00 AM
Surr: 4-Bromofluorobenzene	89.4	70-130		%Rec	1	11/3/2022 3:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	570	59		mg/Kg	20	11/3/2022 8:28:56 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-07 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:10:00 PM

Lab ID: 2210E20-022

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 10:55:25 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/2/2022 10:55:25 PM
Surr: DNOP	102	21-129		%Rec	1	11/2/2022 10:55:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/3/2022 4:03:00 AM
Surr: BFB	92.9	37.7-212		%Rec	1	11/3/2022 4:03:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/3/2022 4:03:00 AM
Toluene	ND	0.050		mg/Kg	1	11/3/2022 4:03:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/3/2022 4:03:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/3/2022 4:03:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	11/3/2022 4:03:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	460	60		mg/Kg	20	11/3/2022 8:41:21 PM

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

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

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-08 0'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:15:00 PM

Lab ID: 2210E20-023

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 11:06:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 11:06:14 PM
Surr: DNOP	76.1	21-129		%Rec	1	11/2/2022 11:06:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/3/2022 4:22:00 AM
Surr: BFB	90.9	37.7-212		%Rec	1	11/3/2022 4:22:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 4:22:00 AM
Toluene	ND	0.048		mg/Kg	1	11/3/2022 4:22:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/3/2022 4:22:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/3/2022 4:22:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	11/3/2022 4:22:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	83	60		mg/Kg	20	11/3/2022 8:53:45 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-08 2'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:20:00 PM

Lab ID: 2210E20-024

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 11:17:00 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 11:17:00 PM
Surr: DNOP	92.5	21-129		%Rec	1	11/2/2022 11:17:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/3/2022 4:42:00 AM
Surr: BFB	88.3	37.7-212		%Rec	1	11/3/2022 4:42:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/3/2022 4:42:00 AM
Toluene	ND	0.046		mg/Kg	1	11/3/2022 4:42:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	11/3/2022 4:42:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	11/3/2022 4:42:00 AM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	11/3/2022 4:42:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	71	59		mg/Kg	20	11/3/2022 9:30:58 PM

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

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

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Analytical Report

Lab Order 2210E20

Date Reported: 11/8/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-08 4'

Project: Todd 36 State 1 Pad

Collection Date: 10/26/2022 1:25:00 PM

Lab ID: 2210E20-025

Matrix: SOIL

Received Date: 10/28/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 11:27:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 11:27:46 PM
Surr: DNOP	124	21-129		%Rec	1	11/2/2022 11:27:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/3/2022 5:01:00 AM
Surr: BFB	90.5	37.7-212		%Rec	1	11/3/2022 5:01:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/3/2022 5:01:00 AM
Toluene	ND	0.048		mg/Kg	1	11/3/2022 5:01:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/3/2022 5:01:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/3/2022 5:01:00 AM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	11/3/2022 5:01:00 AM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	130	59		mg/Kg	20	11/3/2022 9:43:22 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 Quantitative 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#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: MB-71274	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 71274		RunNo: 92304							
Prep Date: 11/3/2022	Analysis Date: 11/3/2022		SeqNo: 3316872		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-71274	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 71274		RunNo: 92304							
Prep Date: 11/3/2022	Analysis Date: 11/3/2022		SeqNo: 3316873		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.5	90	110			

Sample ID: MB-71275	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 71275		RunNo: 92326							
Prep Date: 11/3/2022	Analysis Date: 11/3/2022		SeqNo: 3317614		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-71275	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 71275		RunNo: 92326							
Prep Date: 11/3/2022	Analysis Date: 11/3/2022		SeqNo: 3317615		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: MB-71203	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 71203	RunNo: 92296								
Prep Date: 11/1/2022	Analysis Date: 11/2/2022	SeqNo: 3315619 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		79.0	21	129			

Sample ID: LCS-71203	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 71203	RunNo: 92296								
Prep Date: 11/1/2022	Analysis Date: 11/2/2022	SeqNo: 3315620 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	50.00	0	88.1	64.4	127			
Surr: DNOP	3.7		5.000		74.9	21	129			

Sample ID: LCS-71209	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 71209	RunNo: 92253								
Prep Date: 11/1/2022	Analysis Date: 11/2/2022	SeqNo: 3315787 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	15	50.00	0	100	64.4	127			
Surr: DNOP	5.6		5.000		113	21	129			

Sample ID: LCS-71219	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 71219	RunNo: 92253								
Prep Date: 11/1/2022	Analysis Date: 11/3/2022	SeqNo: 3315788 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.3		5.000		106	21	129			

Sample ID: MB-71209	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 71209	RunNo: 92253								
Prep Date: 11/1/2022	Analysis Date: 11/2/2022	SeqNo: 3315790 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	21	129			

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 Quantitative 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#: 2210E20
08-Nov-22

Client: Vertex Resources Services, Inc.
Project: Todd 36 State 1 Pad

Sample ID: MB-71219	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 71219	RunNo: 92253								
Prep Date: 11/1/2022	Analysis Date: 11/3/2022	SeqNo: 3315791		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.6		10.00		85.8	21	129			

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 Quantitative 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#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: ics-71188	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 71188			RunNo: 92256						
Prep Date: 10/31/2022	Analysis Date: 11/1/2022			SeqNo: 3313900		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.1	72.3	137			
Surr: BFB	2200		1000		219	37.7	212			S

Sample ID: mb-71188	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 71188			RunNo: 92256						
Prep Date: 10/31/2022	Analysis Date: 11/1/2022			SeqNo: 3313901		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		104	37.7	212			

Sample ID: mb-71214	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 71214			RunNo: 92280						
Prep Date: 11/1/2022	Analysis Date: 11/2/2022			SeqNo: 3314552		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		89.3	37.7	212			

Sample ID: ics-71214	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 71214			RunNo: 92280						
Prep Date: 11/1/2022	Analysis Date: 11/2/2022			SeqNo: 3314553		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		189	37.7	212			

Sample ID: mb-71199	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 71199			RunNo: 92280						
Prep Date: 11/1/2022	Analysis Date: 11/3/2022			SeqNo: 3314576		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	890		1000		88.6	37.7	212			

Sample ID: ics-71199	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 71199			RunNo: 92280						
Prep Date: 11/1/2022	Analysis Date: 11/2/2022			SeqNo: 3314577		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	99.2	72.3	137			
Surr: BFB	1900		1000		188	37.7	212			

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 Quantitative 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#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: 2210e20-011ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range
Client ID: BH22-04 0'	Batch ID: 71199	RunNo: 92280
Prep Date: 11/1/2022	Analysis Date: 11/3/2022	SeqNo: 3314579 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO)	24	4.9 24.46 0 99.6 70 130
Surr: BFB	1900	978.5 192 37.7 212

Sample ID: 2210e20-011amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range
Client ID: BH22-04 0'	Batch ID: 71199	RunNo: 92280
Prep Date: 11/1/2022	Analysis Date: 11/3/2022	SeqNo: 3314580 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO)	24	4.8 24.15 0 99.3 70 130 1.59 20
Surr: BFB	1900	966.2 194 37.7 212 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 Quantitative 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

Page 30 of 32

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: lcs-71188	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 71188		RunNo: 92256							
Prep Date: 10/31/2022	Analysis Date: 11/1/2022		SeqNo: 3313973		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.025	1.000	0	128	80	120			S
Toluene	1.3	0.050	1.000	0	128	80	120			S
Ethylbenzene	1.3	0.050	1.000	0	128	80	120			S
Xylenes, Total	3.8	0.10	3.000	0	126	80	120			S
Surr: 4-Bromofluorobenzene	1.3		1.000		128	70	130			

Sample ID: mb-71188	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71188		RunNo: 92256							
Prep Date: 10/31/2022	Analysis Date: 11/1/2022		SeqNo: 3313974		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	70	130			

Sample ID: mb-71214	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71214		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/2/2022		SeqNo: 3314596		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	70	130			

Sample ID: LCS-71214	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 71214		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/2/2022		SeqNo: 3314597		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	70	130			

Sample ID: mb-71199	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71199		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/3/2022		SeqNo: 3314620		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								

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 Quantitative 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#: 2210E20

08-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: mb-71199	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71199		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/3/2022		SeqNo: 3314620		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.91		1.000		91.4	70	130			

Sample ID: LCS-71199	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 71199		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/2/2022		SeqNo: 3314621		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.1	80	120			
Toluene	0.97	0.050	1.000	0	97.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.7	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	70	130			

Sample ID: 2210e20-012ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH22-04 2'	Batch ID: 71199		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/3/2022		SeqNo: 3314624		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	0.9891	0	92.3	68.8	120			
Toluene	0.95	0.049	0.9891	0	95.8	73.6	124			
Ethylbenzene	0.95	0.049	0.9891	0	96.0	72.7	129			
Xylenes, Total	2.9	0.099	2.967	0.01881	95.5	75.7	126			
Surr: 4-Bromofluorobenzene	0.90		0.9891		91.1	70	130			

Sample ID: 2210e20-012amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH22-04 2'	Batch ID: 71199		RunNo: 92280							
Prep Date: 11/1/2022	Analysis Date: 11/3/2022		SeqNo: 3314625		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	0.9930	0	96.4	68.8	120	4.79	20	
Toluene	0.99	0.050	0.9930	0	99.3	73.6	124	3.91	20	
Ethylbenzene	0.99	0.050	0.9930	0	99.3	72.7	129	3.81	20	
Xylenes, Total	3.0	0.099	2.979	0.01881	98.9	75.7	126	3.85	20	
Surr: 4-Bromofluorobenzene	0.92		0.9930		92.9	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2210E20

RcptNo: 1

Received By: Juan Rojas 10/28/2022 7:15:00 AM

Completed By: Sean Livingston 10/28/2022 7:43:44 AM

Reviewed By: *m 10/28/22*

Guam...

San Lopez

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: *KPC 10-28-22*

Special Handling (if applicable)

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

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good				

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:

Todd 36 State 1 "Pad"

Project #:

21E-02816

Project Manager:

Kent StallingsSampler: S. RetaOn Ice: ☐ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 2.3-0.1=2.2 (°C)

Container Type and #

Preservative Type

HEAL No.

2210 E20001002003004005006007008009010011012013014015016017018019020021022023024025026027028029030031032033034035036037038039040041042043044045046047048049050051052053054055056057058059060061062063064065066067068069070071072073074075076077078079080081082083084085086087088089090091092093094095096097098099100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200201202203204205206207208209210211212213214215216217218219220221222223224225226227228229230231232233234235236237238239240241242243244245246247248249250251252253254255256257258259260261262263264265266267268269270271272273274275276277278279280281282283284285286287288289290291292293294295296297298299300301302303304



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

November 28, 2022

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 1 Pad

OrderNo.: 2211737

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 6 sample(s) on 11/12/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-09 0'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 9:45:00 AM

Lab ID: 2211737-001

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	9400	700		mg/Kg	50	11/16/2022 2:25:57 PM
Motor Oil Range Organics (MRO)	7000	2300		mg/Kg	50	11/16/2022 2:25:57 PM
Surr: DNOP	0	21-129	S	%Rec	50	11/16/2022 2:25:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/17/2022 5:36:00 PM
Surr: BFB	105	37.7-212		%Rec	1	11/17/2022 5:36:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/17/2022 5:36:00 PM
Toluene	ND	0.049		mg/Kg	1	11/17/2022 5:36:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/17/2022 5:36:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/17/2022 5:36:00 PM
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	11/17/2022 5:36:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	30000	1500		mg/Kg	500	11/18/2022 10:36:43 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-09 2'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 9:50:00 AM

Lab ID: 2211737-002

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	56	14		mg/Kg	1	11/16/2022 2:57:30 PM
Motor Oil Range Organics (MRO)	74	46		mg/Kg	1	11/16/2022 2:57:30 PM
Surr: DNOP	117	21-129		%Rec	1	11/16/2022 2:57:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/17/2022 5:55:00 PM
Surr: BFB	111	37.7-212		%Rec	1	11/17/2022 5:55:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/17/2022 5:55:00 PM
Toluene	ND	0.047		mg/Kg	1	11/17/2022 5:55:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/17/2022 5:55:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/17/2022 5:55:00 PM
Surr: 4-Bromofluorobenzene	123	70-130		%Rec	1	11/17/2022 5:55:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	2000	61		mg/Kg	20	11/18/2022 10:49:07 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-09 4'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 9:55:00 AM

Lab ID: 2211737-003

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 3:30:39 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/16/2022 3:30:39 PM
Surr: DNOP	115	21-129		%Rec	1	11/16/2022 3:30:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/17/2022 6:15:00 PM
Surr: BFB	105	37.7-212		%Rec	1	11/17/2022 6:15:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	11/17/2022 6:15:00 PM
Toluene	ND	0.046		mg/Kg	1	11/17/2022 6:15:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/17/2022 6:15:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/17/2022 6:15:00 PM
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	11/17/2022 6:15:00 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	1800	60		mg/Kg	20	11/18/2022 12:42:47 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-10 0'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 10:00:00 AM

Lab ID: 2211737-004

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/16/2022 4:02:13 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2022 4:02:13 PM
Surr: DNOP	134	21-129	S	%Rec	1	11/16/2022 4:02:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/17/2022 6:35:00 PM
Surr: BFB	104	37.7-212		%Rec	1	11/17/2022 6:35:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	11/17/2022 6:35:00 PM
Toluene	ND	0.048		mg/Kg	1	11/17/2022 6:35:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/17/2022 6:35:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/17/2022 6:35:00 PM
Surr: 4-Bromofluorobenzene	120	70-130		%Rec	1	11/17/2022 6:35:00 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	460	60		mg/Kg	20	11/18/2022 12:55:12 PM

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

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

Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-10 2'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 10:05:00 AM

Lab ID: 2211737-005

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 8:54:00 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/16/2022 8:54:00 PM
Surr: DNOP	103	21-129		%Rec	1	11/16/2022 8:54:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2022 8:33:00 PM
Surr: BFB	101	37.7-212		%Rec	1	11/17/2022 8:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/17/2022 8:33:00 PM
Toluene	ND	0.050		mg/Kg	1	11/17/2022 8:33:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2022 8:33:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/17/2022 8:33:00 PM
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	11/17/2022 8:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	580	61		mg/Kg	20	11/18/2022 1:07:36 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2211737

Date Reported: 11/28/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-10 4'

Project: Todd 36 State 1 Pad

Collection Date: 11/10/2022 10:10:00 AM

Lab ID: 2211737-006

Matrix: SOIL

Received Date: 11/12/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 9:25:32 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/16/2022 9:25:32 PM
Surr: DNOP	104	21-129		%Rec	1	11/16/2022 9:25:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2022 9:32:00 PM
Surr: BFB	99.6	37.7-212		%Rec	1	11/17/2022 9:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	11/17/2022 9:32:00 PM
Toluene	ND	0.050		mg/Kg	1	11/17/2022 9:32:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2022 9:32:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/17/2022 9:32:00 PM
Surr: 4-Bromofluorobenzene	121	70-130		%Rec	1	11/17/2022 9:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	1500	60		mg/Kg	20	11/18/2022 1:20:01 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 6 of 13

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: MB-71580	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 71580	RunNo: 92686								
Prep Date: 11/17/2022	Analysis Date: 11/17/2022	SeqNo: 3334966 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-71580	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 71580	RunNo: 92686								
Prep Date: 11/17/2022	Analysis Date: 11/17/2022	SeqNo: 3334967 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	90	110			

Sample ID: MB-71590	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 71590	RunNo: 92690								
Prep Date: 11/18/2022	Analysis Date: 11/18/2022	SeqNo: 3336788 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-71590	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 71590	RunNo: 92690								
Prep Date: 11/18/2022	Analysis Date: 11/18/2022	SeqNo: 3336789 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Sample ID: LCS-71580	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 71580	RunNo: 92726								
Prep Date: 11/17/2022	Analysis Date: 11/18/2022	SeqNo: 3337110 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	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 Quantitative 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#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: MB-71513	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 71513	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3330926 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		107	21	129			

Sample ID: 2211737-005AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH22-10 2'	Batch ID: 71514	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3333102 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	13	44.88	0	91.5	36.1	154			
Surr: DNOP	5.2		4.488		116	21	129			

Sample ID: 2211737-005AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH22-10 2'	Batch ID: 71514	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3333103 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	48.36	0	94.7	36.1	154	10.8	33.9	
Surr: DNOP	5.6		4.836		115	21	129	0	0	

Sample ID: LCS-71513	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 71513	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3333123 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	93.1	64.4	127			
Surr: DNOP	5.8		5.000		116	21	129			

Sample ID: LCS-71514	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 71514	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3333124 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	94.1	64.4	127			
Surr: DNOP	5.8		5.000		116	21	129			

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 Quantitative 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#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.

Project: Todd 36 State 1 Pad

Sample ID: MB-71514	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 71514	RunNo: 92609								
Prep Date: 11/15/2022	Analysis Date: 11/16/2022	SeqNo: 3333125		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	21	129			

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 Quantitative 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#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: lcs-71489	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 71489			RunNo: 92685						
Prep Date: 11/14/2022	Analysis Date: 11/17/2022			SeqNo: 3334854			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	106	72.3	137			
Surr: BFB	2200		1000		222	37.7	212			S

Sample ID: mb-71489	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 71489			RunNo: 92685						
Prep Date: 11/14/2022	Analysis Date: 11/17/2022			SeqNo: 3334855			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		105	37.7	212			

Sample ID: lcs-71507	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 71507			RunNo: 92685						
Prep Date: 11/15/2022	Analysis Date: 11/17/2022			SeqNo: 3334878			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.5	72.3	137			
Surr: BFB	2200		1000		216	37.7	212			S

Sample ID: mb-71507	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 71507			RunNo: 92685						
Prep Date: 11/15/2022	Analysis Date: 11/17/2022			SeqNo: 3334879			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	990		1000		98.6	37.7	212			

Sample ID: 2211737-005ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH22-10 2'	Batch ID: 71507			RunNo: 92685						
Prep Date: 11/15/2022	Analysis Date: 11/17/2022			SeqNo: 3334881			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.90	0	92.2	70	130			
Surr: BFB	2100		996.0		216	37.7	212			S

Sample ID: 2211737-005amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH22-10 2'	Batch ID: 71507			RunNo: 92685						
Prep Date: 11/15/2022	Analysis Date: 11/17/2022			SeqNo: 3334882			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: 2211737-005amsd		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH22-10 2'		Batch ID: 71507		RunNo: 92685						
Prep Date: 11/15/2022		Analysis Date: 11/17/2022		SeqNo: 3334882		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.78	0	92.7	70	130	0.0223	20	
Surr: BFB	2100		991.1		212	37.7	212	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 Quantitative 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

Page 11 of 13

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: Ics-71489	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 71489		RunNo: 92685							
Prep Date: 11/14/2022	Analysis Date: 11/17/2022		SeqNo: 3334996		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	115	80	120			
Toluene	1.2	0.050	1.000	0	116	80	120			
Ethylbenzene	1.2	0.050	1.000	0	117	80	120			
Xylenes, Total	3.5	0.10	3.000	0	117	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		130	70	130			

Sample ID: mb-71489	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71489		RunNo: 92685							
Prep Date: 11/14/2022	Analysis Date: 11/17/2022		SeqNo: 3334997		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		123	70	130			

Sample ID: Ics-71507	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 71507		RunNo: 92685							
Prep Date: 11/15/2022	Analysis Date: 11/17/2022		SeqNo: 3335020		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	80	120			
Toluene	1.1	0.050	1.000	0	111	80	120			
Ethylbenzene	1.1	0.050	1.000	0	111	80	120			
Xylenes, Total	3.3	0.10	3.000	0	110	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		120	70	130			

Sample ID: mb-71507	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 71507		RunNo: 92685							
Prep Date: 11/15/2022	Analysis Date: 11/17/2022		SeqNo: 3335021		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		117	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2211737

28-Nov-22

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: 2211737-006ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH22-10 4'	Batch ID: 71507	RunNo: 92685								
Prep Date: 11/15/2022	Analysis Date: 11/17/2022	SeqNo: 3335024	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9940	0	114	68.8	120			
Toluene	1.2	0.050	0.9940	0	116	73.6	124			
Ethylbenzene	1.2	0.050	0.9940	0	118	72.7	129			
Xylenes, Total	3.5	0.099	2.982	0	117	75.7	126			
Surr: 4-Bromofluorobenzene	1.2		0.9940		118	70	130			

Sample ID: 2211737-006amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH22-10 4'	Batch ID: 71507	RunNo: 92685								
Prep Date: 11/15/2022	Analysis Date: 11/17/2022	SeqNo: 3335025	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9911	0	113	68.8	120	1.08	20	
Toluene	1.1	0.050	0.9911	0	115	73.6	124	1.11	20	
Ethylbenzene	1.2	0.050	0.9911	0	117	72.7	129	0.984	20	
Xylenes, Total	3.5	0.099	2.973	0	116	75.7	126	0.875	20	
Surr: 4-Bromofluorobenzene	1.2		0.9911		119	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: **Vertex Resources Services, Inc.**

Work Order Number: **2211737**

RcptNo: 1

Received By: **Kasandra Jimena Garcia** 11/12/2022 8:00:00 AM

Completed By: **Kasandra Jimena Garcia** 11/12/2022 8:30:08 AM

Reviewed By: *KAC 11.12.22*

KAC
KAC

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: *Chc 11/12/22*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			



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

March 30, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 001 Pad

OrderNo.: 2303C31

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 30 sample(s) on 3/24/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:25:00 AM

Lab ID: 2303C31-001

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 10:37:14 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/27/2023 10:37:14 AM
Surr: DNOP	85.9	69-147		%Rec	1	3/27/2023 10:37:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 11:50:15 AM
Surr: BFB	98.5	37.7-212		%Rec	1	3/27/2023 11:50:15 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 11:50:15 AM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 11:50:15 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 11:50:15 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 11:50:15 AM
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	3/27/2023 11:50:15 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	210	60		mg/Kg	20	3/26/2023 9:32:08 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:30:00 AM

Lab ID: 2303C31-002

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 11:39:55 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/27/2023 11:39:55 AM
Surr: DNOP	87.3	69-147		%Rec	1	3/27/2023 11:39:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/27/2023 12:13:56 PM
Surr: BFB	102	37.7-212		%Rec	1	3/27/2023 12:13:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 12:13:56 PM
Toluene	ND	0.048		mg/Kg	1	3/27/2023 12:13:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/27/2023 12:13:56 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/27/2023 12:13:56 PM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	3/27/2023 12:13:56 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	420	60		mg/Kg	20	3/26/2023 9:44:32 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 3'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:35:00 AM

Lab ID: 2303C31-003

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 11:50:21 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/27/2023 11:50:21 AM
Surr: DNOP	89.1	69-147		%Rec	1	3/27/2023 11:50:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/27/2023 12:37:39 PM
Surr: BFB	103	37.7-212		%Rec	1	3/27/2023 12:37:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	3/27/2023 12:37:39 PM
Toluene	ND	0.047		mg/Kg	1	3/27/2023 12:37:39 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/27/2023 12:37:39 PM
Xylenes, Total	ND	0.093		mg/Kg	1	3/27/2023 12:37:39 PM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	3/27/2023 12:37:39 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	360	61		mg/Kg	20	3/26/2023 9:56:57 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:45:00 AM

Lab ID: 2303C31-004

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 12:00:49 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/27/2023 12:00:49 PM
Surr: DNOP	90.1	69-147		%Rec	1	3/27/2023 12:00:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/27/2023 1:01:29 PM
Surr: BFB	103	37.7-212		%Rec	1	3/27/2023 1:01:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 1:01:29 PM
Toluene	ND	0.048		mg/Kg	1	3/27/2023 1:01:29 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/27/2023 1:01:29 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/27/2023 1:01:29 PM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	3/27/2023 1:01:29 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	60		mg/Kg	20	3/26/2023 10:09:22 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:50:00 AM

Lab ID: 2303C31-005

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	3/27/2023 12:21:55 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	3/27/2023 12:21:55 PM
Surr: DNOP	87.8	69-147		%Rec	1	3/27/2023 12:21:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 1:25:18 PM
Surr: BFB	104	37.7-212		%Rec	1	3/27/2023 1:25:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 1:25:18 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 1:25:18 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 1:25:18 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 1:25:18 PM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	3/27/2023 1:25:18 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	490	60		mg/Kg	20	3/26/2023 10:21:47 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 3

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 8:55:00 AM

Lab ID: 2303C31-006

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 12:32:24 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/27/2023 12:32:24 PM
Surr: DNOP	89.2	69-147		%Rec	1	3/27/2023 12:32:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 1:49:09 PM
Surr: BFB	103	37.7-212		%Rec	1	3/27/2023 1:49:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 1:49:09 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 1:49:09 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 1:49:09 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 1:49:09 PM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	3/27/2023 1:49:09 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	610	60		mg/Kg	20	3/26/2023 10:59:00 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:00:00 AM

Lab ID: 2303C31-007

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/27/2023 12:42:53 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/27/2023 12:42:53 PM
Surr: DNOP	88.6	69-147		%Rec	1	3/27/2023 12:42:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 2:13:05 PM
Surr: BFB	104	37.7-212		%Rec	1	3/27/2023 2:13:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 2:13:05 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 2:13:05 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 2:13:05 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 2:13:05 PM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	3/27/2023 2:13:05 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	150	61		mg/Kg	20	3/26/2023 11:11:25 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:05:00 AM

Lab ID: 2303C31-008

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 12:53:24 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/27/2023 12:53:24 PM
Surr: DNOP	89.9	69-147		%Rec	1	3/27/2023 12:53:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 2:37:01 PM
Surr: BFB	107	37.7-212		%Rec	1	3/27/2023 2:37:01 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 2:37:01 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 2:37:01 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 2:37:01 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 2:37:01 PM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	3/27/2023 2:37:01 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	85	60		mg/Kg	20	3/26/2023 11:23:49 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 4'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:10:00 AM

Lab ID: 2303C31-009

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 1:24:50 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/27/2023 1:24:50 PM
Surr: DNOP	91.5	69-147		%Rec	1	3/27/2023 1:24:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/27/2023 3:00:57 PM
Surr: BFB	104	37.7-212		%Rec	1	3/27/2023 3:00:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 3:00:57 PM
Toluene	ND	0.048		mg/Kg	1	3/27/2023 3:00:57 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/27/2023 3:00:57 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/27/2023 3:00:57 PM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	3/27/2023 3:00:57 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	120	60		mg/Kg	20	3/26/2023 11:36:13 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:20:00 AM

Lab ID: 2303C31-010

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 1:35:22 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/27/2023 1:35:22 PM
Surr: DNOP	89.6	69-147		%Rec	1	3/27/2023 1:35:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 3:24:53 PM
Surr: BFB	106	37.7-212		%Rec	1	3/27/2023 3:24:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 3:24:53 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 3:24:53 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 3:24:53 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/27/2023 3:24:53 PM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	3/27/2023 3:24:53 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	2400	150		mg/Kg	50	3/27/2023 1:10:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:25:00 AM

Lab ID: 2303C31-011

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/27/2023 1:45:55 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/27/2023 1:45:55 PM
Surr: DNOP	94.2	69-147		%Rec	1	3/27/2023 1:45:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 4:11:51 PM
Surr: BFB	99.8	37.7-212		%Rec	1	3/27/2023 4:11:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 4:11:51 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 4:11:51 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 4:11:51 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 4:11:51 PM
Surr: 4-Bromofluorobenzene	92.3	70-130		%Rec	1	3/27/2023 4:11:51 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	3000	150		mg/Kg	50	3/27/2023 1:23:16 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 3'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:30:00 AM

Lab ID: 2303C31-012

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 1:56:29 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/27/2023 1:56:29 PM
Surr: DNOP	93.9	69-147		%Rec	1	3/27/2023 1:56:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/27/2023 4:35:28 PM
Surr: BFB	102	37.7-212		%Rec	1	3/27/2023 4:35:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 4:35:28 PM
Toluene	ND	0.047		mg/Kg	1	3/27/2023 4:35:28 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/27/2023 4:35:28 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/27/2023 4:35:28 PM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	3/27/2023 4:35:28 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	2200	60		mg/Kg	20	3/27/2023 12:13:27 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-15 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:35:00 AM

Lab ID: 2303C31-013

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 2:17:32 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/27/2023 2:17:32 PM
Surr: DNOP	84.4	69-147		%Rec	1	3/27/2023 2:17:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 4:59:05 PM
Surr: BFB	98.2	37.7-212		%Rec	1	3/27/2023 4:59:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 4:59:05 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 4:59:05 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 4:59:05 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 4:59:05 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	3/27/2023 4:59:05 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1300	60		mg/Kg	20	3/27/2023 12:25:51 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-15 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:40:00 AM

Lab ID: 2303C31-014

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 2:28:09 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/27/2023 2:28:09 PM
Surr: DNOP	87.0	69-147		%Rec	1	3/27/2023 2:28:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 5:22:38 PM
Surr: BFB	98.0	37.7-212		%Rec	1	3/27/2023 5:22:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 5:22:38 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 5:22:38 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 5:22:38 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/27/2023 5:22:38 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	3/27/2023 5:22:38 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	3100	150		mg/Kg	50	3/27/2023 1:35:41 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-15 3'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:45:00 AM

Lab ID: 2303C31-015

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 2:38:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/27/2023 2:38:45 PM
Surr: DNOP	89.8	69-147		%Rec	1	3/27/2023 2:38:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 5:46:18 PM
Surr: BFB	99.2	37.7-212		%Rec	1	3/27/2023 5:46:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 5:46:18 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 5:46:18 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 5:46:18 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/27/2023 5:46:18 PM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/27/2023 5:46:18 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	3300	150		mg/Kg	50	3/27/2023 1:48:05 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-16 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 9:55:00 AM

Lab ID: 2303C31-016

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 2:49:21 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/27/2023 2:49:21 PM
Surr: DNOP	90.8	69-147		%Rec	1	3/27/2023 2:49:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/27/2023 6:09:54 PM
Surr: BFB	100	37.7-212		%Rec	1	3/27/2023 6:09:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 6:09:54 PM
Toluene	ND	0.047		mg/Kg	1	3/27/2023 6:09:54 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/27/2023 6:09:54 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/27/2023 6:09:54 PM
Surr: 4-Bromofluorobenzene	92.7	70-130		%Rec	1	3/27/2023 6:09:54 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	3/27/2023 12:11:38 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-16 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:00:00 AM

Lab ID: 2303C31-017

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 3:00:09 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/27/2023 3:00:09 PM
Surr: DNOP	91.8	69-147		%Rec	1	3/27/2023 3:00:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 6:33:34 PM
Surr: BFB	101	37.7-212		%Rec	1	3/27/2023 6:33:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 6:33:34 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 6:33:34 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 6:33:34 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/27/2023 6:33:34 PM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/27/2023 6:33:34 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	290	60		mg/Kg	20	3/27/2023 12:24:02 PM

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

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

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-16 3'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:05:00 AM

Lab ID: 2303C31-018

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 3:10:54 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/27/2023 3:10:54 PM
Surr: DNOP	87.3	69-147		%Rec	1	3/27/2023 3:10:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 6:57:10 PM
Surr: BFB	99.3	37.7-212		%Rec	1	3/27/2023 6:57:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 6:57:10 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 6:57:10 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 6:57:10 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/27/2023 6:57:10 PM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	3/27/2023 6:57:10 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	280	60		mg/Kg	20	3/27/2023 12:36:27 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-17 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:20:00 AM

Lab ID: 2303C31-019

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 3:21:40 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/27/2023 3:21:40 PM
Surr: DNOP	90.5	69-147		%Rec	1	3/27/2023 3:21:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 7:20:46 PM
Surr: BFB	99.1	37.7-212		%Rec	1	3/27/2023 7:20:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/27/2023 7:20:46 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 7:20:46 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 7:20:46 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/27/2023 7:20:46 PM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/27/2023 7:20:46 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	360	60		mg/Kg	20	3/27/2023 12:48:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-17 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:25:00 AM

Lab ID: 2303C31-020

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/27/2023 3:32:24 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/27/2023 3:32:24 PM
Surr: DNOP	91.4	69-147		%Rec	1	3/27/2023 3:32:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/27/2023 7:44:20 PM
Surr: BFB	98.6	37.7-212		%Rec	1	3/27/2023 7:44:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/27/2023 7:44:20 PM
Toluene	ND	0.048		mg/Kg	1	3/27/2023 7:44:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/27/2023 7:44:20 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/27/2023 7:44:20 PM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	3/27/2023 7:44:20 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	78	60		mg/Kg	20	3/27/2023 1:01:16 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-17 4'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:30:00 AM

Lab ID: 2303C31-021

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 8:47:02 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/28/2023 8:47:02 AM
Surr: DNOP	92.9	69-147		%Rec	1	3/28/2023 8:47:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 8:25:00 PM
Surr: BFB	87.8	37.7-212		%Rec	1	3/27/2023 8:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/27/2023 8:25:00 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 8:25:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 8:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 8:25:00 PM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	3/27/2023 8:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	78	60		mg/Kg	20	3/27/2023 1:38:30 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-18 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:45:00 AM

Lab ID: 2303C31-022

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 9:17:44 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/28/2023 9:17:44 AM
Surr: DNOP	87.7	69-147		%Rec	1	3/28/2023 9:17:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 9:29:00 PM
Surr: BFB	91.3	37.7-212		%Rec	1	3/27/2023 9:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/27/2023 9:29:00 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 9:29:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 9:29:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/27/2023 9:29:00 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	3/27/2023 9:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	410	60		mg/Kg	20	3/27/2023 2:15:44 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-18 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:50:00 AM

Lab ID: 2303C31-023

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 9:28:22 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/28/2023 9:28:22 AM
Surr: DNOP	92.0	69-147		%Rec	1	3/28/2023 9:28:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/27/2023 10:34:00 PM
Surr: BFB	85.8	37.7-212		%Rec	1	3/27/2023 10:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/27/2023 10:34:00 PM
Toluene	ND	0.047		mg/Kg	1	3/27/2023 10:34:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/27/2023 10:34:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	3/27/2023 10:34:00 PM
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	3/27/2023 10:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	70	60		mg/Kg	20	3/27/2023 2:28:08 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-18 4'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 10:55:00 AM

Lab ID: 2303C31-024

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 9:38:44 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2023 9:38:44 AM
Surr: DNOP	90.2	69-147		%Rec	1	3/28/2023 9:38:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/27/2023 10:56:00 PM
Surr: BFB	88.1	37.7-212		%Rec	1	3/27/2023 10:56:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/27/2023 10:56:00 PM
Toluene	ND	0.050		mg/Kg	1	3/27/2023 10:56:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/27/2023 10:56:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/27/2023 10:56:00 PM
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	3/27/2023 10:56:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	83	60		mg/Kg	20	3/27/2023 2:40:33 PM

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

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

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-19 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:00:00 AM

Lab ID: 2303C31-025

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 9:59:32 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2023 9:59:32 AM
Surr: DNOP	91.4	69-147		%Rec	1	3/28/2023 9:59:32 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/27/2023 11:17:00 PM
Surr: BFB	86.4	37.7-212		%Rec	1	3/27/2023 11:17:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/27/2023 11:17:00 PM
Toluene	ND	0.047		mg/Kg	1	3/27/2023 11:17:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/27/2023 11:17:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/27/2023 11:17:00 PM
Surr: 4-Bromofluorobenzene	87.0	70-130		%Rec	1	3/27/2023 11:17:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	3/27/2023 2:52:57 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-19 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:05:00 AM

Lab ID: 2303C31-026

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 10:09:57 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/28/2023 10:09:57 AM
Surr: DNOP	145	69-147		%Rec	1	3/28/2023 10:09:57 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/27/2023 11:39:00 PM
Surr: BFB	87.1	37.7-212		%Rec	1	3/27/2023 11:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/27/2023 11:39:00 PM
Toluene	ND	0.049		mg/Kg	1	3/27/2023 11:39:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/27/2023 11:39:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/27/2023 11:39:00 PM
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	3/27/2023 11:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	3/27/2023 3:05:22 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-19 4

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:10:00 AM

Lab ID: 2303C31-027

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 10:20:25 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2023 10:20:25 AM
Surr: DNOP	153	69-147	S	%Rec	1	3/28/2023 10:20:25 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023
Surr: BFB	89.6	37.7-212		%Rec	1	3/28/2023
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/28/2023
Toluene	ND	0.049		mg/Kg	1	3/28/2023
Ethylbenzene	ND	0.049		mg/Kg	1	3/28/2023
Xylenes, Total	ND	0.098		mg/Kg	1	3/28/2023
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	3/28/2023
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	3/27/2023 3:17:47 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:20:00 AM

Lab ID: 2303C31-028

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 10:30:52 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/28/2023 10:30:52 AM
Surr: DNOP	148	69-147	S	%Rec	1	3/28/2023 10:30:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 12:22:00 AM
Surr: BFB	87.3	37.7-212		%Rec	1	3/28/2023 12:22:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/28/2023 12:22:00 AM
Toluene	ND	0.050		mg/Kg	1	3/28/2023 12:22:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/28/2023 12:22:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/28/2023 12:22:00 AM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	3/28/2023 12:22:00 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	1400	60		mg/Kg	20	3/27/2023 3:30:12 PM

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

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

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:25:00 AM

Lab ID: 2303C31-029

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 10:51:45 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/28/2023 10:51:45 AM
Surr: DNOP	151	69-147	S	%Rec	1	3/28/2023 10:51:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 12:43:00 AM
Surr: BFB	87.3	37.7-212		%Rec	1	3/28/2023 12:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/28/2023 12:43:00 AM
Toluene	ND	0.049		mg/Kg	1	3/28/2023 12:43:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/28/2023 12:43:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/28/2023 12:43:00 AM
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	3/28/2023 12:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	1100	60		mg/Kg	20	3/27/2023 3:42:37 PM

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

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

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Analytical Report

Lab Order 2303C31

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 4'

Project: Todd 36 State 001 Pad

Collection Date: 3/22/2023 11:30:00 AM

Lab ID: 2303C31-030

Matrix: SOIL

Received Date: 3/24/2023 7:25:00 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	3/28/2023 11:02:14 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/28/2023 11:02:14 AM
Surr: DNOP	155	69-147	S	%Rec	1	3/28/2023 11:02:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 1:05:00 AM
Surr: BFB	88.3	37.7-212		%Rec	1	3/28/2023 1:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/28/2023 1:05:00 AM
Toluene	ND	0.050		mg/Kg	1	3/28/2023 1:05:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/28/2023 1:05:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/28/2023 1:05:00 AM
Surr: 4-Bromofluorobenzene	89.3	70-130		%Rec	1	3/28/2023 1:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	1100	60		mg/Kg	20	3/27/2023 3:55:01 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: MB-73934	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 73934	RunNo: 95566								
Prep Date: 3/26/2023	Analysis Date: 3/26/2023	SeqNo: 3457047 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73934	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 73934	RunNo: 95566								
Prep Date: 3/26/2023	Analysis Date: 3/26/2023	SeqNo: 3457048 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

Sample ID: MB-73947	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 73947	RunNo: 95598								
Prep Date: 3/27/2023	Analysis Date: 3/27/2023	SeqNo: 3459310 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73947	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 73947	RunNo: 95598								
Prep Date: 3/27/2023	Analysis Date: 3/27/2023	SeqNo: 3459311 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: MB-73927	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73927	RunNo: 95601								
Prep Date: 3/24/2023	Analysis Date: 3/27/2023	SeqNo: 3459544 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.8		10.00		77.9	69	147			

Sample ID: MB-73945	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73945	RunNo: 95601								
Prep Date: 3/27/2023	Analysis Date: 3/28/2023	SeqNo: 3459545 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.3		10.00		93.2	69	147			

Sample ID: MB-73950	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73950	RunNo: 95601								
Prep Date: 3/27/2023	Analysis Date: 3/28/2023	SeqNo: 3459546 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	8.7		10.00		87.2	69	147			

Sample ID: LCS-73927	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73927	RunNo: 95601								
Prep Date: 3/24/2023	Analysis Date: 3/27/2023	SeqNo: 3459549 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.0	61.9	130			
Surr: DNOP	4.3		5.000		86.2	69	147			

Sample ID: LCS-73945	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73945	RunNo: 95601								
Prep Date: 3/27/2023	Analysis Date: 3/28/2023	SeqNo: 3459550 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		88.1	69	147			

Sample ID: LCS-73950	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73950	RunNo: 95601								
Prep Date: 3/27/2023	Analysis Date: 3/28/2023	SeqNo: 3459551 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: LCS-73950	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 73950			RunNo: 95601						
Prep Date: 3/27/2023	Analysis Date: 3/28/2023			SeqNo: 3459551			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.8	61.9	130			
Surr: DNOP	4.3		5.000		85.5	69	147			

Sample ID: 2303C31-001AMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: BH23-11 0'	Batch ID: 73927			RunNo: 95601						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3459643			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.9	49.46	0	116	54.2	135			
Surr: DNOP	4.7		4.946		95.3	69	147			

Sample ID: 2303C31-021AMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: BH23-17 4'	Batch ID: 73950			RunNo: 95601						
Prep Date: 3/27/2023	Analysis Date: 3/28/2023			SeqNo: 3459644			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	9.6	47.85	0	78.2	54.2	135			
Surr: DNOP	4.2		4.785		88.4	69	147			

Sample ID: 2303C31-021AMSD	SampType: MSD			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: BH23-17 4'	Batch ID: 73950			RunNo: 95601						
Prep Date: 3/27/2023	Analysis Date: 3/28/2023			SeqNo: 3459649			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.5	47.30	0	103	54.2	135	26.5	29.2	
Surr: DNOP	4.6		4.730		97.9	69	147	0	0	

Sample ID: 2303C31-001AMSD	SampType: MSD			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: BH23-11 0'	Batch ID: 73927			RunNo: 95601						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3459654			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.9	49.65	0	106	54.2	135	8.54	29.2	
Surr: DNOP	4.9		4.965		98.8	69	147	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: lcs-73920	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 73920			RunNo: 95575						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3457788			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	93.8	70	130			
Surr: BFB	1900		1000		194	37.7	212			

Sample ID: mb-73920	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 73920			RunNo: 95575						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3457789			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	37.7	212			

Sample ID: 2303c31-001ams	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH23-11 0'	Batch ID: 73920			RunNo: 95575						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3458323			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.80	0	88.6	70	130			
Surr: BFB	1900		992.1		191	37.7	212			

Sample ID: 2303c31-001amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH23-11 0'	Batch ID: 73920			RunNo: 95575						
Prep Date: 3/24/2023	Analysis Date: 3/27/2023			SeqNo: 3458324			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.80	0	89.7	70	130	1.21	20	
Surr: BFB	1900		992.1		192	37.7	212	0	0	

Sample ID: 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: GS95595			RunNo: 95595						
Prep Date:	Analysis Date: 3/27/2023			SeqNo: 3459406			Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2200		1000		215	37.7	212			S

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: GS95595			RunNo: 95595						
Prep Date:	Analysis Date: 3/27/2023			SeqNo: 3459407			Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	37.7	212			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: ics-73922	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459448		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	89.5	70	130			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: mb-73922	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459449		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	910		1000		91.1	37.7	212			

Sample ID: 2303c31-021ams	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: BH23-17 4'	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459451		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.83	0	89.7	70	130			
Surr: BFB	2100		993.0		209	37.7	212			

Sample ID: 2303c31-021amsd	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: BH23-17 4'	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459452		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	4.9	24.49	0	74.4	70	130	19.9	20	
Surr: BFB	2000		979.4		199	37.7	212	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 Quantitative 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#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: LCS-73920	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 73920		RunNo: 95575							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3457791		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.3	80	120			
Toluene	0.93	0.050	1.000	0	93.5	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.3	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.9	70	130			

Sample ID: mb-73920	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 73920		RunNo: 95575							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3457792		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	0.91		1.000		90.8	70	130			

Sample ID: 2303c31-002ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-11 2'	Batch ID: 73920		RunNo: 95575							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3458331		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9643	0	92.0	68.8	120			
Toluene	0.88	0.048	0.9643	0	91.6	73.6	124			
Ethylbenzene	0.88	0.048	0.9643	0	90.9	72.7	129			
Xylenes, Total	2.6	0.096	2.893	0	90.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.90		0.9643		93.8	70	130			

Sample ID: 2303c31-002amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-11 2'	Batch ID: 73920		RunNo: 95575							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3458332		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.024	0.9488	0	88.7	68.8	120	5.34	20	
Toluene	0.83	0.047	0.9488	0	87.4	73.6	124	6.28	20	
Ethylbenzene	0.83	0.047	0.9488	0	87.8	72.7	129	5.11	20	
Xylenes, Total	2.5	0.095	2.846	0	87.3	75.7	126	4.84	20	
Surr: 4-Bromofluorobenzene	0.90		0.9488		95.1	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C31

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: ics-73922	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459504		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.1	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.0	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.3	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.8	70	130			

Sample ID: mb-73922	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459505		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		89.0	70	130			

Sample ID: 2303c31-022ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-18 0'	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459508		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	0.9911	0	91.7	68.8	120			
Toluene	0.91	0.050	0.9911	0	91.9	73.6	124			
Ethylbenzene	0.89	0.050	0.9911	0	90.2	72.7	129			
Xylenes, Total	2.7	0.099	2.973	0	89.3	75.7	126			
Surr: 4-Bromofluorobenzene	0.91		0.9911		91.4	70	130			

Sample ID: 2303c31-022amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-18 0'	Batch ID: 73922		RunNo: 95595							
Prep Date: 3/24/2023	Analysis Date: 3/27/2023		SeqNo: 3459509		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	0.9930	0	91.7	68.8	120	0.154	20	
Toluene	0.93	0.050	0.9930	0	93.4	73.6	124	1.78	20	
Ethylbenzene	0.92	0.050	0.9930	0	92.5	72.7	129	2.78	20	
Xylenes, Total	2.7	0.099	2.979	0	91.9	75.7	126	3.03	20	
Surr: 4-Bromofluorobenzene	0.88		0.9930		88.5	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C31
30-Mar-23

Client: Vertex Resources Services, Inc.
Project: Todd 36 State 001 Pad

Sample ID: 100ng btex lcs	SampType: LCS	TestCode: EPA Method 8021B: Volatiles
Client ID: LCSS	Batch ID: BS95595	RunNo: 95595
Prep Date:	Analysis Date: 3/27/2023	SeqNo: 3459528 Units: %Rec
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: 4-Bromofluorobenzene	1.0	1.000 102 70 130

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles
Client ID: PBS	Batch ID: BS95595	RunNo: 95595
Prep Date:	Analysis Date: 3/27/2023	SeqNo: 3459529 Units: %Rec
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: 4-Bromofluorobenzene	1.0	1.000 99.8 70 130

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit



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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2303C31

RcptNo: 1

Received By: Tracy Casarrubias 3/24/2023 7:25:00 AM

Completed By: Tracy Casarrubias 3/24/2023 7:45:31 AM

Reviewed By:

CMR

*3/24/23
CMR
3/24/23*

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: _____

CMR 3-24-23

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

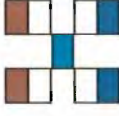
Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good	Yes	Morty		



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

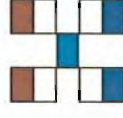
4901 Hawkins NE - Albuquerque, NM 87109

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

received Cham: 1670202511337 Record		Turn-Around Time:			
Client: Vertex		<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush 48-hr			
Mailing Address: (direct bill to Devon)		Project Name:			
Phone #:		Todd 36 State #001 Pad			
email or Fax#:		Project #:			
QA/QC Package:		22E-02816-22			
<input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Project Manager:			
Accreditation: <input type="checkbox"/> Az Compliance		Kent Stallings			
<input type="checkbox"/> NELAC <input type="checkbox"/> Other		kstallings@vertex.ca			
<input type="checkbox"/> EDD (Type)		Sampler: L. Pullman			
		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No marty			
		# of Coolers: 1			
		Cooler Temp (including CF): 4.2-0.2 = 4.0			
		HEAL No. 2303C31			
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type
03/22/23	8:25	Soil	BH23-11 0'	1, 4oz jar	001
03/22/23	8:30	Soil	BH23-11 2'	1, 4oz jar	002
03/22/23	8:35	Soil	BH23-11 3'	1, 4oz jar	003
03/22/23	8:45	Soil	BH23-12 0'	1, 4oz jar	004
03/22/23	8:50	Soil	BH23-12 2'	1, 4oz jar	005
03/22/23	8:55	Soil	BH23-12 3'	1, 4oz jar	006
03/22/23	9:00	Soil	BH23-13 0'	1, 4oz jar	007
03/22/23	9:05	Soil	BH23-13 2'	1, 4oz jar	008
03/22/23	9:10	Soil	BH23-13 4'	1, 4oz jar	009
03/22/23	9:20	Soil	BH23-14 0'	1, 4oz jar	010
03/22/23	9:25	Soil	BH23-14 2'	1, 4oz jar	011
03/22/23	9:30	Soil	BH23-14 3'	1, 4oz jar	012
Date:	Time:	Relinquished by:	Received by: Vertex Date: 3/23/23 Time: 7:25		
Date:	Time:	Relinquished by:	Received by: Vertex Date: 3/24/23 Time: 7:25		

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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HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

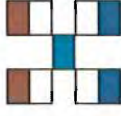
Received @ OQCD: 1/17/2025 11:32:37 AM Chain of Custody Record		Turn-Around Time:	
Client:	Vertex	<input type="checkbox"/> Standard	<input checked="" type="checkbox"/> Rush <u>48-hr</u>
Mailing Address: (direct bill to Devon)		Project Name:	
		Todd 36 State #001 Pad	
		Project #:	
Phone #:		22E-02816-22	
email or Fax#:		Project Manager:	
QA/QC Package:		Kent Stallings	
<input type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	kstallings@vertex.ca	
Accreditation: <input type="checkbox"/> Az Compliance		Sampler: L. Pullman	
<input type="checkbox"/> NELAC <input type="checkbox"/> Other _____		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> EDD (Type) _____		# of Coolers: 1	

Date	Time	Matrix	Sample Name	Cooler Temp(Including CF): 4.2-0.2 = 4.0 °C		HEAL No. 2303031	Preservative Type	Container Type and #	BTEX / MTB	TPH:8015(D)	8081 Pestic	EDB (Metho	PAHs by 83	RCRA 8 Me	Cl, F, Br, N	8260 (VOA)	8270 (Semi-	Total Colifor
03/22/23	9:35	Soil	BH23-15 0'					1, 4oz jar	X	X					X			
03/22/23	9:40	Soil	BH23-15 2'					1, 4oz jar	X	X					X			
03/22/23	9:45	Soil	BH23-15 3'					1, 4oz jar	X	X					X			
03/22/23	9:55	Soil	BH23-16 0'					1, 4oz jar	X	X					X			
03/22/23	10:00	Soil	BH23-16 2'					1, 4oz jar	X	X					X			
03/22/23	10:05	Soil	BH23-16 3'					1, 4oz jar	X	X					X			
03/22/23	10:20	Soil	BH23-17 0'					1, 4oz jar	X	X					X			
03/22/23	10:25	Soil	BH23-17 2'					1, 4oz jar	X	X					X			
03/22/23	10:30	Soil	BH23-17 4'					1, 4oz jar	X	X					X			
03/22/23	10:45	Soil	BH23-18 0'					1, 4oz jar	X	X					X			
03/22/23	10:50	Soil	BH23-18 2'					1, 4oz jar	X	X					X			
03/22/23	10:55	Soil	BH23-18 4'					1, 4oz jar	X	X					X			

Remarks:	Direct bill to Devon, Dale Woodall cc. kstallings@vertex.ca for Final Report
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 $\frac{2}{3}$

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



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

received Chain-Of-Custody Record						Turn-Around Time:	
Client: Vertex		<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush				48-hr	
Mailing Address: (direct bill to Devon)						Project Name:	
Phone #: 22E-02816-22						Todd 36 State #001 Pad	
email or Fax#:						Project #:	
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)						Project Manager: Kent Stallings kstallings@vertex.ca	
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other _____						Sampler: L. Pullman	
<input type="checkbox"/> EDD (Type) _____						On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>marty</i>	
						# of Coolers: 1	
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	Cooler Temp (including CP): 4.2 - 0.2 = 4.0 °C
03/22/23	11:00	Soil	BH23-19 0'	1, 4oz jar		2203031	025
03/22/23	11:05	Soil	BH23-19 2'	1, 4oz jar			026
03/22/23	11:10	Soil	BH23-19 4'	1, 4oz jar			027
03/22/23	11:20	Soil	BH23-20 0'	1, 4oz jar			028
03/22/23	11:25	Soil	BH23-20 2'	1, 4oz jar			029
03/22/23	11:30	Soil	BH23-20 4'	1, 4oz jar			030
Date: 3-23-23	Time: 0700	Relinquished by: <i>Soban Pullman</i>	Via: <i>Curran</i>	Date: 3/23/23	Time: 7:00	Received by: <i>Curran</i>	
Date: 3/23/23	Time: 1900	Relinquished by: <i>Pullman</i>	Via: <i>Curran</i>	Date: 3/24/23	Time: 7:25	Received by: <i>Curran</i>	

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



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

March 30, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 001 Pad

OrderNo.: 2303D16

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/28/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-26 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 7:25:00 AM

Lab ID: 2303D16-001

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/30/2023 3:22:38 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2023 3:22:38 AM
Surr: DNOP	149	69-147	S	%Rec	1	3/30/2023 3:22:38 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 11:03:05 AM
Surr: BFB	104	37.7-212		%Rec	1	3/29/2023 11:03:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 11:03:05 AM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 11:03:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 11:03:05 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/29/2023 11:03:05 AM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	3/29/2023 11:03:05 AM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3800	150		mg/Kg	50	3/30/2023 4:14:11 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-26 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 7:30:00 AM

Lab ID: 2303D16-002

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/30/2023 3:33:16 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2023 3:33:16 AM
Surr: DNOP	106	69-147		%Rec	1	3/30/2023 3:33:16 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 11:26:48 AM
Surr: BFB	105	37.7-212		%Rec	1	3/29/2023 11:26:48 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 11:26:48 AM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 11:26:48 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 11:26:48 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/29/2023 11:26:48 AM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/29/2023 11:26:48 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	380	60		mg/Kg	20	3/29/2023 12:06:20 AM

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

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

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Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-26 4'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 7:35:00 AM

Lab ID: 2303D16-003

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/30/2023 3:43:54 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/30/2023 3:43:54 AM
Surr: DNOP	110	69-147		%Rec	1	3/30/2023 3:43:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 11:50:11 AM
Surr: BFB	105	37.7-212		%Rec	1	3/29/2023 11:50:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 11:50:11 AM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 11:50:11 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 11:50:11 AM
Xylenes, Total	ND	0.095		mg/Kg	1	3/29/2023 11:50:11 AM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	3/29/2023 11:50:11 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1700	60		mg/Kg	20	3/29/2023 12:18:41 AM

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

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

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Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-27 0'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 7:40:00 AM

Lab ID: 2303D16-004

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/30/2023 3:54:45 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/30/2023 3:54:45 AM
Surr: DNOP	129	69-147		%Rec	1	3/30/2023 3:54:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/29/2023 12:13:45 PM
Surr: BFB	108	37.7-212		%Rec	1	3/29/2023 12:13:45 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 12:13:45 PM
Toluene	ND	0.047		mg/Kg	1	3/29/2023 12:13:45 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/29/2023 12:13:45 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/29/2023 12:13:45 PM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/29/2023 12:13:45 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	60		mg/Kg	20	3/29/2023 12:31:01 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 4 of 12

Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-27 2'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 7:45:00 AM

Lab ID: 2303D16-005

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/29/2023 7:58:04 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/29/2023 7:58:04 PM
Surr: DNOP	91.1	69-147		%Rec	1	3/29/2023 7:58:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/29/2023 12:37:17 PM
Surr: BFB	101	37.7-212		%Rec	1	3/29/2023 12:37:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/29/2023 12:37:17 PM
Toluene	ND	0.050		mg/Kg	1	3/29/2023 12:37:17 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/29/2023 12:37:17 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/29/2023 12:37:17 PM
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	3/29/2023 12:37:17 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	520	59		mg/Kg	20	3/29/2023 12:43:21 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-27 3'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 8:55:00 AM

Lab ID: 2303D16-006

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/29/2023 8:19:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/29/2023 8:19:31 PM
Surr: DNOP	86.5	69-147		%Rec	1	3/29/2023 8:19:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 1:00:42 PM
Surr: BFB	101	37.7-212		%Rec	1	3/29/2023 1:00:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 1:00:42 PM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 1:00:42 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 1:00:42 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/29/2023 1:00:42 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	3/29/2023 1:00:42 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	610	60		mg/Kg	20	3/29/2023 12:55:42 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 5'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 9:20:00 AM

Lab ID: 2303D16-007

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 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	3/29/2023 8:30:15 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/29/2023 8:30:15 PM
Surr: DNOP	86.3	69-147		%Rec	1	3/29/2023 8:30:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/29/2023 1:24:16 PM
Surr: BFB	101	37.7-212		%Rec	1	3/29/2023 1:24:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	3/29/2023 1:24:16 PM
Toluene	ND	0.048		mg/Kg	1	3/29/2023 1:24:16 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/29/2023 1:24:16 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/29/2023 1:24:16 PM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	3/29/2023 1:24:16 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	4500	150		mg/Kg	50	3/30/2023 4:26:35 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303D16

Date Reported: 3/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 6'

Project: Todd 36 State 001 Pad

Collection Date: 3/24/2023 10:10:00 AM

Lab ID: 2303D16-008

Matrix: SOIL

Received Date: 3/28/2023 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	3/29/2023 8:40:58 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	3/29/2023 8:40:58 PM
Surr: DNOP	89.6	69-147		%Rec	1	3/29/2023 8:40:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/29/2023 1:47:41 PM
Surr: BFB	98.6	37.7-212		%Rec	1	3/29/2023 1:47:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	3/29/2023 1:47:41 PM
Toluene	ND	0.050		mg/Kg	1	3/29/2023 1:47:41 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/29/2023 1:47:41 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2023 1:47:41 PM
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	3/29/2023 1:47:41 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	3200	150		mg/Kg	50	3/30/2023 4:38:59 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 2303D16
30-Mar-23

Client: Vertex Resources Services, Inc.
Project: Todd 36 State 001 Pad

Sample ID: MB-73990	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 73990	RunNo: 95609								
Prep Date: 3/28/2023	Analysis Date: 3/28/2023	SeqNo: 3461355		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73990	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 73990	RunNo: 95609								
Prep Date: 3/28/2023	Analysis Date: 3/28/2023	SeqNo: 3461356		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quantitative 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#: 2303D16

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: MB-73986	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73986	RunNo: 95645								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3461196 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		109	69	147			

Sample ID: LCS-73986	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73986	RunNo: 95645								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3461197 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	61.9	130			
Surr: DNOP	5.9		5.000		119	69	147			

Sample ID: MB-73987	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73987	RunNo: 95646								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3461648 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.2		10.00		91.6	69	147			

Sample ID: LCS-73987	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73987	RunNo: 95646								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3461649 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.8	61.9	130			
Surr: DNOP	4.4		5.000		87.3	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 Quantitative 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#: 2303D16

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: ics-73975	SampType: LCS				TestCode: EPA Method 8015D: Gasoline Range					
Client ID: LCSS	Batch ID: 73975				RunNo: 95642					
Prep Date: 3/28/2023	Analysis Date: 3/29/2023				SeqNo: 3461081	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	70	130			
Surr: BFB	2000		1000		202	37.7	212			

Sample ID: mb-73975	SampType: MBLK				TestCode: EPA Method 8015D: Gasoline Range					
Client ID: PBS	Batch ID: 73975				RunNo: 95642					
Prep Date: 3/28/2023	Analysis Date: 3/29/2023				SeqNo: 3461082	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	37.7	212			

Sample ID: 2303d16-001ams	SampType: MS				TestCode: EPA Method 8015D: Gasoline Range					
Client ID: BH23-26 0'	Batch ID: 73975				RunNo: 95642					
Prep Date: 3/28/2023	Analysis Date: 3/29/2023				SeqNo: 3461873	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.32	0	95.0	70	130			
Surr: BFB	1900		972.8		198	37.7	212			

Sample ID: 2303d16-001amsd	SampType: MSD				TestCode: EPA Method 8015D: Gasoline Range					
Client ID: BH23-26 0'	Batch ID: 73975				RunNo: 95642					
Prep Date: 3/28/2023	Analysis Date: 3/29/2023				SeqNo: 3461874	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	24.02	0	91.6	70	130	4.81	20	
Surr: BFB	1900		960.6		200	37.7	212	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 Quantitative 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#: 2303D16

30-Mar-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: LCS-73975	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 73975		RunNo: 95642							
Prep Date: 3/28/2023	Analysis Date: 3/29/2023		SeqNo: 3461088		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.9	80	120			
Toluene	0.91	0.050	1.000	0	91.2	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.0	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.9	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	70	130			

Sample ID: mb-73975	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 73975		RunNo: 95642							
Prep Date: 3/28/2023	Analysis Date: 3/29/2023		SeqNo: 3461089		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		89.4	70	130			

Sample ID: 2303d16-002ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-26 2'	Batch ID: 73975		RunNo: 95642							
Prep Date: 3/28/2023	Analysis Date: 3/29/2023		SeqNo: 3461924		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9775	0	95.7	68.8	120			
Toluene	0.94	0.049	0.9775	0	95.9	73.6	124			
Ethylbenzene	0.93	0.049	0.9775	0	95.3	72.7	129			
Xylenes, Total	2.8	0.098	2.933	0	95.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.88		0.9775		90.3	70	130			

Sample ID: 2303d16-002amsd	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: BH23-26 2'	Batch ID: 73975		RunNo: 95642							
Prep Date: 3/28/2023	Analysis Date: 3/29/2023		SeqNo: 3461925		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9606	0	97.7	68.8	120	0.355	20	
Toluene	0.93	0.048	0.9606	0	97.0	73.6	124	0.676	20	
Ethylbenzene	0.94	0.048	0.9606	0	97.9	72.7	129	0.978	20	
Xylenes, Total	2.8	0.096	2.882	0	96.9	75.7	126	0.0152	20	
Surr: 4-Bromofluorobenzene	0.89		0.9606		92.5	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: **Vertex Resources Services, Inc.**

Work Order Number: **2303D16**

RcptNo: 1

Received By: **Juan Rojas** 3/28/2023 7:55:00 AM

Completed By: **Desiree Dominguez** 3/28/2023 8:31:24 AM

Reviewed By: **DAD** 3/28/23

Juan Rojas

Desiree Dominguez

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 $>0^{\circ}\text{C}$ 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: 3/28/23

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

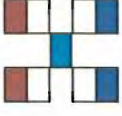
Client Instructions: _____

16. Additional remarks:

Client information missing on COC. -DAD 3/28/23

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Morty		



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

[illegible]

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



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

April 03, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd State 001 Pad

OrderNo.: 2303C84

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 15 sample(s) on 3/25/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-21 0'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 11:40:00 AM

Lab ID: 2303C84-001

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 1:09:47 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/29/2023 1:09:47 AM
Surr: DNOP	93.3	69-147		%Rec	1	3/29/2023 1:09:47 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 2:16:00 PM
Surr: BFB	83.4	37.7-212		%Rec	1	3/28/2023 2:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/28/2023 2:16:00 PM
Toluene	ND	0.050		mg/Kg	1	3/28/2023 2:16:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/28/2023 2:16:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/28/2023 2:16:00 PM
Surr: 4-Bromofluorobenzene	83.1	70-130		%Rec	1	3/28/2023 2:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	200	60		mg/Kg	20	3/28/2023 6:33:23 PM

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

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

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-21 2'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 11:45:00 AM

Lab ID: 2303C84-002

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 1:30:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/29/2023 1:30:28 AM
Surr: DNOP	90.5	69-147		%Rec	1	3/29/2023 1:30:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/28/2023 2:38:00 PM
Surr: BFB	87.1	37.7-212		%Rec	1	3/28/2023 2:38:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/28/2023 2:38:00 PM
Toluene	ND	0.048		mg/Kg	1	3/28/2023 2:38:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/28/2023 2:38:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/28/2023 2:38:00 PM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	3/28/2023 2:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	340	60		mg/Kg	20	3/28/2023 7:35:28 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-21 4'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 11:50:00 AM

Lab ID: 2303C84-003

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 1:40:52 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/29/2023 1:40:52 AM
Surr: DNOP	90.0	69-147		%Rec	1	3/29/2023 1:40:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/28/2023 3:00:00 PM
Surr: BFB	89.4	37.7-212		%Rec	1	3/28/2023 3:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/28/2023 3:00:00 PM
Toluene	ND	0.047		mg/Kg	1	3/28/2023 3:00:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/28/2023 3:00:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/28/2023 3:00:00 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	3/28/2023 3:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	460	60		mg/Kg	20	3/28/2023 7:47:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-22 0'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:00:00 PM

Lab ID: 2303C84-004

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 1:51:18 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/29/2023 1:51:18 AM
Surr: DNOP	91.4	69-147		%Rec	1	3/29/2023 1:51:18 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/28/2023 3:21:00 PM
Surr: BFB	87.5	37.7-212		%Rec	1	3/28/2023 3:21:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/28/2023 3:21:00 PM
Toluene	ND	0.048		mg/Kg	1	3/28/2023 3:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/28/2023 3:21:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	3/28/2023 3:21:00 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	3/28/2023 3:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	380	60		mg/Kg	20	3/28/2023 8:00:16 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-22 2'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:05:00 PM

Lab ID: 2303C84-005

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 2:01:44 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/29/2023 2:01:44 AM
Surr: DNOP	93.1	69-147		%Rec	1	3/29/2023 2:01:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 3:43:00 PM
Surr: BFB	89.2	37.7-212		%Rec	1	3/28/2023 3:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/28/2023 3:43:00 PM
Toluene	ND	0.049		mg/Kg	1	3/28/2023 3:43:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/28/2023 3:43:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/28/2023 3:43:00 PM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	3/28/2023 3:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	72	60		mg/Kg	20	3/28/2023 8:12:41 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-22 4'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:10:00 PM

Lab ID: 2303C84-006

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 2:22:28 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/29/2023 2:22:28 AM
Surr: DNOP	92.9	69-147		%Rec	1	3/29/2023 2:22:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/28/2023 4:05:00 PM
Surr: BFB	92.2	37.7-212		%Rec	1	3/28/2023 4:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	3/28/2023 4:05:00 PM
Toluene	ND	0.047		mg/Kg	1	3/28/2023 4:05:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/28/2023 4:05:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/28/2023 4:05:00 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	3/28/2023 4:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	3/28/2023 8:25:05 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 0'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:15:00 PM

Lab ID: 2303C84-007

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 2:33:04 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/29/2023 2:33:04 AM
Surr: DNOP	97.7	69-147		%Rec	1	3/29/2023 2:33:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 4:48:00 PM
Surr: BFB	89.3	37.7-212		%Rec	1	3/28/2023 4:48:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 6:11:00 PM
Toluene	ND	0.050		mg/Kg	1	3/29/2023 6:11:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/29/2023 6:11:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/29/2023 6:11:00 PM
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	3/29/2023 6:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1100	60		mg/Kg	20	3/28/2023 7:47:06 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 2'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:20:00 PM

Lab ID: 2303C84-008

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	3/29/2023 2:43:37 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/29/2023 2:43:37 AM
Surr: DNOP	99.1	69-147		%Rec	1	3/29/2023 2:43:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 5:09:00 PM
Surr: BFB	86.8	37.7-212		%Rec	1	3/28/2023 5:09:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/29/2023 6:33:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 6:33:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 6:33:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	3/29/2023 6:33:00 PM
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	3/29/2023 6:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1900	60		mg/Kg	20	3/28/2023 7:59:28 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 3'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 12:25:00 PM

Lab ID: 2303C84-009

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 3:04:25 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/29/2023 3:04:25 AM
Surr: DNOP	101	69-147		%Rec	1	3/29/2023 3:04:25 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 5:31:00 PM
Surr: BFB	88.2	37.7-212		%Rec	1	3/28/2023 5:31:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 6:54:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 6:54:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 6:54:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2023 6:54:00 PM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	1	3/29/2023 6:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	6100	300		mg/Kg	100	3/30/2023 3:49:21 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 0'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 1:50:00 PM

Lab ID: 2303C84-010

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 3:14:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/29/2023 3:14:54 AM
Surr: DNOP	88.7	69-147		%Rec	1	3/29/2023 3:14:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 5:52:00 PM
Surr: BFB	89.3	37.7-212		%Rec	1	3/28/2023 5:52:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 7:16:00 PM
Toluene	ND	0.050		mg/Kg	1	3/29/2023 7:16:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/29/2023 7:16:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	3/29/2023 7:16:00 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	3/29/2023 7:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1900	60		mg/Kg	20	3/28/2023 9:13:31 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 2'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 1:55:00 PM

Lab ID: 2303C84-011

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 3:25:22 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/29/2023 3:25:22 AM
Surr: DNOP	90.8	69-147		%Rec	1	3/29/2023 3:25:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 6:14:00 PM
Surr: BFB	95.7	37.7-212		%Rec	1	3/28/2023 6:14:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/29/2023 7:38:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 7:38:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 7:38:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2023 7:38:00 PM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	3/29/2023 7:38:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1900	60		mg/Kg	20	3/28/2023 9:25:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 4'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 2:00:00 PM

Lab ID: 2303C84-012

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 3:35:48 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/29/2023 3:35:48 AM
Surr: DNOP	92.7	69-147		%Rec	1	3/29/2023 3:35:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 6:36:00 PM
Surr: BFB	97.3	37.7-212		%Rec	1	3/28/2023 6:36:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 7:59:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 7:59:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 7:59:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2023 7:59:00 PM
Surr: 4-Bromofluorobenzene	89.7	70-130		%Rec	1	3/29/2023 7:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	2600	150		mg/Kg	50	3/30/2023 4:01:46 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-25 0'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 2:50:00 PM

Lab ID: 2303C84-013

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	3/29/2023 3:56:29 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	3/29/2023 3:56:29 AM
Surr: DNOP	90.4	69-147		%Rec	1	3/29/2023 3:56:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 6:58:00 PM
Surr: BFB	99.3	37.7-212		%Rec	1	3/28/2023 6:58:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	3/29/2023 8:21:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 8:21:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 8:21:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2023 8:21:00 PM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	3/29/2023 8:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	61		mg/Kg	20	3/28/2023 9:50:33 PM

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

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

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Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-25 2'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 2:55:00 PM

Lab ID: 2303C84-014

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/29/2023 4:06:52 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/29/2023 4:06:52 AM
Surr: DNOP	93.1	69-147		%Rec	1	3/29/2023 4:06:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/28/2023 7:20:00 PM
Surr: BFB	95.5	37.7-212		%Rec	1	3/28/2023 7:20:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 8:42:00 PM
Toluene	ND	0.049		mg/Kg	1	3/29/2023 8:42:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2023 8:42:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2023 8:42:00 PM
Surr: 4-Bromofluorobenzene	86.0	70-130		%Rec	1	3/29/2023 8:42:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	68	60		mg/Kg	20	3/28/2023 10:02:54 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303C84

Date Reported: 4/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-25 4'

Project: Todd State 001 Pad

Collection Date: 3/23/2023 3:00:00 PM

Lab ID: 2303C84-015

Matrix: SOIL

Received Date: 3/25/2023 11:00:00 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	3/29/2023 4:17:14 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/29/2023 4:17:14 AM
Surr: DNOP	93.4	69-147		%Rec	1	3/29/2023 4:17:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/28/2023 7:41:00 PM
Surr: BFB	96.1	37.7-212		%Rec	1	3/28/2023 7:41:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	3/29/2023 9:04:00 PM
Toluene	ND	0.050		mg/Kg	1	3/29/2023 9:04:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/29/2023 9:04:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/29/2023 9:04:00 PM
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	3/29/2023 9:04:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	160	59		mg/Kg	20	3/28/2023 10:15:14 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303C84

03-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd State 001 Pad

Sample ID: MB-73982	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 73982		RunNo: 95636							
Prep Date: 3/28/2023	Analysis Date: 3/28/2023		SeqNo: 3460935		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73982	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 73982		RunNo: 95636							
Prep Date: 3/28/2023	Analysis Date: 3/28/2023		SeqNo: 3460936		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Sample ID: MB-73990	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 73990		RunNo: 95609							
Prep Date: 3/28/2023	Analysis Date: 3/28/2023		SeqNo: 3461355		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-73990	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 73990		RunNo: 95609							
Prep Date: 3/28/2023	Analysis Date: 3/28/2023		SeqNo: 3461356		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303C84

03-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd State 001 Pad

Sample ID: MB-73977	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73977	RunNo: 95601								
Prep Date: 3/28/2023	Analysis Date: 3/28/2023	SeqNo: 3460487 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	8.3		10.00		83.2	69	147			

Sample ID: LCS-73977	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73977	RunNo: 95601								
Prep Date: 3/28/2023	Analysis Date: 3/28/2023	SeqNo: 3460488 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	89.9	61.9	130			
Surr: DNOP	4.6		5.000		92.0	69	147			

Sample ID: 2303C84-015AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-25 4'	Batch ID: 73977	RunNo: 95601								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3460530 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	8.7	43.40	0	89.9	54.2	135			
Surr: DNOP	4.1		4.340		94.3	69	147			

Sample ID: 2303C84-015AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BH23-25 4'	Batch ID: 73977	RunNo: 95601								
Prep Date: 3/28/2023	Analysis Date: 3/29/2023	SeqNo: 3460531 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.3	46.47	0	99.0	54.2	135	16.4	29.2	
Surr: DNOP	4.6		4.647		98.6	69	147	0	0	

Sample ID: MB-73997	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 73997	RunNo: 95646								
Prep Date: 3/29/2023	Analysis Date: 3/29/2023	SeqNo: 3461213 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		87.7	69	147			

Sample ID: LCS-73997	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 73997	RunNo: 95646								
Prep Date: 3/29/2023	Analysis Date: 3/29/2023	SeqNo: 3461214 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C84

03-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd State 001 Pad

Sample ID: LCS-73997	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 73997		RunNo: 95646							
Prep Date: 3/29/2023	Analysis Date: 3/29/2023		SeqNo: 3461214		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.5	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 Quantitative 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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303C84

03-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd State 001 Pad

Sample ID: LCS-73962	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 73962		RunNo: 95638							
Prep Date: 3/27/2023	Analysis Date: 3/28/2023		SeqNo: 3461004		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	70	130			
Surr: BFB	2000		1000		198	37.7	212			

Sample ID: MB-73962	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 73962		RunNo: 95638							
Prep Date: 3/27/2023	Analysis Date: 3/28/2023		SeqNo: 3461005		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	900		1000		90.3	37.7	212			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2303C84

03-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd State 001 Pad

Sample ID: LCS-73962	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 73962		RunNo: 95638							
Prep Date: 3/27/2023	Analysis Date: 3/28/2023		SeqNo: 3461097		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	90.5	80	120			
Toluene	0.89	0.050	1.000	0	89.2	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.8	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.1	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	70	130			

Sample ID: MB-73962	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 73962		RunNo: 95638							
Prep Date: 3/27/2023	Analysis Date: 3/28/2023		SeqNo: 3461098		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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

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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2303C84

RcptNo: 1

Received By: Tracy Casarrubias 3/25/2023 11:00:00 AM

Completed By: Tracy Casarrubias 3/25/2023 11:47:14 AM

Reviewed By: *TM 3/27/23*

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: *TM 3/25/23*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.3	Good	Yes	Yogi		

Client:

Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other☐ EDD (Type)

Date	Time	Matrix	Sample Name
------	------	--------	-------------

03/23/23	14:50	Soil	BH23-25 0'
----------	-------	------	------------

03/23/23	14.55	Soil	BH23-25 2'
----------	-------	------	------------

00000000	4500	0-11	BH23-25 4'
----------	------	------	------------

Date:	Time:
-------	-------

3-14-23 07:00

Date:	Time:
-------	-------

5923

Relinquished by:

9.27

Relinquished by:

CA 11

Received by:

Received by:

J

Date _____ Time _____

3

Date _____ Time _____

25/2/20

Remarks:

Direct bill to Devon. Dale Woodall

cc: kstallings@vertex.ca for Final Report

2/2

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



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

April 11, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX

RE: Todd 36 State 1

OrderNo.: 2303F73

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 10 sample(s) on 4/1/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 8'

Project: Todd 36 State 1

Collection Date: 3/30/2023 9:37:00 AM

Lab ID: 2303F73-001

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/7/2023 7:53:39 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/7/2023 7:53:39 PM
Surr: DNOP	89.8	69-147		%Rec	1	4/7/2023 7:53:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2023 8:19:00 AM
Surr: BFB	93.2	37.7-212		%Rec	1	4/7/2023 8:19:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 8:19:00 AM
Toluene	ND	0.048		mg/Kg	1	4/7/2023 8:19:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2023 8:19:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/7/2023 8:19:00 AM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	4/7/2023 8:19:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	2300	60		mg/Kg	20	4/7/2023 9:37:26 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 10'

Project: Todd 36 State 1

Collection Date: 3/30/2023 10:20:00 AM

Lab ID: 2303F73-002

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/7/2023 8:04:25 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/7/2023 8:04:25 PM
Surr: DNOP	100	69-147		%Rec	1	4/7/2023 8:04:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/7/2023 8:41:00 AM
Surr: BFB	91.0	37.7-212		%Rec	1	4/7/2023 8:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	4/7/2023 8:41:00 AM
Toluene	ND	0.049		mg/Kg	1	4/7/2023 8:41:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/7/2023 8:41:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	4/7/2023 8:41:00 AM
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	4/7/2023 8:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	2800	150		mg/Kg	50	4/10/2023 10:25:37 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 12'

Project: Todd 36 State 1

Collection Date: 3/30/2023 10:50:00 AM

Lab ID: 2303F73-003

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/7/2023 8:15:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/7/2023 8:15:10 PM
Surr: DNOP	91.2	69-147		%Rec	1	4/7/2023 8:15:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/7/2023 3:49:00 PM
Surr: BFB	85.7	37.7-212		%Rec	1	4/7/2023 3:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	4/7/2023 3:49:00 PM
Toluene	ND	0.050		mg/Kg	1	4/7/2023 3:49:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/7/2023 3:49:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/7/2023 3:49:00 PM
Surr: 4-Bromofluorobenzene	85.5	70-130		%Rec	1	4/7/2023 3:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	790	60		mg/Kg	20	4/7/2023 11:16:42 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-20 13'

Project: Todd 36 State 1

Collection Date: 3/30/2023 11:08:00 AM

Lab ID: 2303F73-004

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/7/2023 8:25:54 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/7/2023 8:25:54 PM
Surr: DNOP	100	69-147		%Rec	1	4/7/2023 8:25:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/7/2023 4:10:00 PM
Surr: BFB	92.8	37.7-212		%Rec	1	4/7/2023 4:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 4:10:00 PM
Toluene	ND	0.049		mg/Kg	1	4/7/2023 4:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/7/2023 4:10:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/7/2023 4:10:00 PM
Surr: 4-Bromofluorobenzene	86.0	70-130		%Rec	1	4/7/2023 4:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1200	60		mg/Kg	20	4/7/2023 11:29:07 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 4'

Project: Todd 36 State 1

Collection Date: 3/30/2023 9:00:00 AM

Lab ID: 2303F73-005

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/7/2023 8:36:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/7/2023 8:36:37 PM
Surr: DNOP	94.2	69-147		%Rec	1	4/7/2023 8:36:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2023 4:32:00 PM
Surr: BFB	89.0	37.7-212		%Rec	1	4/7/2023 4:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 4:32:00 PM
Toluene	ND	0.048		mg/Kg	1	4/7/2023 4:32:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2023 4:32:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/7/2023 4:32:00 PM
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	4/7/2023 4:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	7900	300		mg/Kg	100	4/10/2023 7:56:26 PM

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

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

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 4'

Project: Todd 36 State 1

Collection Date: 3/30/2023 11:42:00 AM

Lab ID: 2303F73-006

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/7/2023 8:47:18 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/7/2023 8:47:18 PM
Surr: DNOP	90.8	69-147		%Rec	1	4/7/2023 8:47:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/7/2023 4:53:00 PM
Surr: BFB	88.7	37.7-212		%Rec	1	4/7/2023 4:53:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 4:53:00 PM
Toluene	ND	0.047		mg/Kg	1	4/7/2023 4:53:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/7/2023 4:53:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/7/2023 4:53:00 PM
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	4/7/2023 4:53:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	4700	150		mg/Kg	50	4/10/2023 10:50:24 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 6'

Project: Todd 36 State 1

Collection Date: 3/30/2023 12:00:00 PM

Lab ID: 2303F73-007

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/7/2023 9:08:32 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/7/2023 9:08:32 PM
Surr: DNOP	90.4	69-147		%Rec	1	4/7/2023 9:08:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2023 5:15:00 PM
Surr: BFB	89.5	37.7-212		%Rec	1	4/7/2023 5:15:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 5:15:00 PM
Toluene	ND	0.048		mg/Kg	1	4/7/2023 5:15:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2023 5:15:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/7/2023 5:15:00 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	4/7/2023 5:15:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	5100	300		mg/Kg	100	4/10/2023 11:02:49 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 10'

Project: Todd 36 State 1

Collection Date: 3/30/2023 12:35:00 PM

Lab ID: 2303F73-008

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 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	4/7/2023 9:19:11 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/7/2023 9:19:11 PM
Surr: DNOP	89.8	69-147		%Rec	1	4/7/2023 9:19:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/7/2023 5:36:00 PM
Surr: BFB	92.7	37.7-212		%Rec	1	4/7/2023 5:36:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	4/7/2023 5:36:00 PM
Toluene	ND	0.050		mg/Kg	1	4/7/2023 5:36:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/7/2023 5:36:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/7/2023 5:36:00 PM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	4/7/2023 5:36:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	5200	300		mg/Kg	100	4/10/2023 11:15:14 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 12'

Project: Todd 36 State 1

Collection Date: 3/30/2023 1:09:00 PM

Lab ID: 2303F73-009

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/7/2023 9:29:48 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/7/2023 9:29:48 PM
Surr: DNOP	99.2	69-147		%Rec	1	4/7/2023 9:29:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/7/2023 6:19:00 PM
Surr: BFB	82.5	37.7-212		%Rec	1	4/7/2023 6:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/7/2023 6:19:00 PM
Toluene	ND	0.048		mg/Kg	1	4/7/2023 6:19:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/7/2023 6:19:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/7/2023 6:19:00 PM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	4/7/2023 6:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	4100	150		mg/Kg	50	4/10/2023 11:27:39 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2303F73

Date Reported: 4/11/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-24 13'

Project: Todd 36 State 1

Collection Date: 3/30/2023 1:35:00 PM

Lab ID: 2303F73-010

Matrix: SOIL

Received Date: 4/1/2023 8:50:00 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	4/7/2023 9:40:25 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/7/2023 9:40:25 PM
Surr: DNOP	120	69-147		%Rec	1	4/7/2023 9:40:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/7/2023 6:41:00 PM
Surr: BFB	87.1	37.7-212		%Rec	1	4/7/2023 6:41:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	4/7/2023 6:41:00 PM
Toluene	ND	0.050		mg/Kg	1	4/7/2023 6:41:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/7/2023 6:41:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/7/2023 6:41:00 PM
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	4/7/2023 6:41:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	6600	300		mg/Kg	100	4/10/2023 11:40:04 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 Quantitative 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#: 2303F73

11-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: MB-74188	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 74188	RunNo: 95862								
Prep Date: 4/7/2023	Analysis Date: 4/7/2023	SeqNo: 3471486 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-74188	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 74188	RunNo: 95862								
Prep Date: 4/7/2023	Analysis Date: 4/7/2023	SeqNo: 3471487 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.1	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 Quantitative 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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2303F73

11-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: LCS-74190	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 74190			RunNo: 95870						
Prep Date: 4/7/2023	Analysis Date: 4/7/2023			SeqNo: 3470921		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		98.1	69	147			

Sample ID: MB-74190	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 74190			RunNo: 95870						
Prep Date: 4/7/2023	Analysis Date: 4/7/2023			SeqNo: 3470922		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.0	69	147			

Sample ID: LCS-74174	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 74174			RunNo: 95870						
Prep Date: 4/6/2023	Analysis Date: 4/7/2023			SeqNo: 3471353		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.3	61.9	130			
Surr: DNOP	4.6		5.000		91.6	69	147			

Sample ID: LCS-74176	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 74176			RunNo: 95870						
Prep Date: 4/6/2023	Analysis Date: 4/7/2023			SeqNo: 3471354		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.7		5.000		113	69	147			

Sample ID: MB-74174	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 74174			RunNo: 95870						
Prep Date: 4/6/2023	Analysis Date: 4/7/2023			SeqNo: 3471360		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	8.6		10.00		86.5	69	147			

Sample ID: MB-74176	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 74176			RunNo: 95870						
Prep Date: 4/6/2023	Analysis Date: 4/7/2023			SeqNo: 3471361		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.3		10.00		92.6	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 Quantitative 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#: 2303F73

11-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: lcs-74141	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 74141			RunNo: 95830						
Prep Date: 4/5/2023	Analysis Date: 4/7/2023			SeqNo: 3469617		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	76.1	70	130			
Surr: BFB	2000		1000		195	37.7	212			

Sample ID: mb-74141	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 74141			RunNo: 95830						
Prep Date: 4/5/2023	Analysis Date: 4/7/2023			SeqNo: 3469618		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	900		1000		89.9	37.7	212			

Sample ID: 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: GS95861			RunNo: 95861						
Prep Date:	Analysis Date: 4/7/2023			SeqNo: 3470767		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2200		1000		216	37.7	212			S

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: GS95861			RunNo: 95861						
Prep Date:	Analysis Date: 4/7/2023			SeqNo: 3470769		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	37.7	212			

Sample ID: lcs-74186	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 74186			RunNo: 95861						
Prep Date: 4/6/2023	Analysis Date: 4/7/2023			SeqNo: 3471592		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		200	37.7	212			

Sample ID: mb-74186	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 74186			RunNo: 95861						
Prep Date: 4/6/2023	Analysis Date: 4/8/2023			SeqNo: 3471593		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		88.8	37.7	212			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: **2303F73****11-Apr-23****Client:** Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: 2303F73-001ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BH23-20 8'	Batch ID: 74141	RunNo: 95861								
Prep Date: 4/5/2023	Analysis Date: 4/8/2023	SeqNo: 3471616 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	4.8	24.04	0	73.6	70	130			
Surr: BFB	1900		961.5		198	37.7	212			

Sample ID: 2303F73-001amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BH23-20 8'	Batch ID: 74141	RunNo: 95861								
Prep Date: 4/5/2023	Analysis Date: 4/8/2023	SeqNo: 3471617 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.37	0	76.7	70	130	5.56	20	
Surr: BFB	2000		974.7		202	37.7	212	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 Quantitative 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#: 2303F73

11-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: lcs-74141	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 74141	RunNo: 95830								
Prep Date: 4/5/2023	Analysis Date: 4/7/2023	SeqNo: 3469624 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.3	80	120			
Toluene	0.90	0.050	1.000	0	89.8	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.7	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.7	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.7	70	130			

Sample ID: mb-74141	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 74141	RunNo: 95830								
Prep Date: 4/5/2023	Analysis Date: 4/7/2023	SeqNo: 3469625 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	0.91		1.000		90.6	70	130			

Sample ID: 100ng btex lcs	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: BS95861	RunNo: 95861								
Prep Date:	Analysis Date: 4/7/2023	SeqNo: 3470768 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	70	130			

Sample ID: mb	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: BS95861	RunNo: 95861								
Prep Date:	Analysis Date: 4/7/2023	SeqNo: 3470771 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		96.7	70	130			

Sample ID: 2303F73-002ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH23-20 10'	Batch ID: 74141	RunNo: 95861								
Prep Date: 4/5/2023	Analysis Date: 4/8/2023	SeqNo: 3471690 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	0.9833	0	87.4	68.8	120			
Toluene	0.88	0.049	0.9833	0	89.1	73.6	124			
Ethylbenzene	0.87	0.049	0.9833	0	88.5	72.7	129			
Xylenes, Total	2.6	0.098	2.950	0	87.0	75.7	126			

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 Quantitative 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#: 2303F73

11-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1

Sample ID: 2303F73-002ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH23-20 10'	Batch ID: 74141	RunNo: 95861								
Prep Date: 4/5/2023	Analysis Date: 4/8/2023	SeqNo: 3471690 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.91		0.9833		92.4	70	130			

Sample ID: 2303F73-002amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH23-20 10'	Batch ID: 74141	RunNo: 95861								
Prep Date: 4/5/2023	Analysis Date: 4/8/2023	SeqNo: 3471693 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	0.9862	0	84.4	68.8	120	3.13	20	
Toluene	0.86	0.049	0.9862	0	87.3	73.6	124	1.78	20	
Ethylbenzene	0.85	0.049	0.9862	0	86.7	72.7	129	1.77	20	
Xylenes, Total	2.5	0.099	2.959	0	85.6	75.7	126	1.33	20	
Surr: 4-Bromofluorobenzene	0.92		0.9862		93.7	70	130	0	0	

Sample ID: lcs-74186	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 74186	RunNo: 95861								
Prep Date: 4/6/2023	Analysis Date: 4/8/2023	SeqNo: 3471696 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.91		1.000		91.0	70	130			

Sample ID: mb-74186	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 74186	RunNo: 95861								
Prep Date: 4/6/2023	Analysis Date: 4/8/2023	SeqNo: 3471699 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.88		1.000		88.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2303F73

RcptNo: 1

Received By: Cheyenne Cason 4/1/2023 8:50:00 AM

Completed By: Cheyenne Cason 4/1/2023 9:18:27 AM

Reviewed By: TMC 4/1/23

Chul

Chul

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by *TMC 4/1/23*

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Not Present	Yogi		

Chain-of-Custody Record

Client: Devon / VertexMailing 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☒ Rush5 Day

Project Name:

Todd 36 State 1

Project #:

21E-02816-22

Project Manager:

Kent StallingsSampler: SMOn Ice: ☒ Yes☐ NoYog.# of Coolers: 1Cooler Temp (including CF): 2.6 2.7-6.1 ± 2.0°C

Container Type and #

Preservative Type

HEAL No. 2303F73

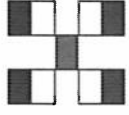
Date Time Matrix Sample Name

3/30/23 9:37 Soil BH23-20 8'10:20 BH23-20 10'10:50 BH23-20 12'11:08 BH23-20 13'9:00 BH23-23 4'11:42 BH23-24 4'12:00 BH23-24 6'12:35 BH23-24 10'13:09 BH23-24 12'13:35 BH23-24 13'Date: 3/30/23 Time: 17:25Relinquished by: Kevin McdDate: 3/31/23 Time: 19:00Relinquished by: Kevin McdReceived by: Kevin McdDate: 3/31/23Time: 10:30Received by: One cornerDate: 4/1/23Time: 08:50

Remarks:

Direct bill to: DevonC.C. Sherratt@vertex.com pg 1 of 1

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

HALL ENVIRONMENTAL
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	CO ₂ , F ₂ , Br ₂ , NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
<input checked="" type="checkbox"/> BTEX / MTBE / TMB's (8021)					<input checked="" type="checkbox"/>			



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

April 12, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 1 Pad

OrderNo.: 2304087

Dear Kent Stallings:

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

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2304087

Date Reported: 4/12/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 4'

Project: Todd 36 State 1 Pad

Collection Date: 3/31/2023 9:32:00 AM

Lab ID: 2304087-001

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 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	4/6/2023 11:03:30 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/6/2023 11:03:30 AM
Surr: DNOP	86.0	69-147		%Rec	1	4/6/2023 11:03:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/5/2023 1:46:12 PM
Surr: BFB	105	37.7-212		%Rec	1	4/5/2023 1:46:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	4/5/2023 1:46:12 PM
Toluene	ND	0.050		mg/Kg	1	4/5/2023 1:46:12 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/5/2023 1:46:12 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/5/2023 1:46:12 PM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	4/5/2023 1:46:12 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	420	60		mg/Kg	20	4/5/2023 9:57:04 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2304087

Date Reported: 4/12/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 5'

Project: Todd 36 State 1 Pad

Collection Date: 3/31/2023 9:45:00 AM

Lab ID: 2304087-002

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 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	4/6/2023 11:27:06 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/6/2023 11:27:06 AM
Surr: DNOP	84.9	69-147		%Rec	1	4/6/2023 11:27:06 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/5/2023 2:10:06 PM
Surr: BFB	105	37.7-212		%Rec	1	4/5/2023 2:10:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	4/5/2023 2:10:06 PM
Toluene	ND	0.047		mg/Kg	1	4/5/2023 2:10:06 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/5/2023 2:10:06 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/5/2023 2:10:06 PM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	4/5/2023 2:10:06 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	480	60		mg/Kg	20	4/5/2023 10:58:47 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2304087

Date Reported: 4/12/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-15 4'

Project: Todd 36 State 1 Pad

Collection Date: 3/31/2023 10:55:00 AM

Lab ID: 2304087-003

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 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	4/6/2023 11:50:45 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/6/2023 11:50:45 AM
Surr: DNOP	86.6	69-147		%Rec	1	4/6/2023 11:50:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/5/2023 2:34:04 PM
Surr: BFB	106	37.7-212		%Rec	1	4/5/2023 2:34:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	4/5/2023 2:34:04 PM
Toluene	ND	0.049		mg/Kg	1	4/5/2023 2:34:04 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/5/2023 2:34:04 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/5/2023 2:34:04 PM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	4/5/2023 2:34:04 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	2500	150		mg/Kg	50	4/6/2023 12:36:15 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2304087

Date Reported: 4/12/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 6'

Project: Todd 36 State 1 Pad

Collection Date: 3/31/2023 8:35:00 AM

Lab ID: 2304087-004

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 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	4/6/2023 12:14:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/6/2023 12:14:22 PM
Surr: DNOP	83.9	69-147		%Rec	1	4/6/2023 12:14:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/5/2023 2:58:07 PM
Surr: BFB	106	37.7-212		%Rec	1	4/5/2023 2:58:07 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	4/5/2023 2:58:07 PM
Toluene	ND	0.047		mg/Kg	1	4/5/2023 2:58:07 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/5/2023 2:58:07 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/5/2023 2:58:07 PM
Surr: 4-Bromofluorobenzene	90.4	70-130		%Rec	1	4/5/2023 2:58:07 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	5000	300		mg/Kg	100	4/6/2023 12:48:40 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2304087

Date Reported: 4/12/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-23 8'

Project: Todd 36 State 1 Pad

Collection Date: 3/31/2023 9:05:00 AM

Lab ID: 2304087-005

Matrix: SOIL

Received Date: 4/4/2023 7:25:00 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	4/6/2023 12:37:58 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/6/2023 12:37:58 PM
Surr: DNOP	85.8	69-147		%Rec	1	4/6/2023 12:37:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/5/2023 3:21:36 PM
Surr: BFB	106	37.7-212		%Rec	1	4/5/2023 3:21:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	4/5/2023 3:21:36 PM
Toluene	ND	0.050		mg/Kg	1	4/5/2023 3:21:36 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/5/2023 3:21:36 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/5/2023 3:21:36 PM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	4/5/2023 3:21:36 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	5600	300		mg/Kg	100	4/6/2023 1:01:05 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 Quantitative 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#: 2304087
12-Apr-23

Client: Vertex Resources Services, Inc.
Project: Todd 36 State 1 Pad

Sample ID: MB-74150	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 74150	RunNo: 95824								
Prep Date: 4/5/2023	Analysis Date: 4/5/2023	SeqNo: 3468743 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-74150	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 74150	RunNo: 95824								
Prep Date: 4/5/2023	Analysis Date: 4/5/2023	SeqNo: 3468744 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Above Quantitation Range/Estimated Value
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative 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#: 2304087
12-Apr-23

Client: Vertex Resources Services, Inc.
Project: Todd 36 State 1 Pad

Sample ID: MB-74121	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 74121	RunNo: 95838								
Prep Date: 4/4/2023	Analysis Date: 4/6/2023	SeqNo: 3469361 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	8.2		10.00		81.8	69	147			

Sample ID: LCS-74121	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 74121	RunNo: 95838								
Prep Date: 4/4/2023	Analysis Date: 4/6/2023	SeqNo: 3469362 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	61.9	130			
Surr: DNOP	4.7		5.000		94.2	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 Quantitative 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#: 2304087

12-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: lcs-74113	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 74113		RunNo: 95822							
Prep Date: 4/4/2023	Analysis Date: 4/5/2023		SeqNo: 3468624		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.8	70	130			
Surr: BFB	1900		1000		191	37.7	212			

Sample ID: mb-74113	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 74113		RunNo: 95822							
Prep Date: 4/4/2023	Analysis Date: 4/5/2023		SeqNo: 3468626		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	37.7	212			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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#: 2304087

12-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 1 Pad

Sample ID: LCS-74113	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 74113		RunNo: 95822							
Prep Date: 4/4/2023	Analysis Date: 4/5/2023		SeqNo: 3468661		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.5	80	120			
Toluene	0.91	0.050	1.000	0	91.4	80	120			
Ethylbenzene	0.89	0.050	1.000	0	89.0	80	120			
Xylenes, Total	2.6	0.10	3.000	0	88.2	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.7	70	130			

Sample ID: mb-74113	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 74113		RunNo: 95822							
Prep Date: 4/4/2023	Analysis Date: 4/5/2023		SeqNo: 3468662		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	0.87		1.000		87.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2304087

RcptNo: 1

Received By: Juan Rojas 4/4/2023 7:25:00 AM

Completed By: Sean Livingston 4/4/2023 8:10:44 AM

Reviewed By: *in 4/4/23*

Juan Rojas

Sean Livingston

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: _____

in 4/4/23

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

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



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

April 20, 2023

Kent Stallings

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Todd 36 State 001 Pad

OrderNo.: 2304667

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/15/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2304667

Date Reported: 4/20/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-28 0'

Project: Todd 36 State 001 Pad

Collection Date: 4/12/2023 1:50:00 PM

Lab ID: 2304667-001

Matrix: SOIL

Received Date: 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/19/2023 3:58:05 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/19/2023 3:58:05 AM
Surr: DNOP	96.4	69-147		%Rec	1	4/19/2023 3:58:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/19/2023 6:34:00 AM
Surr: BFB	92.4	37.7-212		%Rec	1	4/19/2023 6:34:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/19/2023 6:34:00 AM
Toluene	ND	0.048		mg/Kg	1	4/19/2023 6:34:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/19/2023 6:34:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/19/2023 6:34:00 AM
Surr: 4-Bromofluorobenzene	87.1	70-130		%Rec	1	4/19/2023 6:34:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	ND	60		mg/Kg	20	4/18/2023 6:17:43 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order 2304667

Date Reported: 4/20/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-28 2'

Project: Todd 36 State 001 Pad

Collection Date: 4/12/2023 1:55:00 PM

Lab ID: 2304667-002

Matrix: SOIL

Received Date: 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/19/2023 4:08:48 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/19/2023 4:08:48 AM
Surr: DNOP	94.3	69-147		%Rec	1	4/19/2023 4:08:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/19/2023 6:56:00 AM
Surr: BFB	88.4	37.7-212		%Rec	1	4/19/2023 6:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	4/19/2023 6:56:00 AM
Toluene	ND	0.050		mg/Kg	1	4/19/2023 6:56:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/19/2023 6:56:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	4/19/2023 6:56:00 AM
Surr: 4-Bromofluorobenzene	85.6	70-130		%Rec	1	4/19/2023 6:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	150	60		mg/Kg	20	4/18/2023 6:54:46 PM

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

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

Analytical Report

Lab Order 2304667

Date Reported: 4/20/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-28 3.5'

Project: Todd 36 State 001 Pad

Collection Date: 4/12/2023 2:00:00 PM

Lab ID: 2304667-003

Matrix: SOIL

Received Date: 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/19/2023 4:19:31 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/19/2023 4:19:31 AM
Surr: DNOP	92.4	69-147		%Rec	1	4/19/2023 4:19:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/19/2023 7:39:00 AM
Surr: BFB	91.4	37.7-212		%Rec	1	4/19/2023 7:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	4/19/2023 7:39:00 AM
Toluene	ND	0.048		mg/Kg	1	4/19/2023 7:39:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/19/2023 7:39:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/19/2023 7:39:00 AM
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	1	4/19/2023 7:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	170	60		mg/Kg	20	4/18/2023 7:07:07 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 3 of 6

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2304667

20-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: LCS-74375	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 74375		RunNo: 96131							
Prep Date: 4/17/2023	Analysis Date: 4/18/2023		SeqNo: 3481381		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.9	61.9	130			
Surr: DNOP	4.3		5.000		85.4	69	147			

Sample ID: MB-74375	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 74375		RunNo: 96131							
Prep Date: 4/17/2023	Analysis Date: 4/18/2023		SeqNo: 3481385		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	8.7		10.00		86.6	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 Quantitative 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#: 2304667

20-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: ics-74370	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 74370		RunNo: 96093							
Prep Date: 4/17/2023	Analysis Date: 4/18/2023		SeqNo: 3481111		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.0	70	130			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: mb-74370	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 74370		RunNo: 96093							
Prep Date: 4/17/2023	Analysis Date: 4/18/2023		SeqNo: 3481112		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	890		1000		89.1	37.7	212			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative 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

Page 5 of 6

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2304667

20-Apr-23

Client: Vertex Resources Services, Inc.**Project:** Todd 36 State 001 Pad

Sample ID: ics-74370	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: 74370			RunNo: 96093						
Prep Date: 4/17/2023	Analysis Date: 4/18/2023			SeqNo: 3481168		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.7	80	120			
Toluene	0.86	0.050	1.000	0	86.4	80	120			
Ethylbenzene	0.85	0.050	1.000	0	84.8	80	120			
Xylenes, Total	2.5	0.10	3.000	0	83.9	80	120			
Surr: 4-Bromofluorobenzene	0.85		1.000		85.3	70	130			

Sample ID: mb-74370	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 74370			RunNo: 96093						
Prep Date: 4/17/2023	Analysis Date: 4/18/2023			SeqNo: 3481169		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank
E Above Quantitation Range/Estimated Value
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Limit



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

Sample Log-In Check List

Client Name: Vertex Resources
Services, Inc.

Work Order Number: 2304667

RcptNo: 1

Received By: Cheyenne Cason

4/15/2023 8:40:00 AM

Handwritten signature

Completed By: Cheyenne Cason

4/17/2023 9:00:03 AM

Handwritten signature

Reviewed By: *Handwritten signature* 4/17/23

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 $>0^{\circ}\text{C}$ 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: *Handwritten signature* 4/17/23

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present	Morty		

ATTACHMENT 5

Closure Criteria Determination				
Site Name: Todd 36 State #001- Pad				
Spill Coordinates: 32.262704,-103.733261		X: 619312	Y: 3570259	
Site Specific Conditions		Value	Unit	Reference
1	Depth to Groundwater (nearest reference)	>105	feet	1
	Distance between release and nearest DTGW reference	2,625	feet	
		0.497	miles	
	Date of nearest DTGW reference measurement	June 1, 2023		
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	23,600	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	27,590	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	27,476	feet	4
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	3,041	feet	5
	ii) Within 1000 feet of any fresh water well or spring	3,041	feet	5
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)	6
7	Within 300 feet of a wetland	11,240	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
	Distance between release and nearest registered mine	57,255	feet	
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low	9
	Distance between release and nearest High Karst	36,802	feet	
10	Within a 100-year Floodplain	>500	year	10
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	31,859	feet	
11	Soil Type	Fine sand, fine sandy loam		11
12	Ecological Classification	Loamy sand		12
13	Geology	Eolian and piedmont deposits		13
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	>100'	<50' 51-100' >100'	

OSE POD 0.5 mile



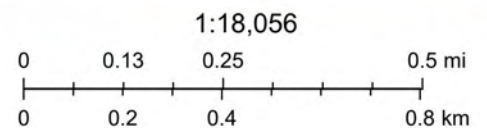
1/25/2024, 6:24:34 PM

GIS WATERS PODs

- Active
- Pending
- Plugged
- OSE District Boundary

Water Right Regulations

- Closure Area
- New Mexico State Trust Lands
- Subsurface Estate
- Both Estates



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



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	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C 04746 POD1		CUB	ED	3	4	3	36	23S	31E	619226	3569417	800	105		
C 04712 POD1		CUB	LE	1	4	1	31	23S	32E	620917	3570289	1615	55		
C 02348		C	ED	1	4	3	26	23S	31E	617648	3571068	1862	700	430	270
C 04672 POD 1		CUB	ED	2	1	4	01	24S	31E	619762	3568286	1982	110		
Average Depth to Water:														430 feet	
Minimum Depth:														430 feet	
Maximum Depth:														430 feet	

Record Count: 4

UTMNAD83 Radius Search (in meters):


Easting (X): 619303 Northing (Y): 3570215 Radius: 2000

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New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(NAD83 UTM in meters)			
		(quarters are smallest to largest)							
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04746 POD1	3	4	3	36	23S	31E	619226	3569417 
<hr/>									
Driller License:		1833		Driller Company:		VISION RESOURCES, INC			
Driller Name:		JASON MALEY							
Drill Start Date:		06/01/2023		Drill Finish Date:		06/01/2023		Plug Date: 06/06/2023	
Log File Date:		06/13/2023		PCW Rev Date:		Source:			
Pump Type:				Pipe Discharge Size:		Estimated Yield:			
Casing Size:				Depth Well:		105 feet		Depth Water:	
<hr/>									

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/25/24 6:37 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Water Right Summary


[get image list](#)

WR File Number: C 04746

Subbasin: CUB

Cross Reference: -

Primary Purpose: MON MONITORING WELL

Primary Status: PMT PERMIT

Total Acres:

Subfile: -

Header: -

Total Diversion: 0

Cause/Case: -


User: DEVON ENERGY RESOURCES

Contact: DALE WOODALL

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/ To	Acres	Diversion	Consumptive
			1	2					
get images	747203	EXPL	2023-05-31	PMT	LOG	C 04746 POD1	T	0	0

Current Points of Diversion

(NAD83 UTM in meters)											
POD Number	Well Tag	Source	Q					X	Y	Other Location Desc	
			64	Q16	Q4	Sec	Tws				Rng
C 04746 POD1	NA		3	4	3	36	23S	31E	619226	3569417	

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1/25/24 6:38 PM

WATER RIGHT SUMMARY



New Mexico Office of the State Engineer

Transaction Summary


EXPL Permit To Explore

Transaction Number: 747203**Transaction Desc:** C 04746 POD1**File Date:** 04/24/2023**Primary Status:** PMT Permit**Secondary Status:** LOG Well Log Received**Person Assigned:** *******User:** DEVON ENERGY RESOURCES**Contact:** DALE WOODALL

Events

	Date	Type	Description	Comment	Processed By
	04/24/2023	APP	Application Received	*	*****
	04/24/2023	FTN	Finalize non-published Trans.		*****
	04/24/2023	TEC	Technical Report	*PLUGGING PLAN	*****
	06/13/2023	LGI	Well Log Image	*PLG RECORD	*****
	06/13/2023	LOG	Well Log Received	*DRY HOLE	*****
	06/29/2023	QAT	Quality Assurance Completed	DATA	*****
	07/06/2023	QAT	Quality Assurance Completed	DATA TEC/APP	*****
	07/10/2023	QAT	Quality Assurance Completed	IMAGE TEC/APP	*****
	07/11/2023	DRY	Dry well log received		*****
	07/24/2023	QAT	Quality Assurance Completed	DATA/LOG/LGI	*****
	08/10/2023	QAT	Quality Assurance Completed	DATA	*****
	08/16/2023	QAT	Quality Assurance Completed	IMAGES LGI/LOG	*****

Water Right Information

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 04746	0	0		MON MONITORING WELL
**Point of Diversion				
C 04746 POD1		619226	3569417	

Conditions

- 1A Depth of the well shall not exceed the thickness of the valley fill.
- 4 No water shall be appropriated and beneficially used under this permit.

- B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record. The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable
- 7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- 16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.
- P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- Q The State Engineer retains jurisdiction over this permit.
- R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

Action of the State Engineer

IT IS THE PERMITTEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

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

Approval Code: A - Approved

Action Date: 04/24/2023

Log Due Date: 05/30/2024

State Engineer: Mike A. Hamman, P.

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1/25/24 6:39 PM

TRANSACTION
SUMMARY



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 LATITUDE 32	MINUTES 15'	SECONDS 18.5" N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
		LONGITUDE 103	44'	03.4" W	* 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. 1833		NAME OF LICENSED DRILLER Jason Maley			NAME OF WELL DRILLING COMPANY Vision Resources		
	DRILLING STARTED 6-1-23		DRILLING ENDED 6-1-23		DEPTH OF COMPLETED WELL (FT) 105'	BORE HOLE DEPTH (FT) 105'	DEPTH WATER FIRST ENCOUNTERED (FT) Dry	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN *add Centralizer info below <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) Dry	DATE STATIC MEASURED	
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:						CHECK HERE IF PITLESS ADAPTER IS INSTALLED <input type="checkbox"/>	
	DEPTH (feet bgl)		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)
	FROM	TO						
	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)		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		
	FROM	TO						
				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. 147203
LOCATION 235. 31E. 36 3 4 3	WELL TAG ID NO. NA	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

5. TEST: BIG SUPERVISION

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



PLUGGING RECORD



NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4746-POD 1
 Well owner: Devon Energy Resources Phone No.: _____
 Mailing address: 205 E Bender Road #150
 City: Hobbs State: NM Zip code: 88240

II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: Vision Resources INC
- 2) New Mexico Well Driller License No.: WD1833 Expiration Date: 10-7-23
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):
Jason Maley
- 4) Date well plugging began: 6-6-23 Date well plugging concluded: 6-6-23
- 5) GPS Well Location: Latitude: 32 deg, 15' min, 18.5" sec
 Longitude: 103 deg, 44' min, 03.4" sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl),
 by the following manner: Tape
- 7) Static water level measured at initiation of plugging: Dry ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 6-6-2023
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

USE OF JUN 13 2023 PM 2:08

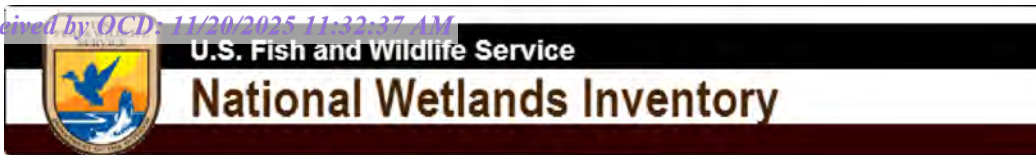
- For each interval plugged, describe within the following columns:**

USE DTG JUN 13 2023 PM 2:03

III. SIGNATURE:

Signature of Well Driller

Date _____



Intermittent 23,600 feet



July 3, 2023

Wetlands_Alaska

- 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.



Pond 27,590 feet



July 3, 2023

Wetlands_Alaska

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

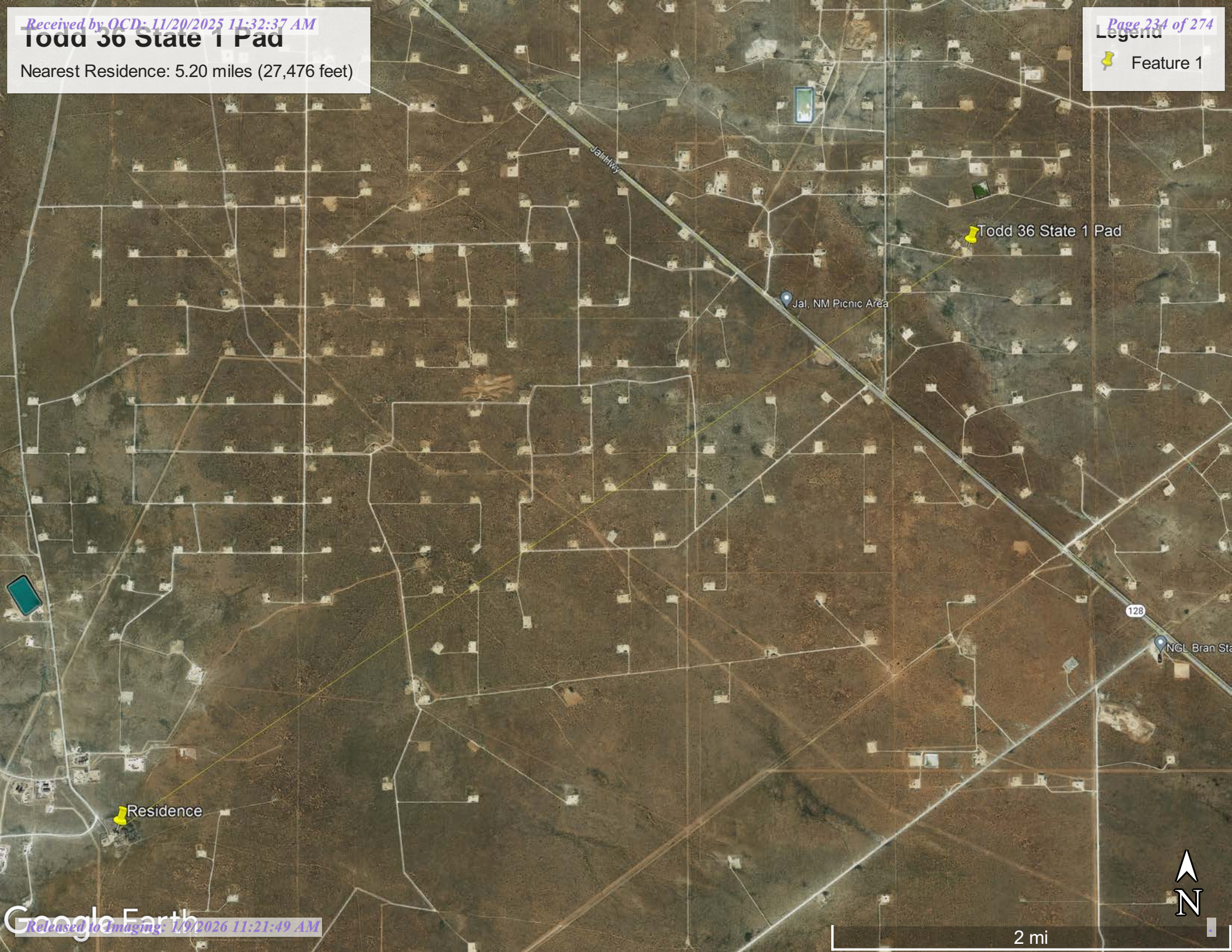
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Todd 36 State 1 Pad

Legend

Nearest Residence: 5.20 miles (27,476 feet)

Feature 1



128

NGL Bran Sta



2 mi



New Mexico Office of the State Engineer
Active & Inactive Points of Diversion
 (with Ownership Information)

										(R=POD has been replaced and no longer serves this file, C=the file is closed)										(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)										(NAD83 UTM in meters)		
(acre ft per annum)																																
Sub										Well										q q q												
WR File Nbr	basin	Use	Diversion	Owner	County	POD Number	Tag	Code	Grant	Source	64	16	4	Sec	Tws	Rng	X	Y	Distance													
C 04790	CUB	MON		DEVON ENERGY RESOURCES	ED	C 04790 POD1	NA				4	4	3	25	23S	31E	619309	3570904		689												
C 04746	CUB	MON		DEVON ENERGY RESOURCES	ED	C 04746 POD1	NA				3	4	3	36	23S	31E	619225	3569417		800												
C 02602	C	SAN		POGO PRODUCING COMPANY	ED	C 02602					2	2	35	23S	31E	618471	3570650*		938													
C 04712	CUB	MON		VERTEX RESOURCES	LE	C 04712 POD1	NA				1	4	1	31	23S	32E	620917	3570289		1615												
C 02348	C	STK	3	NGL WATER SOLUTIONS PERMIAN	ED	C 02348				Shallow	1	4	3	26	23S	31E	617647	3571068		1862												
C 04672	CUB	EXP		OXY USA INC.	ED	C 04672 POD 1	NA				2	1	4	01	24S	31E	619762	3568286		1982												

Record Count: 6

UTMNAD83 Radius Search (in meters):

Easting (X): 619303

Northing (Y): 3570215

Radius: 2000

Sorted by: Distance

*UTM location was derived from PLSS - see Help

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1/25/24 6:32 PM

ACTIVE & INACTIVE POINTS OF DIVERSION



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
	C 02602		2	2	35	23S	31E	618471	3570650*

Driller License:

Driller Company:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date:

PCW Rev Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

Depth Water:

*UTM location was derived from PLSS - see Help

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6/16/23 12:04 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Water Right Summary


[get image list](#)

WR File Number: C 02602

Subbasin: C

Cross Reference: -

Primary Purpose: SAN 72-12-1 SANITARY IN CONJUNCTION WITH A COMMERCIAL USE

Primary Status: EXP EXPIRED

Total Acres:

Subfile: -

Header: -


Total Diversion: 0

Cause/Case: -


Owner: POGO PRODUCING COMPANY

Contact: JERRY A COOPER

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
	466110	72121	1998-09-15	EXP	EXP	C 02602	T		3	

Current Points of Diversion

(NAD83 UTM in meters)										
POD Number	Well Tag	Source	Q					X	Y	Other Location Desc
			64	Q16	Q4	Sec	Tws			
C 02602			2	2	35	23S	31E	618471	3570650*	

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

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6/16/23 12:02 PM

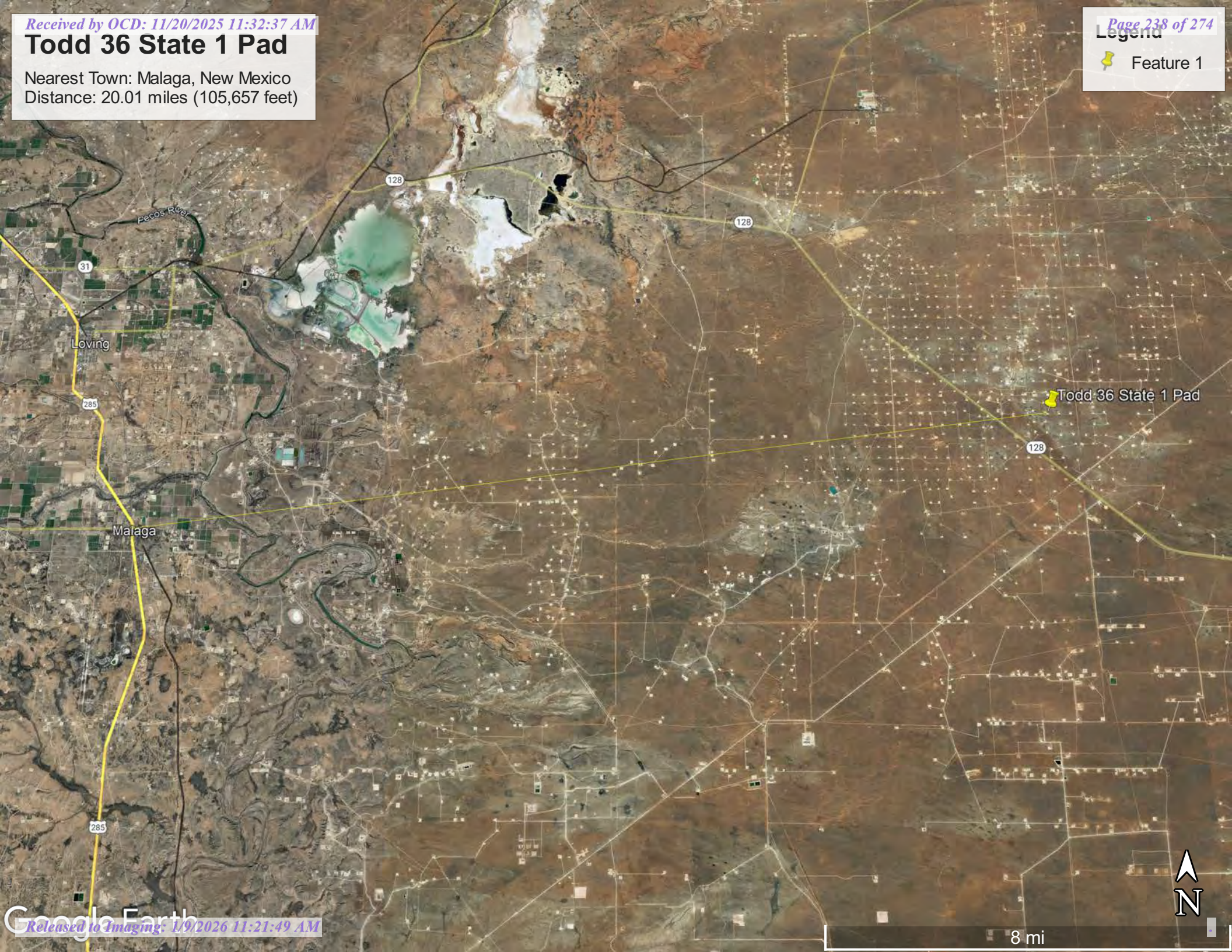
WATER RIGHT SUMMARY

Todd 36 State 1 Pad

Nearest Town: Malaga, New Mexico
Distance: 20.01 miles (105,657 feet)

Legend

 Feature 1





Wetland 11,240 feet



July 3, 2023

Wetlands_Alaska

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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Nearest Mine 57,255 feet



1/26/2024, 5:40:52 AM

Registered Mines

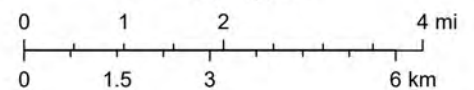
✕ Aggregate, Stone etc.

✕ Aggregate, Stone etc.

▲ Potash

▭ PLSS Townships

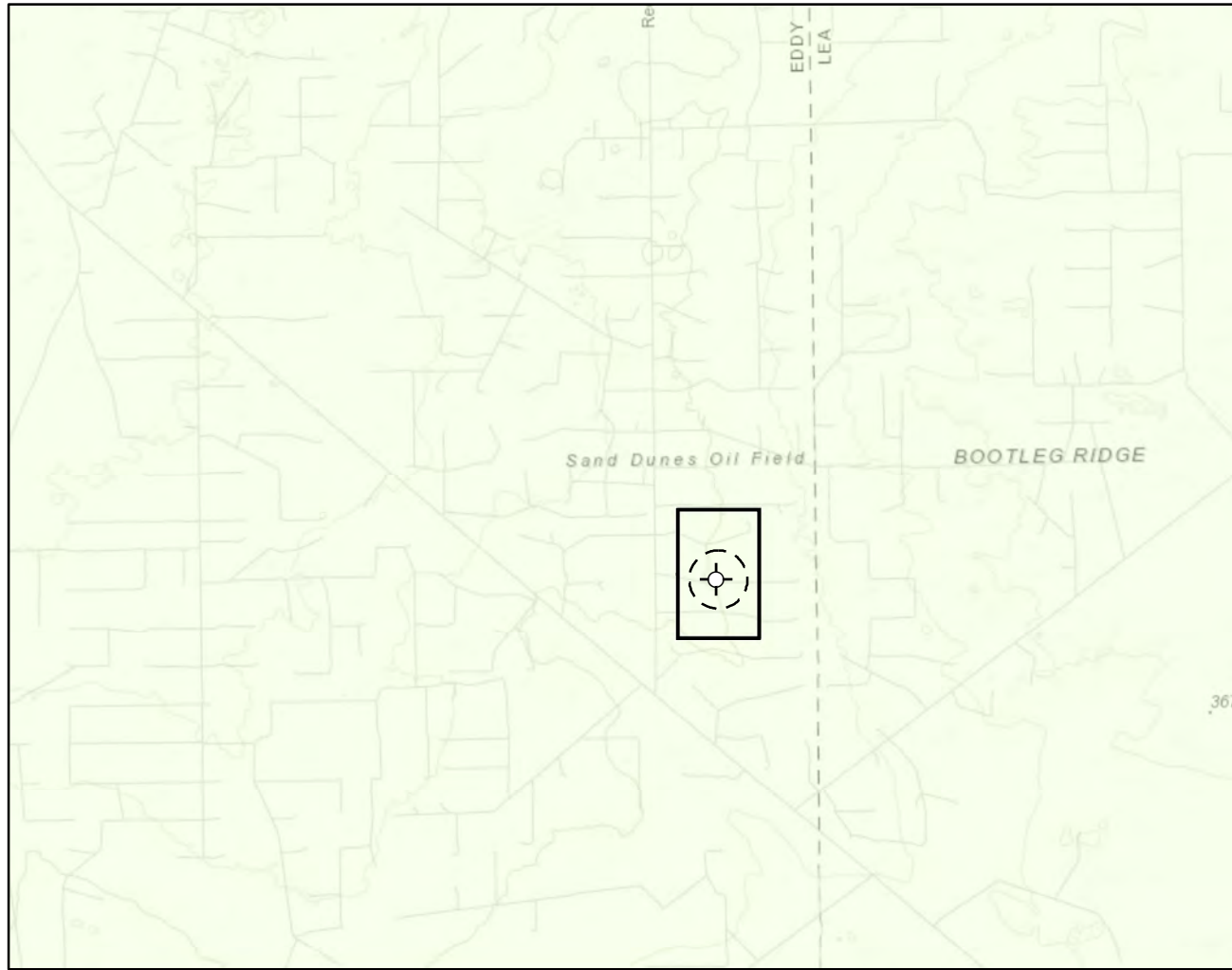
1:144,448



Esri, NASA, NGA, USGS, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, BLM

EMNRD MMD GIS Coordinator

Document Path: G:\Projects\US PROJECTS\Devon Energy Corporation\21E-02816(022 - Todd 36 State 1)\Figure 4 Karst Potential Map Todd 36 State 1 SWD.mxd



Karst Potential

- Critical
- High
- Medium
- Low

- Site Location
- Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.



Map Center:
Lat/Long: 32.263143, -103.733705

NAD 1983 UTM Zone 13N
Date: Sep 08/22



**Karst Potential Schematic
Todd 36 State 1 SWD**

FIGURE:

X



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





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

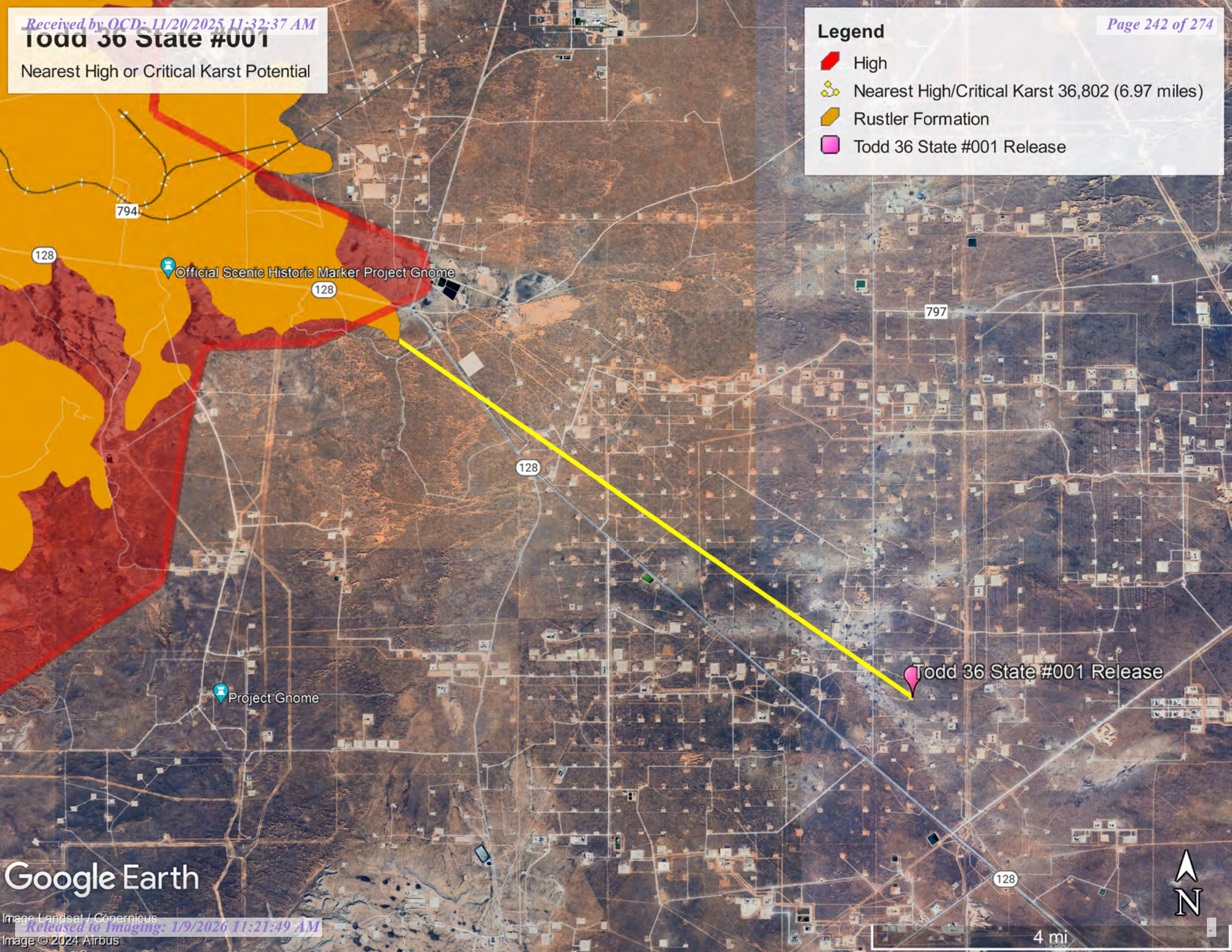
VERSATILITY. EXPERTISE.

Todd 36 State #001

Nearest High or Critical Karst Potential

Legend

-  High
-  Nearest High/Critical Karst 36,802 (6.97 miles)
-  Rustler Formation
-  Todd 36 State #001 Release



Google Earth

National Flood Hazard Layer FIRMette



103°44'20"W 32°16'1"N



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 Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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 2/17/2023 at 3:03 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.

Nearest FEMA Zone A (100-year Flood Plain)

Legend

-  FEMA Zone A
-  Nearest 100-year Floodplain 31,859 feet (6.0 miles)
-  Todd 36 State #001 Release

Google Earth

Image © 2024 Airbus



3 mi



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 Eddy Area, New Mexico



February 17, 2023


Custom Soil Resource Report
Soil Map (Todd 36 State 1- Pad)




Custom Soil Resource 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: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

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.

Custom Soil Resource Report

Eddy Area, New Mexico**KM—Kermit-Berino fine sands, 0 to 3 percent slopes****Map Unit Setting**

National map unit symbol: 1w4q
Elevation: 3,100 to 4,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent
Berino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit**Setting**

Landform: Plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
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: 1.0
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 Berino**Setting**

Landform: Plains, fan piedmonts
Landform position (three-dimensional): Riser

Custom Soil Resource Report

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Active dune land

Percent of map unit: 15 percent
Hydric soil rating: No

Ecological site R070BD003NM Loamy Sand

Accessed: 02/21/2023

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

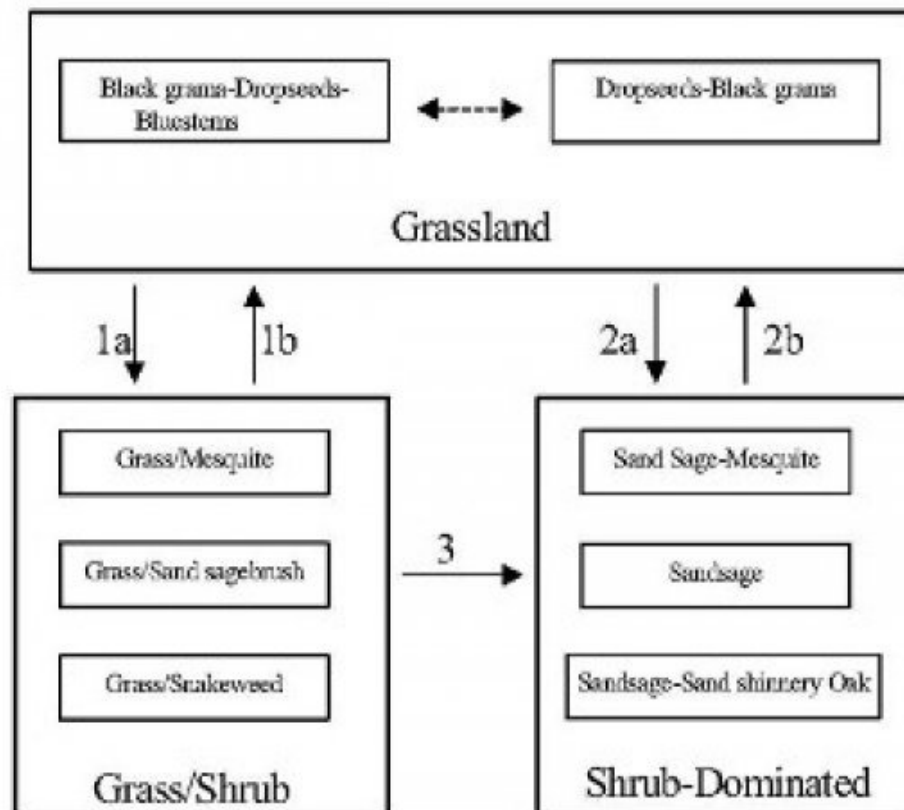
The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (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):

MLRA-42, SD-3, Loamy Sand



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/threawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threawn 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	<i>Schizachyrium scoparium</i>	61–123	–
2	Warm Season			37–61	
	sand bluestem	ANHA	<i>Andropogon hallii</i>	37–61	–
3	Warm Season			37–61	
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	37–61	–
	silver bluestem	BOSA	<i>Bothriochloa saccharoides</i>	37–61	–
4	Warm Season			123–184	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	123–184	–
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	123–184	–
5	Warm Season			123–184	
	thin paspalum	PASE5	<i>Paspalum setaceum</i>	123–184	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	123–184	–
	fringed signalgrass	URCI	<i>Urochloa ciliatissima</i>	123–184	–
6	Warm Season			123–184	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	123–184	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	123–184	–
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	123–184	–
7	Warm Season			61–123	
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	61–123	–
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	61–123	–
9	Other Perennial Grasses			37–61	
	Grass, perennial	2GP	<i>Grass, perennial</i>	37–61	–
Shrub/Vine					
8	Warm Season			37–61	
	New Mexico feathergrass	HENE5	<i>Hesperostipa neomexicana</i>	37–61	–
	giant dropseed	SPGI	<i>Sporobolus giganteus</i>	37–61	–
10	Shrub			61–123	

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

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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:

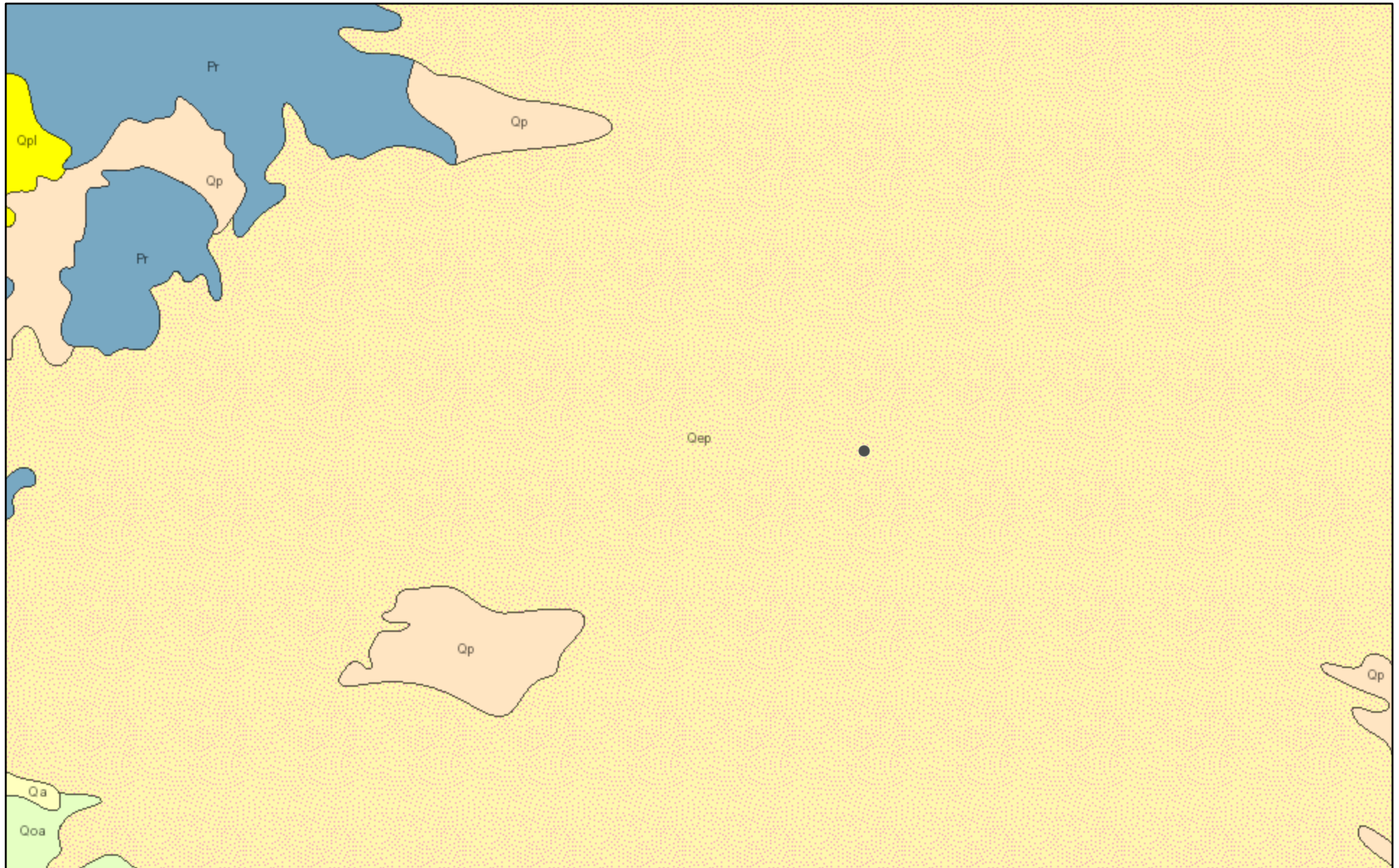
3. Number and height of erosional pedestals or terracettes:

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:

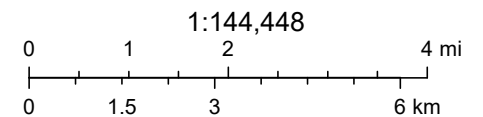
ArcGIS Web Map



2/17/2023, 3:51:09 PM

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perennial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)



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

ArcGIS Web AppBuilder

ATTACHMENT 6

Sent to NMOCD Dist 2 by
Devon via email 1/23/2015

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1532334246 **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company Devon Energy	Contact Kevin Phillips
Address PO Box 250 Artesia, NM 88211	Telephone No. 575- 748-3371
Facility Name Todd 36 I	Facility Type SWD

Surface Owner State	Mineral Owner State	API No. 30-015-20341
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	23S	31E	1980	WEST	1980	NORTH	EDDY

Latitude: 32.2626871870239 Longitude: 103.733599857938

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 75 BBL	Volume Recovered 50 BBL
Source of Release Water tank leak	Date and Hour of Occurrence 1/21/15 2:00PM	Date and Hour of Discovery 1/21/15 2:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? BLM- Jeff Robertson OCD- Mike Bratcher	
By Whom? Kevin Phillips	Date and Hour 1/22/15 10:15 PM BLM 1/22/15 1:00 PM OCD	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Hole in water tank.

Describe Area Affected and Cleanup Action Taken.*

Lease operator noticed a hole about 5' from the bottom of the tank. The containment was full and overflowing onto the location. 75 BBL total spill with 50 BBL recovered. Called SB Transportation for a vacuum truck to pick up water. Planning the cleanup with Enviro Clean.

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

Signature: <u>Jeanette Barron</u>	OIL CONSERVATION DIVISION	
Printed Name: <u>Jeanette Barron</u>	Signed By <u>Mike Bratcher</u> Approved by Environmental Specialist:	
Title: <u>Field Admin Support</u>	Approval Date: <u>11/19/15</u>	Expiration Date: <u>N/A</u>
E-mail Address: <u>Jeanette.barron@dvn.com</u>	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines <input type="checkbox"/> SUBMIT REMEDIATION PROPOSAL NO	
Date: <u>1.23.15</u> Phone: <u>575-748-1813</u>	LATER THAN: <u>12/19/15</u>	

* Attach Additional Sheets If Necessary

2RP-3405

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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	nAB1532334246
District RP	2RP-3405
Facility ID	30-015-20341
Application ID	

Release Notification

Responsible Party

Responsible Party Harvard Petroleum Company, LLC	OGRID 10155
Contact Name Jeff Harvard	Contact Telephone 575-208-7135
Contact email jharvard@hpcnm.com	Incident # nAB1532334246
Contact mailing address P.O. Box 936 Roswell, NM 88202	

Location of Release Source

Latitude **32.262704** Longitude **-103.733261**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Todd 36 State #001	Site Type Oil
Date Release Discovered January 21, 2015	API# 30-015-20341

Unit Letter	Section	Township	Range	County
F	36	23S	31E	Eddy

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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 75	Volume Recovered (bbls) 50
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

2RP-3405 C-141 received 11/18/2015 for release 1/21/2015. Cause listed as, "Hole in water tank." The area affected listed as, "Lease operator noticed a hole about 5' from the bottom of the tank. The containment was full and overflowing onto the location. 75 BBL total spill with 50 BBL recovered. Called SB Transporation for a vacuum truck to pick up water. Planning the cleanup with Enviro Clean."

Incident ID	nAB1532334246
District RP	2RP-3405
Facility ID	30-015-20341
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume exceeded 25 bbl.
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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Jeff Harvard</u>	Title: <u>President and Manager</u>
Signature: _____	Date: _____
email: <u>jharvard@hpcnm.com</u>	Telephone: <u>575-208-7135</u>
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	nAB1532334246
District RP	2RP-3405
Facility ID	30-015-20341
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? Will drill well to confirm.	<u>TBD Assume:</u> <u>>100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

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Incident ID	nAB1532334246
District RP	2RP-3405
Facility ID	30-015-20341
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: Jeff Harvard Title: President and Manager

Signature: _____ Date: _____

email: jharvard@hpcnm.com Telephone: 575-208-7135

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1532334246
District RP	2RP-3405
Facility ID	30-015-20341
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: Jeff Harvard Title: President and Manager

Signature: _____ Date: _____

email: jharvard@hpcnm.com Telephone: 575-208-7135**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 528327

QUESTIONS

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAB1532334246
Incident Name	NAB1532334246 TODD 36 STATE #001 @ 30-015-20341
Incident Type	Produced Water Release
Incident Status	Remediation Plan Approved
Incident Well	[30-015-20341] TODD 36 STATE #001

Location of Release Source

Please answer all the questions in this group.

Site Name	TODD 36 STATE #001
Date Release Discovered	01/21/2015
Surface Owner	Federal

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc. Tank (Any) Produced Water Released: 75 BBL Recovered: 50 BBL Lost: 25 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 528327

QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
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: Roni Kidd Title: Business Manager Email: rkidd@buckhornproduction.com Date: 11/20/2025
--	---

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QUESTIONS, Page 3

Action 528327

QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
<i>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.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (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	Between 1 and 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	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (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	
<i>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.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>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.</i>	
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)	30000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	16400
GRO+DRO (EPA SW-846 Method 8015M)	9400
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>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>	
On what estimated date will the remediation commence	01/01/2026
On what date will (or did) the final sampling or liner inspection occur	03/01/2026
On what date will (or was) the remediation complete(d)	03/01/2026
What is the estimated surface area (in square feet) that will be reclaimed	6951
What is the estimated volume (in cubic yards) that will be reclaimed	1030
What is the estimated surface area (in square feet) that will be remediated	198
What is the estimated volume (in cubic yards) that will be remediated	9
<i>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.</i>	
<i>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.</i>	

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QUESTIONS, Page 4

Action 528327

QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Remediation Plan (continued)	
<i>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.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(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	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
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.
<i>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>	
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: Roni Kidd Title: Business Manager Email: rkidd@buckhornproduction.com Date: 11/20/2025
<i>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.</i>	

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QUESTIONS, Page 5

Action 528327

QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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

Sante Fe Main Office
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Santa Fe, NM 87505

QUESTIONS, Page 6

Action 528327

QUESTIONS (continued)

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	{Unavailable.}

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	No
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Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/oecd/contact-us>

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

CONDITIONS

Action 528327

CONDITIONS

Operator: HARVARD PETROLEUM COMPANY, LLC P.O. Box 936 Roswell, NM 88202	OGRID: 10155
	Action Number: 528327
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Confirmation samples should be collected every 400 ft2. All off pad areas must meet reclamation standards set forth in the OCD Spill Rule. The work will need to occur in 90 days after the work plan has been reviewed.	1/9/2026