



Incident Number: nAPP2327744458

## Release Assessment and Closure

Piglet State SWD #1

Section 21, Township 17 South, Range 28 East

API: 30-015-40820

County: Eddy

Vertex File Number: 23E-05383

**Prepared for:**

Silverback Exploration

**Prepared by:**

Vertex Resource Services Inc.

**Date:**

June 2024

**Silverback Exploration**  
Piglet State SWD #1

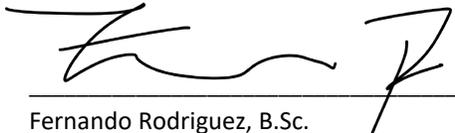
**Release Assessment and Closure**  
June 2024

**Release Assessment and Closure**  
**Piglet State SWD #1**  
**Section 21, Township 17 South, Range 28 East**  
**API: 30-015-40820**  
**County: Eddy**

Prepared for:  
**Silverback Exploration**  
108 South 4<sup>th</sup> Street  
Artesia, New Mexico 88210

**New Mexico Oil Conservation Division – District 2 – Artesia**  
811 South 1<sup>st</sup> Street  
Artesia, New Mexico 88210

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

  
\_\_\_\_\_  
Fernando Rodriguez, B.Sc.  
INTERMEDIATE BIOLOGIST, REPORTING

June 17, 2024  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Chance Dixon, B.Sc.  
PROJECT MANAGER, REPORT REVIEW

June 17, 2024  
\_\_\_\_\_  
Date

**Table of Contents**

**1.0 Introduction ..... 1**

**2.0 Incident Description ..... 1**

**3.0 Site Characteristics ..... 1**

**4.0 Closure Criteria Determination ..... 2**

**5.0 Remedial Actions Taken..... 4**

    5.1 NMOCD Response to Closure..... 5

        5.1.1 Corrective Actions..... 5

**6.0 Closure Request..... 5**

**7.0 References ..... 6**

**8.0 Limitations ..... 7**

### **In-text Tables**

- Table 1. Closure Criteria Determination
- Table 2. Closure Criteria for Soils Impacted by a Release

### **List of Figures**

- Figure 1. Characterization Sampling Site Schematic
- Figure 2. Confirmatory Sampling Site Schematic

### **List of Tables**

- Table 3. Initial Characterization Field Screen and Laboratory Results – Depth to Groundwater 51-100 feet bgs
- Table 4. Confirmatory Sample Field Screen and Laboratory Results – Depth to Groundwater 51-100 feet bgs

### **List of Appendices**

- Appendix A. NMOCD C 141 Report
- Appendix B. Closure Criteria Research Documentation
- Appendix C. Daily Field Reports
- Appendix D. Notifications
- Appendix E. Laboratory Data Reports and Chain of Custody Forms
- Appendix F. Depth to Groundwater Drilling

## 1.0 Introduction

Silverback Exploration (Silverback) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a produced water release that occurred on October 2, 2023, at Piglet State SWD #1 API 30-015-40820 (hereafter referred to as the “site”). Silverback submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 2 on October 4, 2023. Incident ID number nAPP2327744458 was assigned to this incident.

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

## 2.0 Incident Description

The release occurred on October 2, 2023, due to a lightning strike on one of the fiberglass water tanks and causing a fire. Immediate notice was given on October 2, 2023, and involved the release of approximately 1,200 barrels (bbl.) of produced water into the lined containment and on the constructed caliche pad. Approximately 1,000 bbl. of standing fluids were recovered during initial clean-up. Additional details relevant to the release are presented in the C-141 Report.

## 3.0 Site Characteristics

The site is located approximately 12.8 miles East of Artesia, New Mexico. The legal location for the site is Section 21, Township 17 South and Range 28 East in Eddy County, New Mexico. The release area is located on State property. An aerial photograph and site schematic are presented on Figure 1.

The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas production and storage. The following sections specifically describe the release area surrounding the tank battery facility on the constructed pad.

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site’s surface geology primarily comprises Qoa – Older alluvial deposits (middle to lower Pleistocene), and is characterized as Simona sandy loam. Predominant soil texture on the site is fine sandy loam. Soils can be classified as well-drained with a moderately slow runoff class. There is low potential for karst geology at the site (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with upland plains, and tops of low ridges and mesas with elevations ranging between 2,842 and 4,500 feet. The climate is semiarid with average annual precipitation ranging between 8 and 13 inches. Using information from the United States Department of Agriculture, the historical plant community was determined to be a black grama dominated grassland sparsely dotted with shrubs. Fire suppression, and the loss of

grass cover due to overgrazing and drought may facilitate the increase and encroachment of shrubs (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way and access road.

#### **4.0 Closure Criteria Determination**

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

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is Red Lake located approximately 1.3 miles northeast of the site (United States Fish and Wildlife Service, 2023).

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

<b>Table 1. Closure Criteria Determination</b>			
<b>Site Specific Conditions</b>		<b>Value</b>	<b>Unit</b>
1	Depth to Groundwater (nearest reference)	>55	feet
	Distance between release and nearest DTGW reference	680	feet
		0.12	miles
	Date of nearest DTGW reference measurement	January 22, 2024	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	873	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	6,844	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	3,330	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or	679	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	2,819	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	9,346	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	7,337	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	4,791	feet
11	Soil Type	SA: Simona sandy loam	
12	Ecological Classification	R070BD002NM — Shallow Sandy	
13	Geology	Qoa- Older alluvial deposits	
	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	51-100'	<50' 51-100' >100'

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

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

TDS – total dissolved solids

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

BTEX – benzene, toluene, ethylbenzene and xylenes

### 5.0 Remedial Actions Taken

An initial site inspection of the release area was completed on October 9, 2023, which identified the area of the release specified in the initial C-141 Report, estimated the approximate volume of the release and white lined the area required for the One Call request. The impacted area was determined to be approximately 323 feet long and 320 feet wide; the total affected area is 72,864 square feet. Site characterization activities were conducted by Vertex between October 12 and October 18, 2023. A total of 14 sampling boreholes were established to obtain both horizontal and vertical delineation. From these boreholes, a total of 31 samples were collected at several depths and submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. The Daily Field Reports (DFRs) and site photographs associated with the site inspection are included in Appendix C. Characterization laboratory results are presented in Table 3.

Remediation efforts began on October 3, 2023, and were finalized on May 23, 2024, for areas that exceeded the selected closure criteria. During this period, work crews deconstructed standing equipment and other infrastructure affected by the fire. The fiberglass tank debris that resulted from the fire were also removed and hauled off to a disposal location. Vertex personnel supervised the removal of impacted soils. Field screening was completed on a total of 68 sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Silver Nitrate titrations (chlorides). Field screening results were used to identify areas requiring further remediation. Using information from the characterization, exceedances were identified to be on the northeast section of the pad. These materials were removed to a depth of 0.5 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. The final DFR with photographs of the remediated site prior to backfill is included in Appendix C.

Notification that confirmatory samples were being collected was provided to the NMOCD on October 31, 2023, and is included in Appendix D. Confirmatory composite samples were collected from the surface of the excavation in 200 square foot increments. A total of 68 confirmation samples (60 base samples and eight wall samples) were collected

for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 4, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below closure criteria for the site.

### 5.1 NMOCD Response to Closure

On April 10, 2024, the C-141 application for a remediation closure report was denied. The operator was emailed details stating: "Please continue to laterally delineate/excavate sidewall sample locations until they meet closure criteria standards. Sidewall/edge samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. All sidewall samples should be taken from the sidewall of the excavation." On May 15, 2024, Vertex and Silverback held a meeting with the NMOCD to discuss the next steps towards achieving incident closure.

#### 5.1.1 Corrective Actions

On May 23, 2024, in response to the NMOCD closure report denial and request to continue to laterally delineate the sidewall sample locations until they meet closure criteria standards, a total of 8 sampling boreholes were established to complete horizontal delineation. From these boreholes, a total of 16 samples were collected at depths of 0 to 2 feet and submitted to Cardinal Laboratories in Hobbs, New Mexico. The sampling locations of these points were established surrounding the initial impacted area to ensure comprehensive coverage and to define the edge of the release. The Daily Field Report (DFR) and site photographs associated with this sampling event are included in Appendix C. The laboratory results are also included in Table 4.

## 6.0 Closure Request

Vertex recommends no additional remedial actions at the site. Laboratory analyses of confirmation samples collected at the site show final confirmatory values below NMOCD closure criteria for areas where depth to groundwater is between 51 to 100 feet, as presented in Table 2. There are no anticipated risks to human, ecological, or hydrological receptors at this site. The excavation was backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally, and placed to meet the site's existing grade to prevent water ponding and erosion. Additionally, a 2-foot earthen berm was placed around the perimeter of the pad to eliminate the possibility of surface runoff into off-pad areas outside the lease boundary. The reclamation requirements of 19.15.29.13 NMAC will be completed when the site is decommissioned, and all water-transferring activities are terminated.

Vertex requests that this incident (nAPP2327744458) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Silverback certifies that all information in this report and the appendices are correct and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the site.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or [cdixon@vertex.ca](mailto:cdixon@vertex.ca).

## 7.0 References

- Google Inc. (2024). *Google Earth Pro (Version 7.3.3)* [Software]. Retrieved from <https://earth.google.com>
- New Mexico Bureau of Geology and Mineral Resources. (2024). *Interactive Geologic Map*. Retrieved from <https://maps.nmt.edu/>
- New Mexico Department of Surface Water Quality Bureau. (2023). *Assessed and Impaired Waters of New Mexico*. Retrieved from <https://gis.web.env.nm.gov/oem/?map=swqb>
- New Mexico Energy, Minerals and Natural Resources Department. (2023). *OCD Permitting - Spill Search*. Retrieved from <https://wwwapps.emnrd.nm.gov/ocd/ocdpermitting/Data/Spills/Spills.aspx>
- New Mexico Mining and Minerals Division. (2023). *Coal Mine Resources in New Mexico*. Retrieved from <https://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=5f80f3b0faa545e58fe747cc7b037a93>
- New Mexico Office of the State Engineer. (2023a). *Point of Diversion Location Report - New Mexico Water Rights Reporting System*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html>
- New Mexico Office of the State Engineer. (2023b). *Water Column/Average Depth to Water Report - New Mexico Water Rights Reporting System*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>
- New Mexico Office of the State Engineer. (2023c). *Well Log/Meter Information Report - New Mexico Water Rights Reporting System*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html>
- New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.
- United States Department of Agriculture, Natural Resources Conservation Service. (2023). *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- United States Department of Homeland Security, Federal Emergency Management Agency. (2023). *FEMA Flood Map Service: Search by Address*. Retrieved from <https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor>
- United States Department of the Interior, Bureau of Land Management. (2018). *New Mexico Cave/Karst*. Retrieved from [https://www.nm.blm.gov/shapeFiles/cfo/carlsbad\\_spatial\\_data.html](https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)
- United States Fish and Wildlife Service. (2023). *National Wetland Inventory - Surface Waters and Wetlands*. Retrieved from <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>
- United States Geological Survey. (2023). *National Water Information System: Web Interface*. Retrieved from <https://waterdata.usgs.gov/nwis>

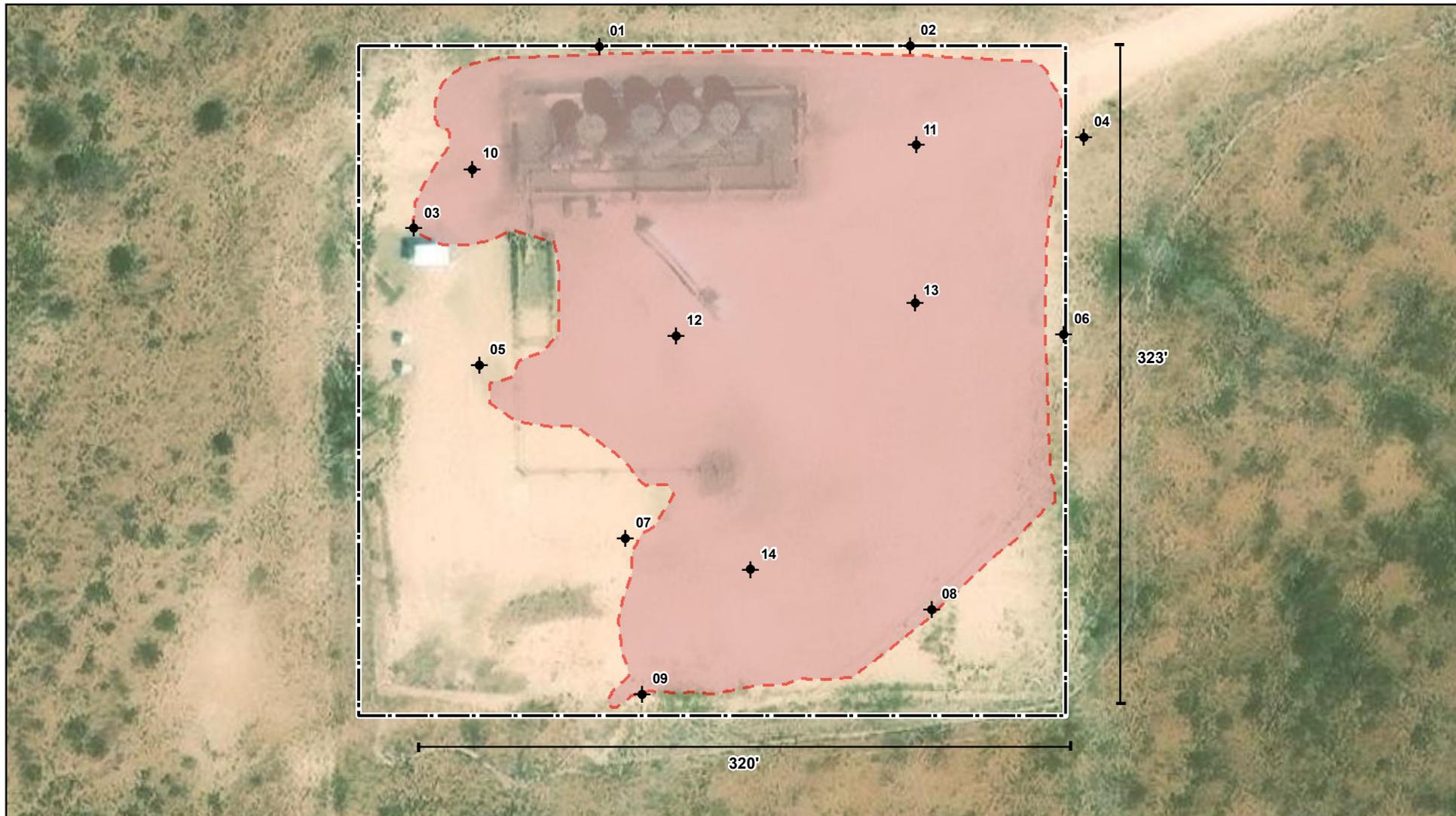
## **8.0 Limitations**

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

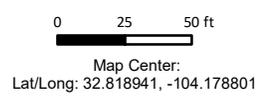
The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement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

## **FIGURES**

Document Path: G:\Projects\US PROJECTS\Silverback Exploration\23E-05383\Figure 1 Characterization Schematic (23E-05383)\D17318.mxd



- ◆ Borehole (Prefixed by "BH23-")
- Approximate Release Area (~72,864 sq. ft.)
- Approximate Lease Boundary



NAD 1983 UTM Zone 13N  
Date: Nov 07/23



### Characterization Sampling Site Schematic Piglet State SWD #1

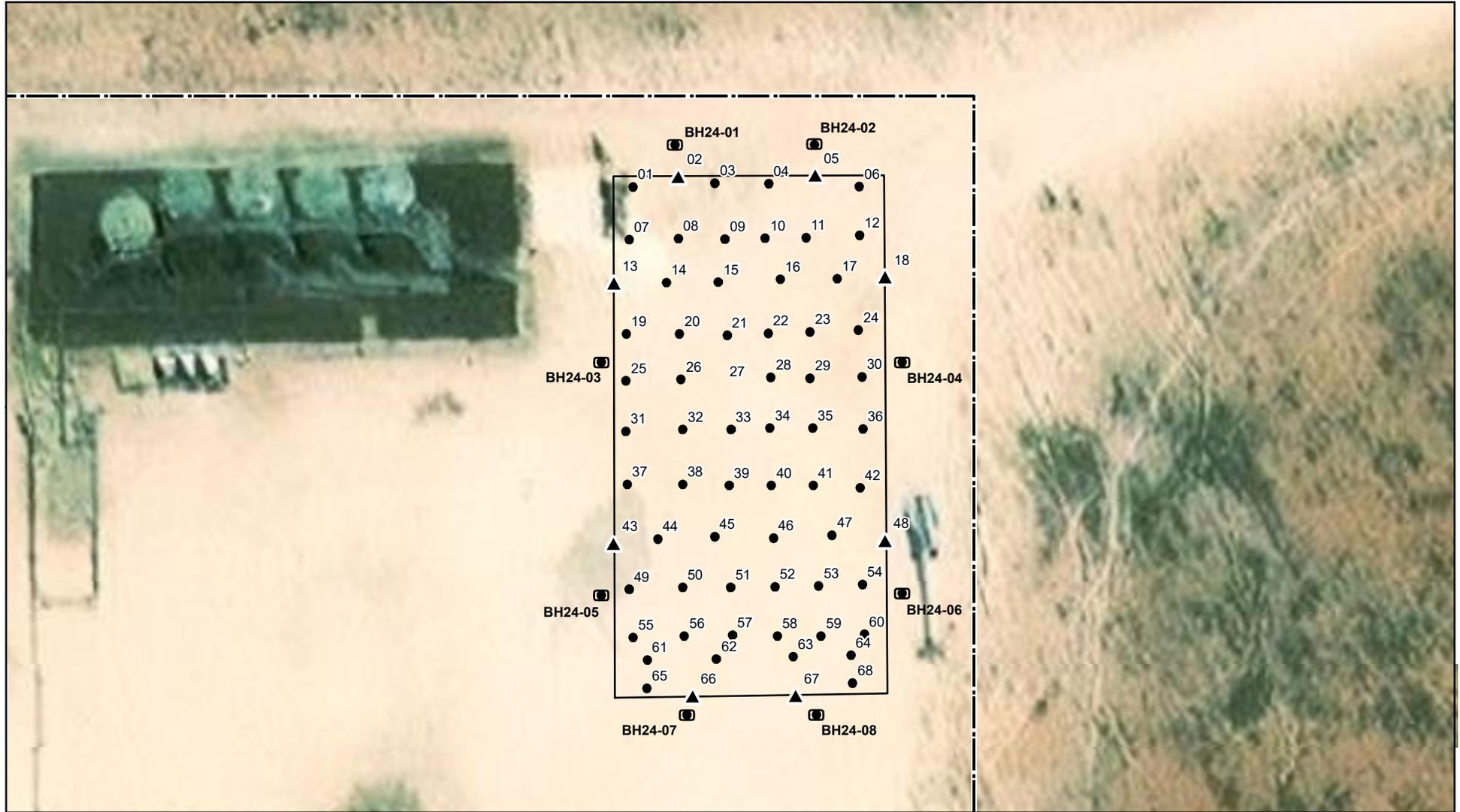
FIGURE:  
**1**



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, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.



- Base Sample (Excavated) (Prefixed by "BS23-")
- ▲ Wall Sample (Excavated) (Prefixed by "WS23-")
- ◻ Borehole Sample (Excavated) (Prefixed by "BH24-")
- ▭ Approximate Lease Boundary
- Sampling Area



0 15 30 60 ft  
 Map Center:  
 Lat/Long: 32.819184, -104.178495

NAD 1983 UTM Zone 13N  
 Date: June 2024



### Confirmatory Sampling Site Schematic Piglet State SWD #1 Battery

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, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\Projects\US PROJECTS\Silverback Exploration\23E-05383\Figure 2 Confirmatory Sampling Site Schematic (23E-05383)ID17736.mxd

## **TABLES**

Client Name: Silverback Exploration  
 Site Name: Piglet State SWD #1  
 NMOCD Tracking #: nAPP2327744458  
 Project #: 23E-05383  
 Lab Reports: 2310833 and 2310A67

Table 3. Initial Characterization Field Screen and Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					Chloride Concentration
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Depth to Groundwater: 51-100 feet bgs													
BH23-01	0	October 13, 2023	ND	61	70	ND	ND	ND	ND	ND	ND	ND	ND
BH23-01	2	October 13, 2023	ND	58	108	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	0	October 13, 2023	ND	89	63	ND	ND	ND	ND	ND	ND	ND	ND
BH23-02	2	October 13, 2023	ND	76	93	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	0	October 13, 2023	ND	74	75	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	2	October 13, 2023	ND	81	93	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	0	October 12, 2023	ND	85	14	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	2	October 12, 2023	ND	64	266	ND	ND	ND	ND	ND	ND	ND	79
BH23-05	0	October 12, 2023	ND	68	191	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	2	October 12, 2023	ND	-	216	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	October 12, 2023	ND	66	25	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	2	October 12, 2023	ND	-	83	ND	ND	ND	ND	ND	ND	ND	ND
BH23-07	0	October 12, 2023	ND	90	554	ND	ND	ND	ND	ND	ND	ND	290
BH23-07	2	October 12, 2023	ND	81	463	ND	ND	ND	ND	ND	ND	ND	280
BH23-08	0	October 12, 2023	ND	56	46	ND	ND	ND	ND	ND	ND	ND	ND
BH23-08	2	October 12, 2023	ND	-	69	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	0	October 12, 2023	ND	80	116	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	2	October 12, 2023	ND	-	145	ND	ND	ND	ND	ND	ND	ND	81
BH23-10	0	October 16, 2023	5	357	831	ND	ND	ND	ND	ND	ND	ND	540
BH23-10	1	October 16, 2023	ND	99	305	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	0	October 16, 2023	135	1,830	13,958	ND	ND	ND	600	500	600	1100	18,000
BH23-11	1	October 16, 2023	ND	-	453	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	2	October 16, 2023	ND	69	323	ND	ND	ND	ND	ND	ND	ND	ND
BH23-12	0	October 16, 2023	209	1,640	4,064	ND	ND	ND	110	100	110	210	3,400
BH23-12	1	October 16, 2023	ND	154	528	ND	ND	ND	12	ND	12	12	160
BH23-12	2	October 18, 2023	ND	82	46	ND	ND	ND	ND	ND	ND	ND	68
BH23-13	0	October 16, 2023	101	1,370	14,258	ND	ND	ND	240	260	240	500	16,000
BH23-13	1	October 16, 2023	ND	82	665	ND	ND	ND	ND	ND	ND	ND	400
BH23-13	2	October 18, 2023	ND	86	266	ND	ND	ND	ND	ND	ND	ND	140
BH23-14	0	October 16, 2023	5	185	5,441	ND	ND	ND	ND	ND	ND	ND	4,800
BH23-14	1	October 16, 2023	ND	115	2,193	ND	ND	ND	ND	ND	ND	ND	1,900
BH23-14	2	October 18, 2023	ND	75	392	ND	ND	ND	ND	ND	ND	ND	190

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

**Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)**



Client Name: Silverback Exploration  
 Site Name: Piglet State SWD #1  
 NMOCD Tracking #: nAPP2327744458  
 Project #: 23E-05383  
 Lab Report(sX): 2211351, 2311454, 2311549, and H242938

Table 4. Confirmatory Sample Field Screen and Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons						Inorganic	
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable				Chloride Concentration	
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)		Total Petroleum Hydrocarbons (TPH)
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
Depth to Groundwater: 51-100 feet bgs													
BS23-01	0.5	November 6, 2023	ND	1,076	7,295	ND	ND	ND	240	280	240	520	5,700
WS23-02	0.5	November 6, 2023	ND	1,464	3,536	ND	ND	ND	540	520	540	1,060	2,300
BS23-03	0.5	November 6, 2023	ND	1,846	5,383	ND	ND	ND	720	780	720	1,500	4,500
BS23-04	0.5	November 6, 2023	ND	1,253	8,659	ND	ND	ND	410	530	410	940	4,300
WS23-05	0.5	November 6, 2023	ND	1,223	1,317	ND	ND	ND	540	620	540	1,160	850
BS23-06	0.5	November 6, 2023	ND	1,197	913	ND	ND	ND	220	150	220	370	440
BS23-07	0.5	November 6, 2023	ND	461	8,082	ND	ND	ND	52	64	52	116	2,100
BS23-08	0.5	November 6, 2023	ND	1,559	7,284	ND	ND	ND	260	380	260	640	7,100
BS23-09	0.5	November 6, 2023	ND	565	8,655	ND	ND	ND	88	97	88	185	2,600
BS23-10	0.5	November 6, 2023	ND	1,493	8,752	ND	ND	ND	310	350	310	660	5,900
BS23-11	0.5	November 6, 2023	ND	1,049	7,673	ND	ND	ND	130	150	130	280	6,300
BS23-12	0.5	November 6, 2023	ND	574	9,492	ND	ND	ND	78	89	78	167	2,900
WS23-13	0.5	November 6, 2023	ND	1,511	3,974	ND	ND	ND	380	460	380	840	2,700
BS23-14	0.5	November 6, 2023	ND	1,499	3,282	ND	ND	ND	380	440	380	820	2,300
BS23-15	0.5	November 6, 2023	ND	810	8,333	ND	ND	ND	220	270	220	490	2,800
BS23-16	0.5	November 6, 2023	ND	1,255	8,011	ND	ND	ND	210	260	210	470	5,100
BS23-17	0.5	November 6, 2023	ND	1,278	1,306	ND	ND	ND	440	530	440	970	820
WS23-18	0.5	November 6, 2023	ND	1,373	1,561	ND	ND	ND	340	240	340	580	780
BS23-19	0.5	November 6, 2023	ND	584	8,388	ND	ND	ND	77	100	77	177	4,200
BS23-20	0.5	November 6, 2023	ND	892	7,821	ND	ND	ND	130	140	130	270	5,300
BS23-21	0.5	November 6, 2023	ND	1,044	8,554	ND	ND	ND	140	150	140	290	8,300
BS23-22	0.5	November 6, 2023	ND	1,396	5,926	ND	ND	ND	210	240	210	450	4,600
BS23-23	0.5	November 6, 2023	ND	1,293	4,771	ND	ND	ND	240	300	240	540	3,900
BS23-24	0.5	November 6, 2023	ND	954	6,604	ND	ND	ND	110	130	110	240	6,000
BS23-25	0.5	November 7, 2023	ND	538	2,836	ND	ND	ND	180	170	180	350	1,900
BS23-26	0.5	November 7, 2023	ND	426	1,675	ND	ND	ND	110	110	110	220	1,200
BS23-27	0.5	November 7, 2023	ND	555	2,434	ND	ND	ND	150	150	150	300	1,800
BS23-28	0.5	November 7, 2023	ND	578	2,750	ND	ND	ND	180	180	180	360	2,300
BS23-29	0.5	November 7, 2023	ND	527	2,108	ND	ND	ND	120	120	120	240	1,500
BS23-30	0.5	November 7, 2023	ND	720	3,244	ND	ND	ND	200	190	200	390	2,200
BS23-31	0.5	November 7, 2023	ND	569	2,232	ND	ND	ND	140	140	140	280	1,500
BS23-32	0.5	November 7, 2023	ND	414	2,247	ND	ND	ND	100	100	100	200	1,600
BS23-33	0.5	November 7, 2023	ND	772	3,191	ND	ND	ND	250	250	250	500	1,900
BS23-34	0.5	November 7, 2023	ND	643	2,489	ND	ND	ND	190	190	190	380	2,300
BS23-35	0.5	November 7, 2023	ND	671	3,061	ND	ND	ND	160	160	160	320	1,900
BS23-36	0.5	November 7, 2023	ND	725	2,696	ND	ND	ND	120	140	120	260	2,200
BS23-37	0.5	November 7, 2023	ND	484	2,470	ND	ND	ND	110	130	110	240	1,700
BS23-38	0.5	November 7, 2023	ND	559	2,582	ND	ND	ND	100	120	100	220	2,100
BS23-39	0.5	November 7, 2023	ND	623	2,423	ND	ND	ND	110	150	110	260	1,700
BS23-40	0.5	November 7, 2023	ND	1,066	4,578	ND	ND	ND	200	260	200	460	3,000
BS23-41	0.5	November 7, 2023	ND	526	2,612	ND	ND	ND	88	120	88	208	1,700
BS23-42	0.5	November 7, 2023	ND	863	3,589	ND	ND	ND	210	260	210	470	3,200
WS23-43	0.5	November 7, 2023	ND	1,085	2,771	ND	ND	ND	170	220	170	390	1,500
BS23-44	0.5	November 7, 2023	ND	696	2,573	ND	ND	ND	200	240	200	440	2,200
BS23-45	0.5	November 7, 2023	ND	850	2,789	ND	ND	ND	170	210	170	380	2,300
BS23-46	0.5	November 7, 2023	ND	889	2,629	ND	ND	ND	180	230	180	410	2,200
BS23-47	0.5	November 7, 2023	ND	646	2,413	ND	ND	ND	140	180	140	320	2,100
WS23-48	0.5	November 7, 2023	ND	692	2,470	ND	ND	ND	130	150	130	280	1,900
BS23-49	0.5	November 8, 2023	ND	580	2,792	ND	ND	ND	100	120	100	220	2,100
BS23-50	0.5	November 8, 2023	ND	648	2,518	ND	ND	ND	120	150	120	270	2,200



Table 4. Confirmatory Sample Field Screen and Laboratory Results													
Sample Description			Field Screening			Petroleum Hydrocarbons						Inorganic	
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					Chloride Concentration
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Depth to Groundwater: 51-100 feet bgs													
BS23-51	0.5	November 8, 2023	ND	621	2,423	ND	ND	ND	100	140	100	240	1,900
BS23-52	0.5	November 8, 2023	ND	699	2,596	ND	ND	ND	130	170	130	300	1,900
BS23-53	0.5	November 8, 2023	ND	560	2,567	ND	ND	ND	130	170	130	300	1,800
BS23-54	0.5	November 8, 2023	ND	419	2,244	ND	ND	ND	89	130	89	219	1,700
BS23-55	0.5	November 8, 2023	ND	891	2,678	ND	ND	ND	190	220	190	410	2,300
BS23-56	0.5	November 8, 2023	ND	778	3,241	ND	ND	ND	160	210	160	370	2,100
BS23-57	0.5	November 8, 2023	ND	853	2,876	ND	ND	ND	280	320	280	600	2,300
BS23-58	0.5	November 8, 2023	ND	529	2,110	ND	ND	ND	100	140	100	240	1,600
BS23-59	0.5	November 8, 2023	ND	869	3,602	ND	ND	ND	170	200	170	370	3,000
BS23-60	0.5	November 8, 2023	ND	428	1,682	ND	ND	ND	82	110	82	192	1,200
BS23-61	0.5	November 8, 2023	ND	1,089	2,765	ND	ND	ND	190	220	190	410	2,100
BS23-62	0.5	November 8, 2023	ND	488	2,457	ND	ND	ND	75	100	75	175	1,900
BS23-63	0.5	November 8, 2023	ND	728	2,678	ND	ND	ND	100	120	100	220	2,200
BS23-64	0.5	November 8, 2023	ND	560	2,404	ND	ND	ND	97	120	97	217	1,800
BS23-65	0.5	November 8, 2023	ND	1,067	4,608	ND	ND	ND	210	250	210	460	3,600
WS23-66	0.5	November 8, 2023	ND	570	2,221	ND	ND	ND	90	110	90	200	1,600
WS23-67	0.5	November 8, 2023	ND	648	2,472	ND	ND	ND	140	170	140	310	2,200
BH24-01	0	May 23, 2024	ND	-	486	ND	ND	ND	ND	ND	ND	ND	160
BH24-01	2	May 23, 2024	ND	-	96	ND	ND	ND	ND	ND	ND	ND	64
BH24-02	0	May 23, 2024	ND	-	196	ND	ND	ND	ND	ND	ND	ND	96
BH24-02	2	May 23, 2024	ND	-	158	ND	ND	ND	ND	ND	ND	ND	80
BH24-03	0	May 23, 2024	ND	-	412	ND	ND	ND	ND	ND	ND	ND	32
BH24-03	2	May 23, 2024	ND	-	427	ND	ND	ND	ND	ND	ND	ND	32
BH24-04	0	May 23, 2024	ND	-	456	ND	ND	ND	ND	ND	ND	ND	32
BH24-04	2	May 23, 2024	ND	-	124	ND	ND	ND	ND	ND	ND	ND	96
BH24-05	0	May 23, 2024	ND	-	56	ND	ND	ND	ND	ND	ND	ND	32
BH24-05	2	May 23, 2024	ND	-	138	ND	ND	ND	ND	ND	ND	ND	80
BH24-06	0	May 23, 2024	ND	-	431	ND	ND	ND	ND	ND	ND	ND	80
BH24-06	2	May 23, 2024	ND	-	272	ND	ND	ND	ND	ND	ND	ND	128
BH24-07	0	May 23, 2024	ND	-	80	ND	ND	ND	ND	ND	ND	ND	80
BH24-07	2	May 23, 2024	ND	-	95	ND	ND	ND	ND	ND	ND	ND	64
BH24-08	0	May 23, 2024	ND	-	37	ND	ND	ND	ND	ND	ND	ND	80
BH24-08	2	May 23, 2024	ND	-	51	ND	ND	ND	ND	ND	ND	ND	32

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

**Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)**



## **APPENDIX A - NMOCD C-141 Report**

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

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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 type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input 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: _____ Title: _____ Signature: _____ Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b>  Received by: _____ Date: _____

## **APPENDIX B – Closure Criteria Research Documentation**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">RA 12307 POD1</a>	RA	ED		4	2	2	14	17S	28E	580495	3633981	4391	140	58	82
<a href="#">RA 12456 POD1</a>	RA	ED		1	4	4	24	17S	27E	572348	3630969	4552	220	92	128

Average Depth to Water: **75 feet**

Minimum Depth: **58 feet**

Maximum Depth: **92 feet**

**Record Count: 2**

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 576869

**Northing (Y):** 3631504

**Radius:** 5000

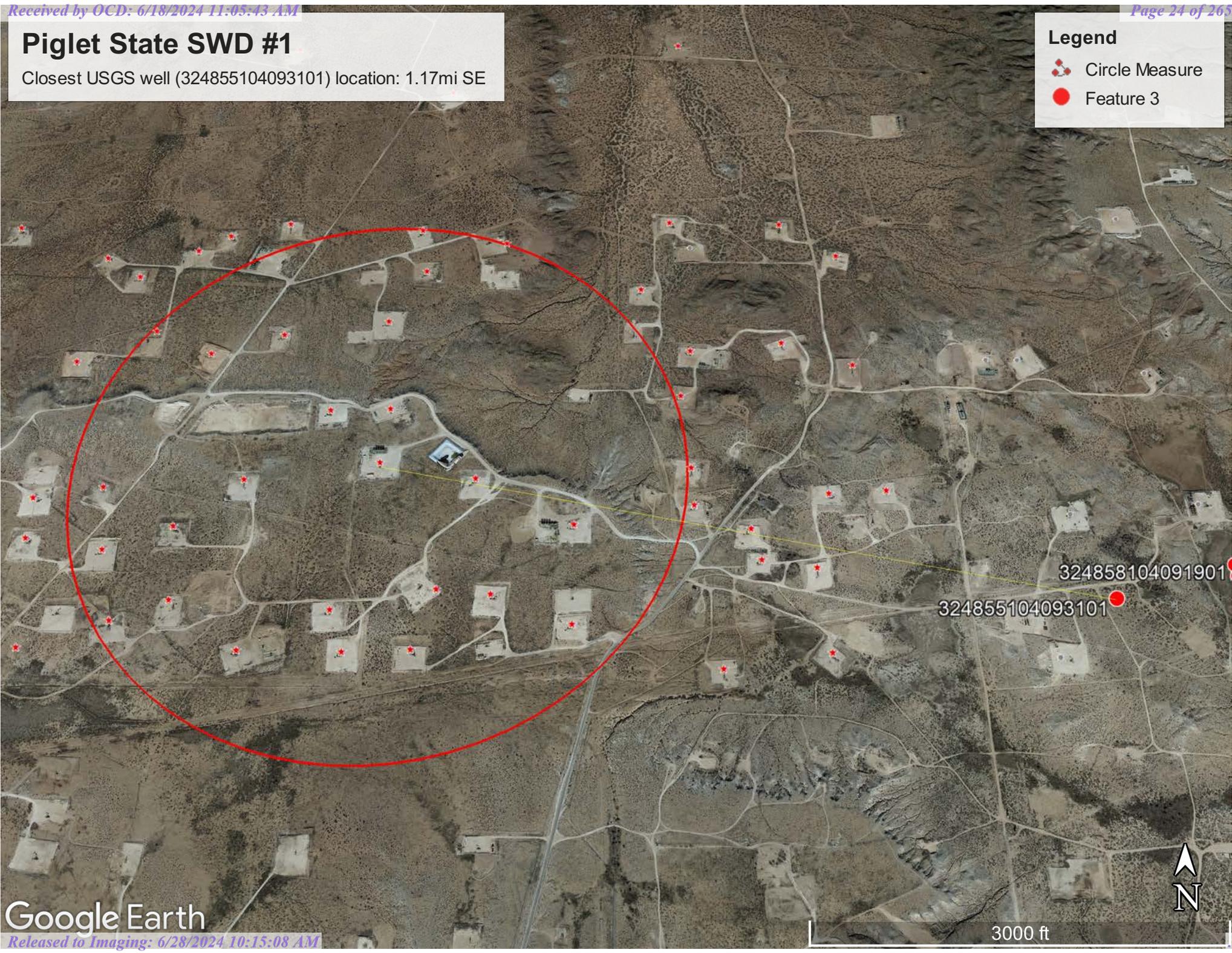
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

# Piglet State SWD #1

Closest USGS well (324855104093101) location: 1.17mi SE

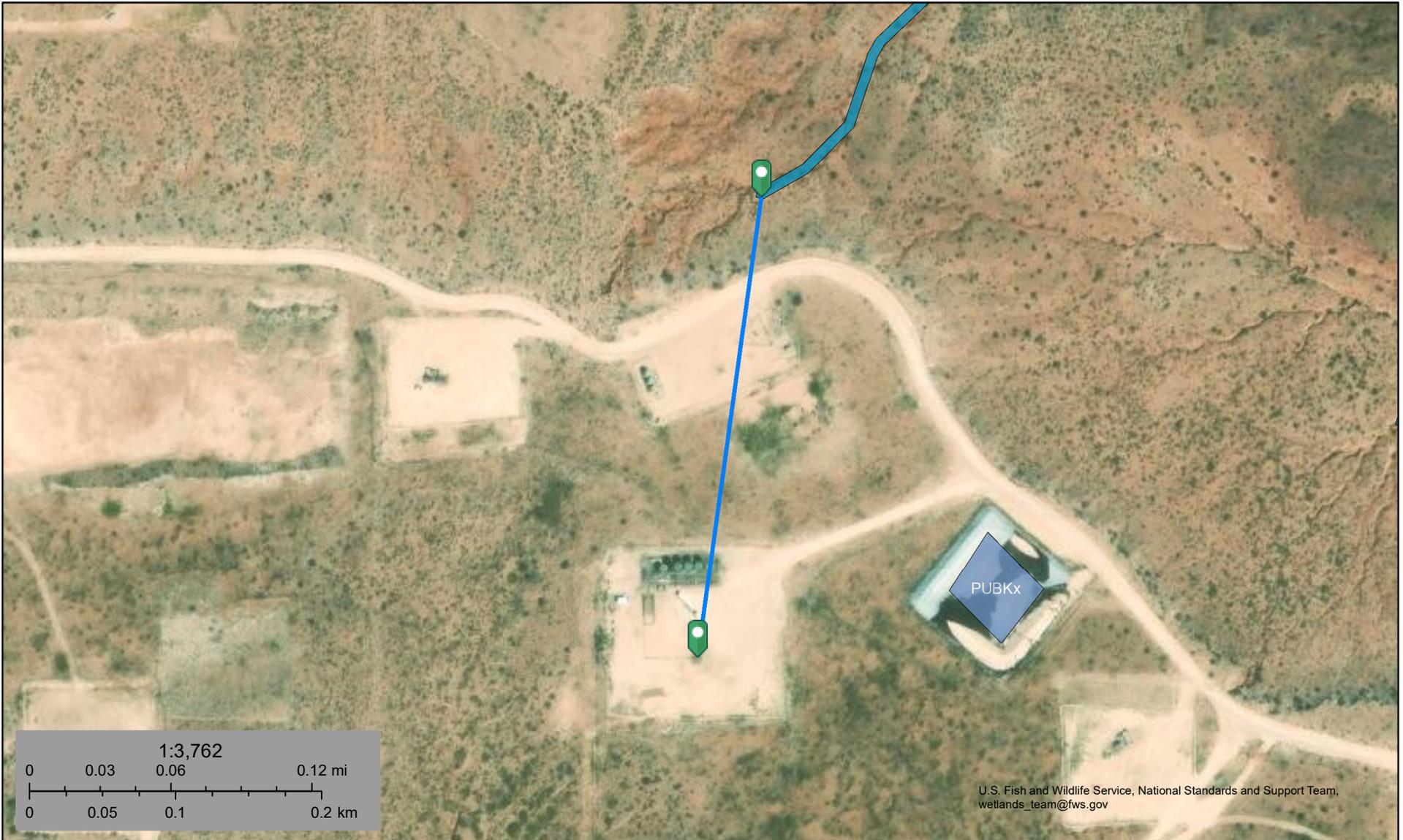
**Legend**

-  Circle Measure
-  Feature 3





# Piglet State SWD #1 Watercourse



October 3, 2023

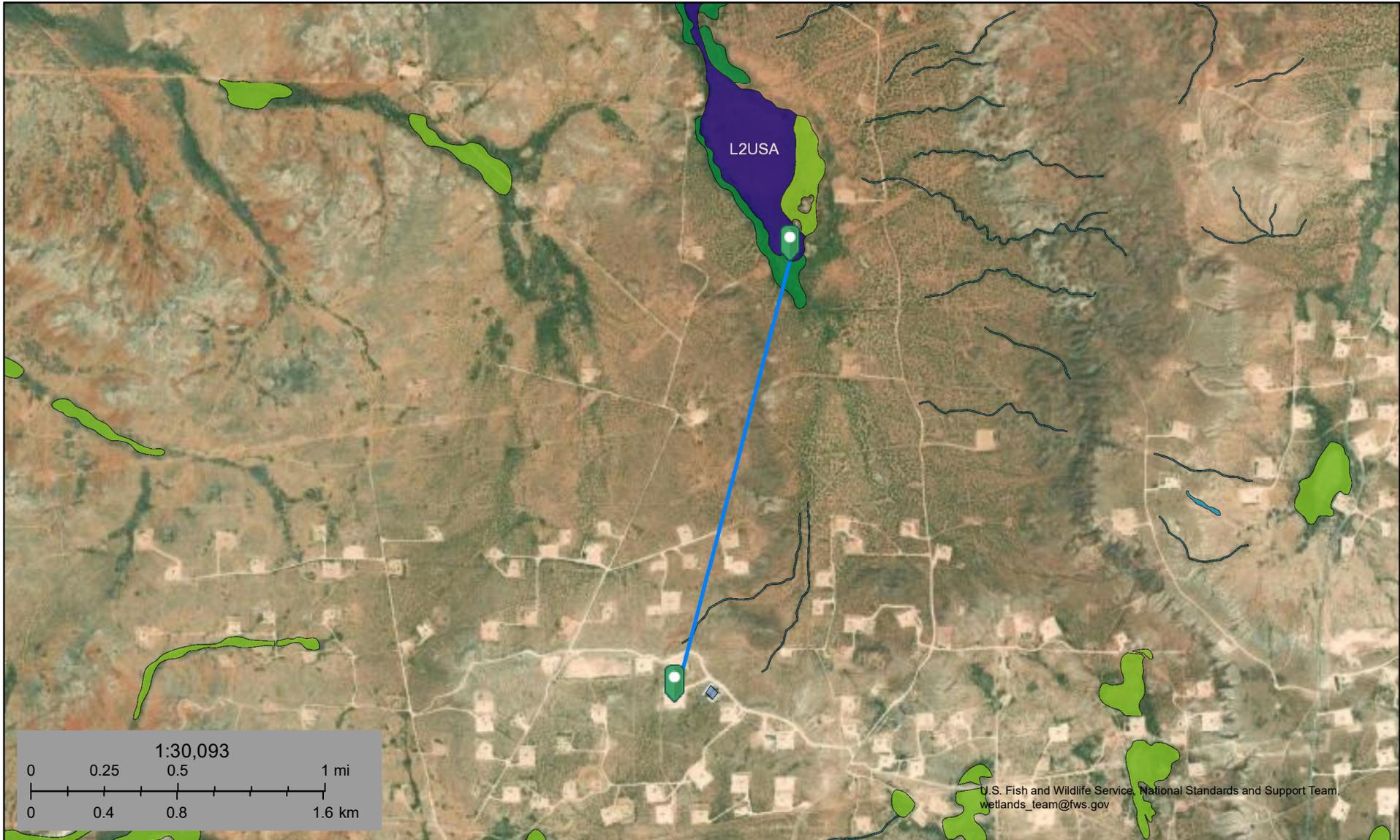
### Wetlands

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



# Piglet State SWD #1 Lake



October 3, 2023

### Wetlands

- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine 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.

# Piglet State SWD #1

Closest Residence: 0.63mi E

**Legend**

-  Piglet State SWD #1
-  Residence

Piglet State SWD #1

Residence





# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	(quarters are smallest to largest)				(NAD83 UTM in meters)		Distance
											q	q	q	q	X	Y	
<a href="#">RA 12030</a>	RA	MON		0 OXY USA WTP LP	ED	<a href="#">RA 12030 POD15</a>				4 3 2 21 17S 28E	577009	3631656				207	
					ED	<a href="#">RA 12030 POD18</a>				2 3 4 21 17S 28E	576906	3631135				370	
					ED	<a href="#">RA 12030 POD13</a>				1 3 2 21 17S 28E	576811	3631969				468	
					ED	<a href="#">RA 12030 POD20</a>				3 4 1 21 17S 28E	576382	3631725				535	
					ED	<a href="#">RA 12030 POD14</a>				4 4 2 21 17S 28E	577375	3631748				562	
					ED	<a href="#">RA 12030 POD46</a>				2 4 3 21 17S 28E	576496	3631083				562	
					ED	<a href="#">RA 12030 POD17</a>				2 4 4 21 17S 28E	577327	3631151				578	
					ED	<a href="#">RA 12030 POD21</a>				2 1 3 21 17S 28E	576271	3631506				597	
					ED	<a href="#">RA 12030 POD43</a>				3 3 4 21 17S 28E	576760	3630857				655	
					ED	<a href="#">RA 12030 POD44</a>				3 4 4 21 17S 28E	577156	3630844				718	
					ED	<a href="#">RA 12030 POD16</a>				3 1 3 22 17S 28E	577573	3631310				730	
					ED	<a href="#">RA 12030 POD11</a>				3 2 1 21 17S 28E	576420	3632135				774	
					ED	<a href="#">RA 12030 POD12</a>				2 1 2 21 17S 28E	577035	3632272				786	
					ED	<a href="#">RA 12030 POD45</a>				4 4 4 21 17S 28E	577441	3630902				830	
					ED	<a href="#">RA 12030 POD35</a>				3 4 3 21 17S 28E	576391	3630814				838	
					ED	<a href="#">RA 12030 POD22</a>				1 1 3 21 17S 28E	575988	3631461				881	
					ED	<a href="#">RA 12030 POD10</a>				1 3 1 21 17S 28E	576042	3631898				915	
					ED	<a href="#">RA 12030 POD40</a>				3 1 2 28 17S 28E	576799	3630524				981	

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)  
 C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)  
 C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)					(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)															
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q	q	q	Sec	Tws	Rng	X	Y	Distance	
					ED	<a href="#">RA 12030 POD8</a>					3	3	4	16	17S	28E	576724	3632486		992
					ED	<a href="#">RA 12030 POD42</a>					3	2	2	28	17S	28E	577163	3630555		993
					ED	<a href="#">RA 12030 POD6</a>					3	1	1	21	17S	28E	576009	3632172		1088
					ED	<a href="#">RA 12030 POD36</a>					3	2	1	28	17S	28E	576409	3630515		1089
					ED	<a href="#">RA 12030 POD9</a>					2	2	4	20	17S	28E	575715	3631468		1153
					ED	<a href="#">RA 12030 POD23</a>					2	4	4	20	17S	28E	575733	3631163		1185
					ED	<a href="#">RA 12030 POD31</a>					1	1	1	28	17S	28E	576008	3630651		1211
					ED	<a href="#">RA 12030 POD25</a>					4	4	4	20	17S	28E	575808	3630877		1231
					ED	<a href="#">RA 12030 POD41</a>					1	4	2	28	17S	28E	577142	3630238		1295
					ED	<a href="#">RA 12030 POD5</a>					1	4	2	20	17S	28E	575574	3631870		1345
<a href="#">RA 08230</a>	RA	STK		1.42 BOGLE FARMS	ED	<a href="#">RA 08230</a>								22	17S	28E	578281	3631638*		1418
<a href="#">RA 12030</a>	RA	MON		0 OXY USA WTP LP	ED	<a href="#">RA 12030 POD39</a>					3	3	2	28	17S	28E	576764	3630081		1426
					ED	<a href="#">RA 12030 POD37</a>					3	4	1	28	17S	28E	576381	3630112		1474
					ED	<a href="#">RA 12030 POD7</a>					4	4	4	17	17S	28E	575842	3632583		1489
					ED	<a href="#">RA 12030 POD4</a>					2	1	4	20	17S	28E	575375	3631480		1494
					ED	<a href="#">RA 12030 POD32</a>					4	2	2	29	17S	28E	575869	3630391		1495
					ED	<a href="#">RA 12030 POD24</a>					4	3	4	20	17S	28E	575433	3630960		1534
					ED	<a href="#">RA 12030 POD28</a>					3	2	2	29	17S	28E	575616	3630503		1603

\*UTM location was derived from PLSS - see Help

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.

**Record Count:** 36

**UTMNA83 Radius Search (in meters):**

**Easting (X):** 576869

**Northing (Y):** 3631504

**Radius:** 1610

**Sorted by:** Distance



# Piglet State SWD #1 Wetland



October 3, 2023

### Wetlands

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

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

# Piglet State SWD #1 Mine

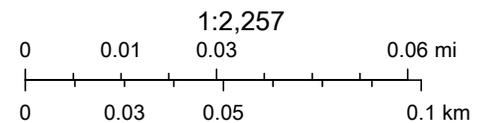


10/3/2023, 4:01:42 PM

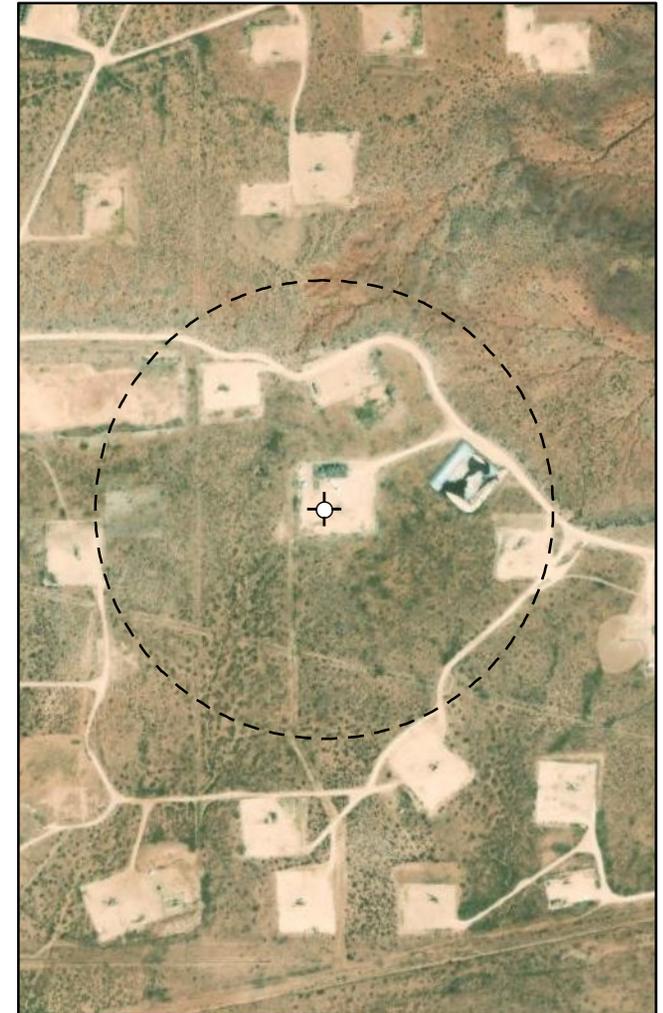
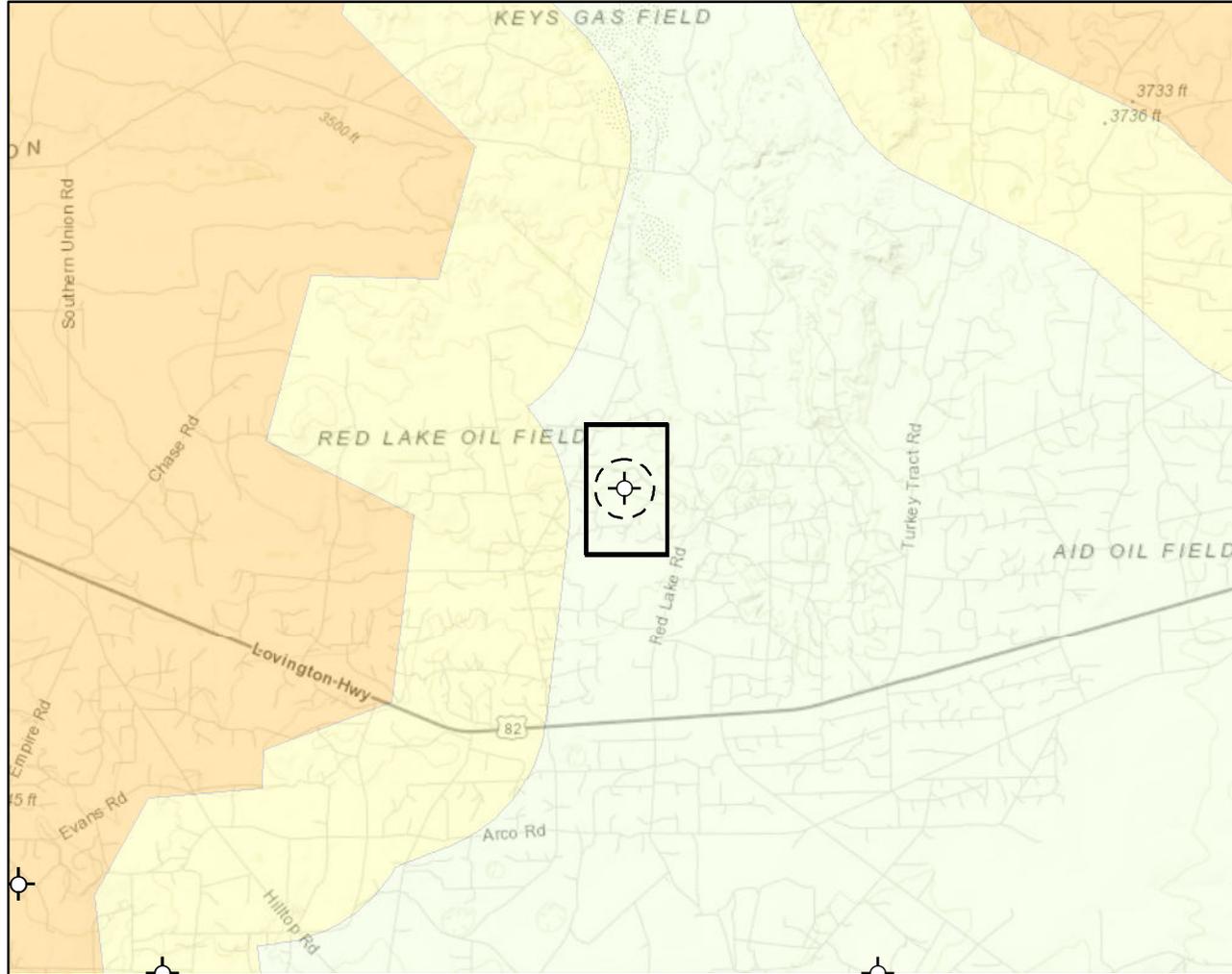
Land Ownership  S

BLM  PLSS Second Division

PLSS First Division



U.S. BLM, Maxar, Microsoft, Esri, HERE, Garmin, iPC, BLM



**Karst Potential**

- Critical
  - High
  - Medium
  - Low
- Site Location
  - Buffer Location (1,000 ft.)

**Overview Map**

0 0.25 0.5 1 mi

**Detail Map**

0 150 300 600 ft



Map Center:  
Lat/Long: 32.818855, -104.178816

NAD 1983 UTM Zone 13N  
Date: Nov 07/23



**Karst Potential Map  
Piglet State SWD #1**

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

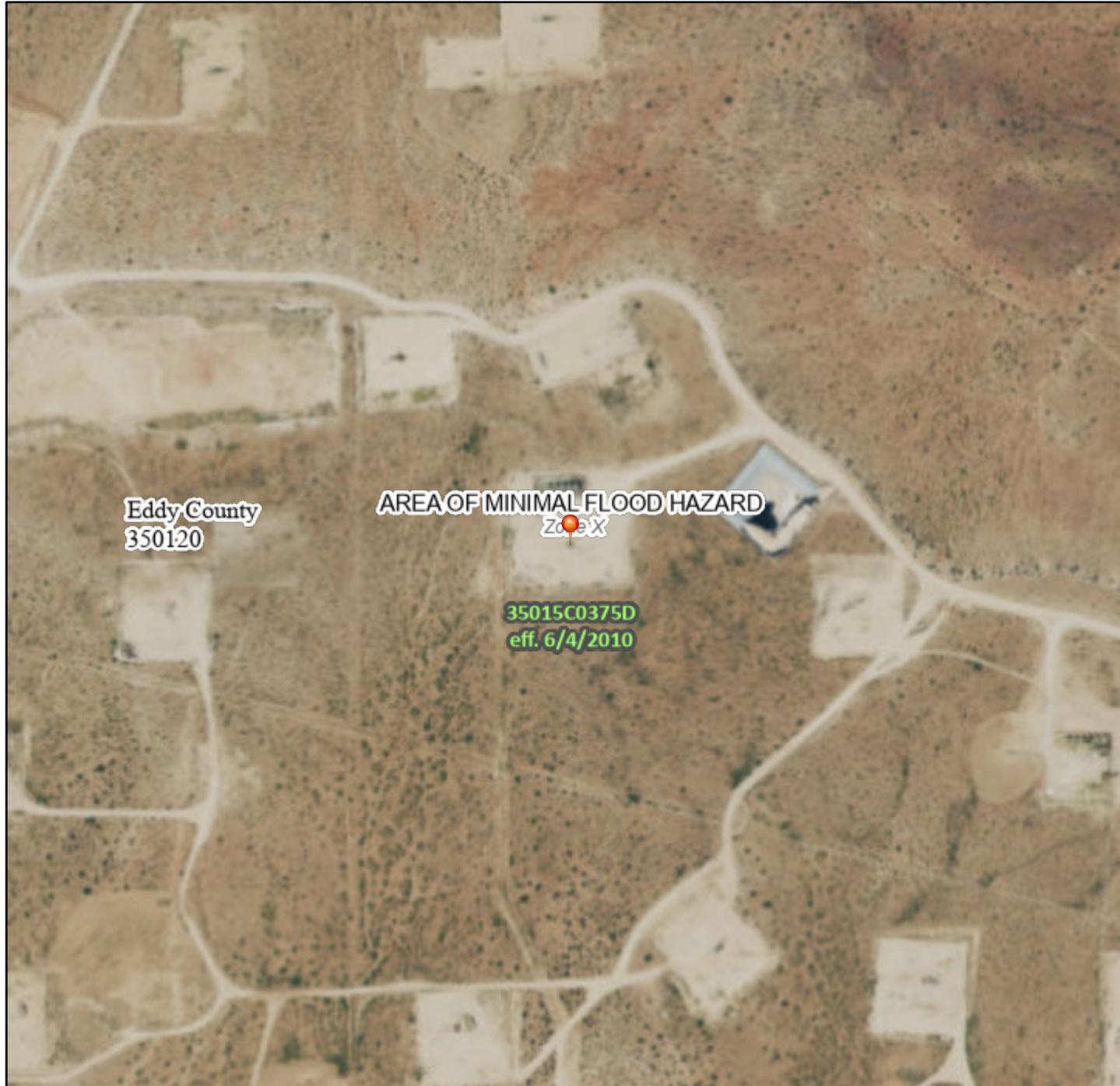
**VERSATILITY. EXPERTISE.**

Document Path: G:\Projects\US PROJECTS\Silverback Exploration\23E-05393\Figure X Karst Potential (23E-05393)ID17318.mxd

# National Flood Hazard Layer FIRMMette



104°11'2"W 32°49'23"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
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Profile Baseline
		Hydrographic Feature

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

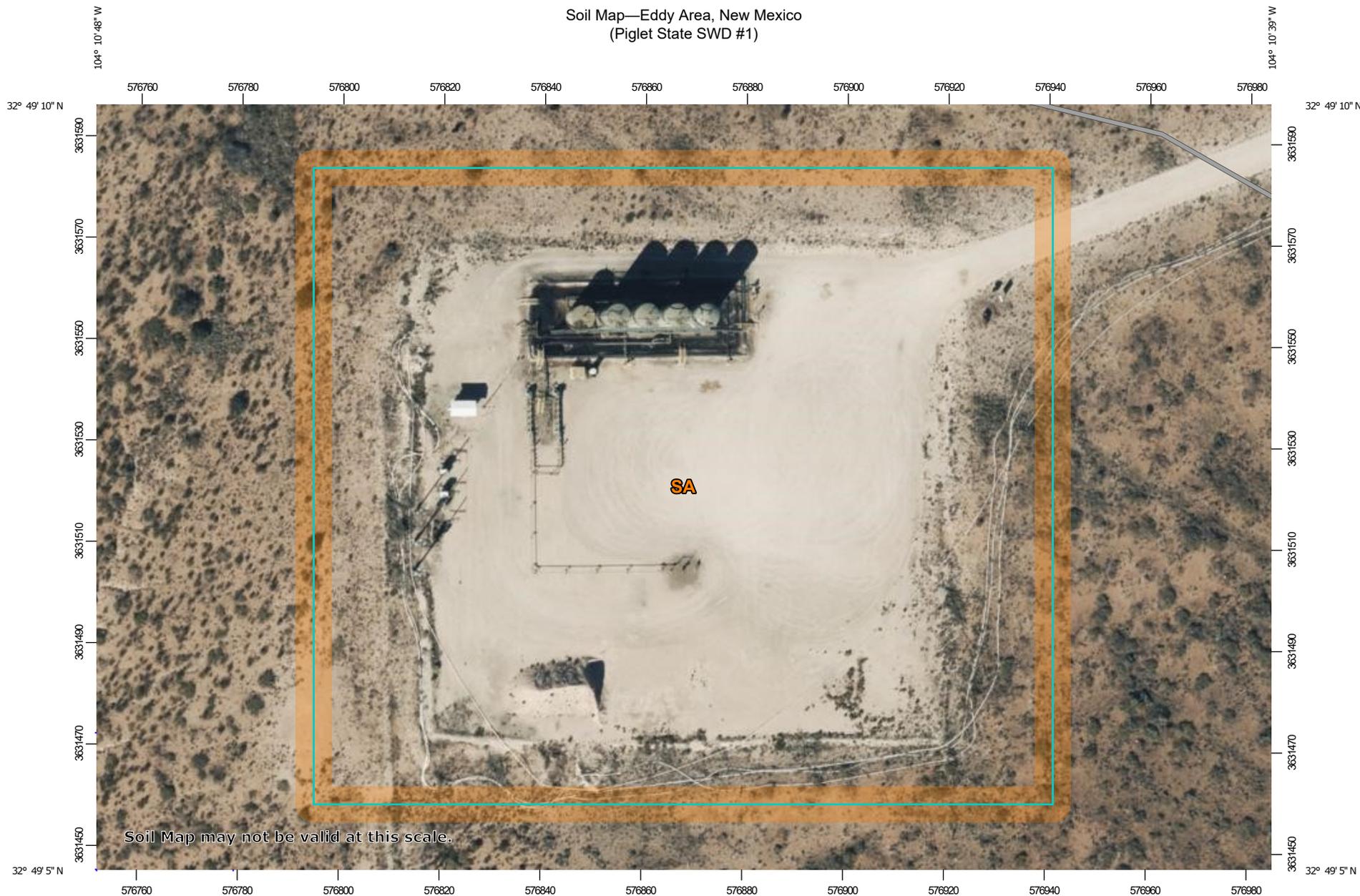
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/3/2023 at 6:04 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by 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.

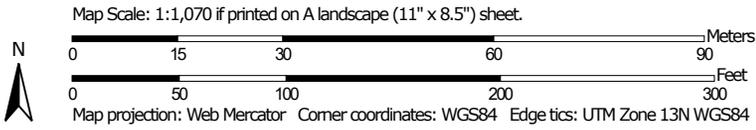
Released to Imaging: 6/28/2024 10:15:08 AM

1:6,000  
Basemap Imagery Source: USGS National Map 2023

### Soil Map—Eddy Area, New Mexico (Piglet State SWD #1)



Soil Map may not be valid at this scale.



Soil Map—Eddy Area, New Mexico  
(Piglet State SWD #1)

**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 19, Sep 7, 2023

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

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	4.6	100.0%
<b>Totals for Area of Interest</b>		<b>4.6</b>	<b>100.0%</b>



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



October 3, 2023

# Preface

---

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# Contents

---

<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map (Piglet State SWD #1).....	9
Legend.....	10
Map Unit Legend (Piglet State SWD #1).....	11
Map Unit Descriptions (Piglet State SWD #1).....	11
Eddy Area, New Mexico.....	13
SA—Simona sandy loam, 0 to 3 percent slopes.....	13
<b>References</b> .....	15

## How Soil Surveys Are Made

---

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

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

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

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

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

## Custom Soil Resource Report

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

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

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

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

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

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

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

### Custom Soil Resource Report

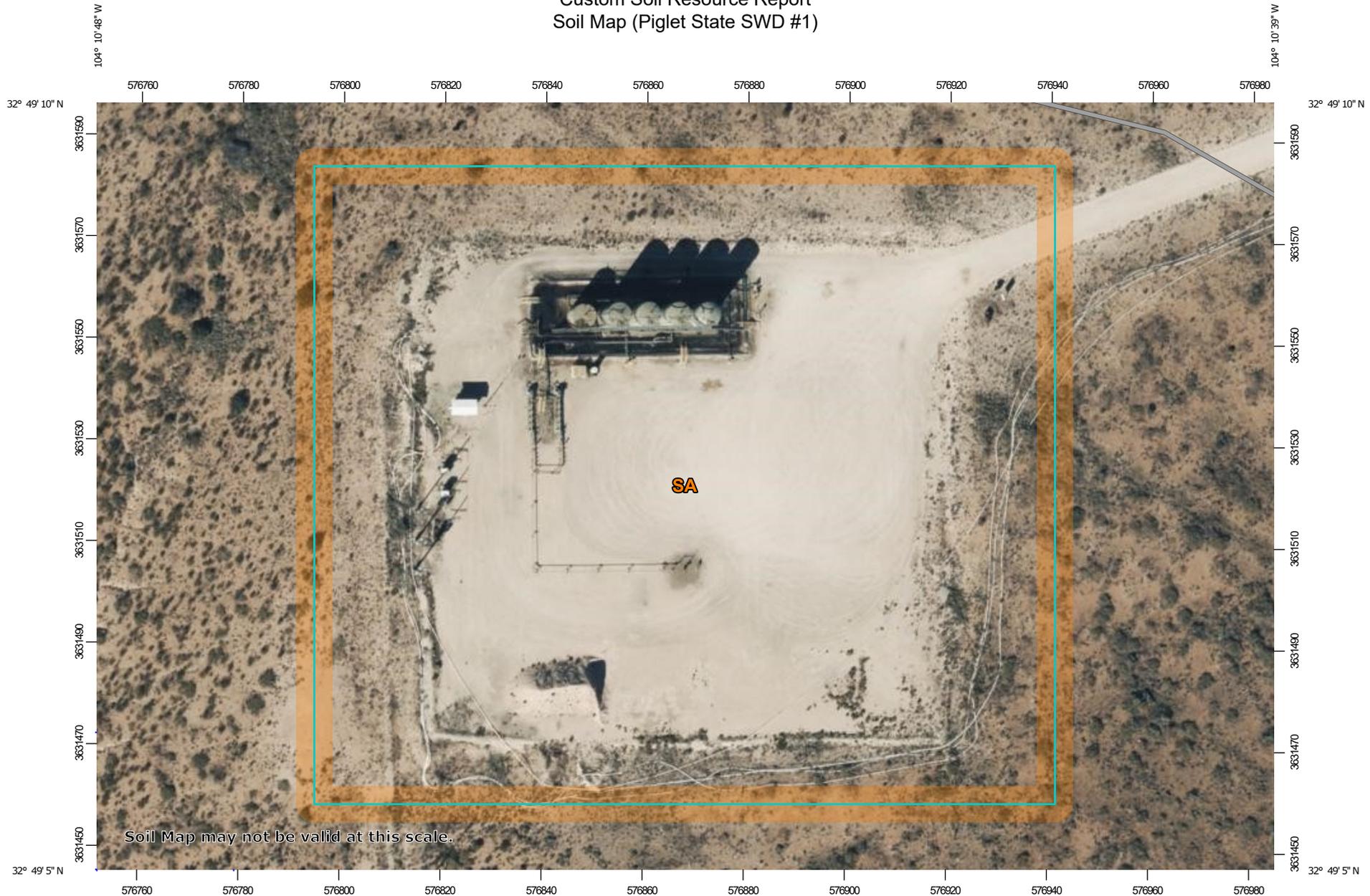
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

## Soil Map

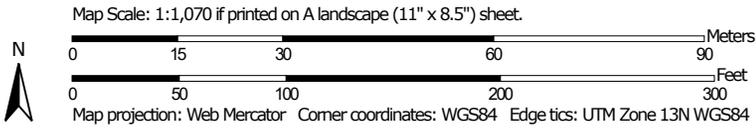
---

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

### Custom Soil Resource Report Soil Map (Piglet State SWD #1)



Soil Map may not be valid at this scale.



### 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 19, Sep 7, 2023

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

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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

**Map Unit Legend (Piglet State SWD #1)**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	4.6	100.0%
<b>Totals for Area of Interest</b>		<b>4.6</b>	<b>100.0%</b>

**Map Unit Descriptions (Piglet State SWD #1)**

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

## Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

## Custom Soil Resource Report

**Eddy Area, New Mexico****SA—Simona sandy loam, 0 to 3 percent slopes****Map Unit Setting**

*National map unit symbol:* 1w5v  
*Elevation:* 3,000 to 4,200 feet  
*Mean annual precipitation:* 10 to 16 inches  
*Mean annual air temperature:* 60 to 64 degrees F  
*Frost-free period:* 180 to 220 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Simona and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Simona****Setting**

*Landform:* Plains, alluvial fans  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium and/or eolian sands

**Typical profile**

*H1 - 0 to 6 inches:* sandy loam  
*H2 - 6 to 20 inches:* fine sandy loam  
*H3 - 20 to 24 inches:* indurated

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 7 to 24 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Very low (about 2.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 4s  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* R070BD002NM - Shallow Sandy  
*Hydric soil rating:* No

Custom Soil Resource Report

**Minor Components**

**Unnamed soils**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

**Playa**

*Percent of map unit:* 1 percent

*Landform:* Flood-plain playas

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Convex

*Across-slope shape:* Convex, linear

*Ecological site:* R070BC017NM - Bottomland

*Hydric soil rating:* Yes

## References

---

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

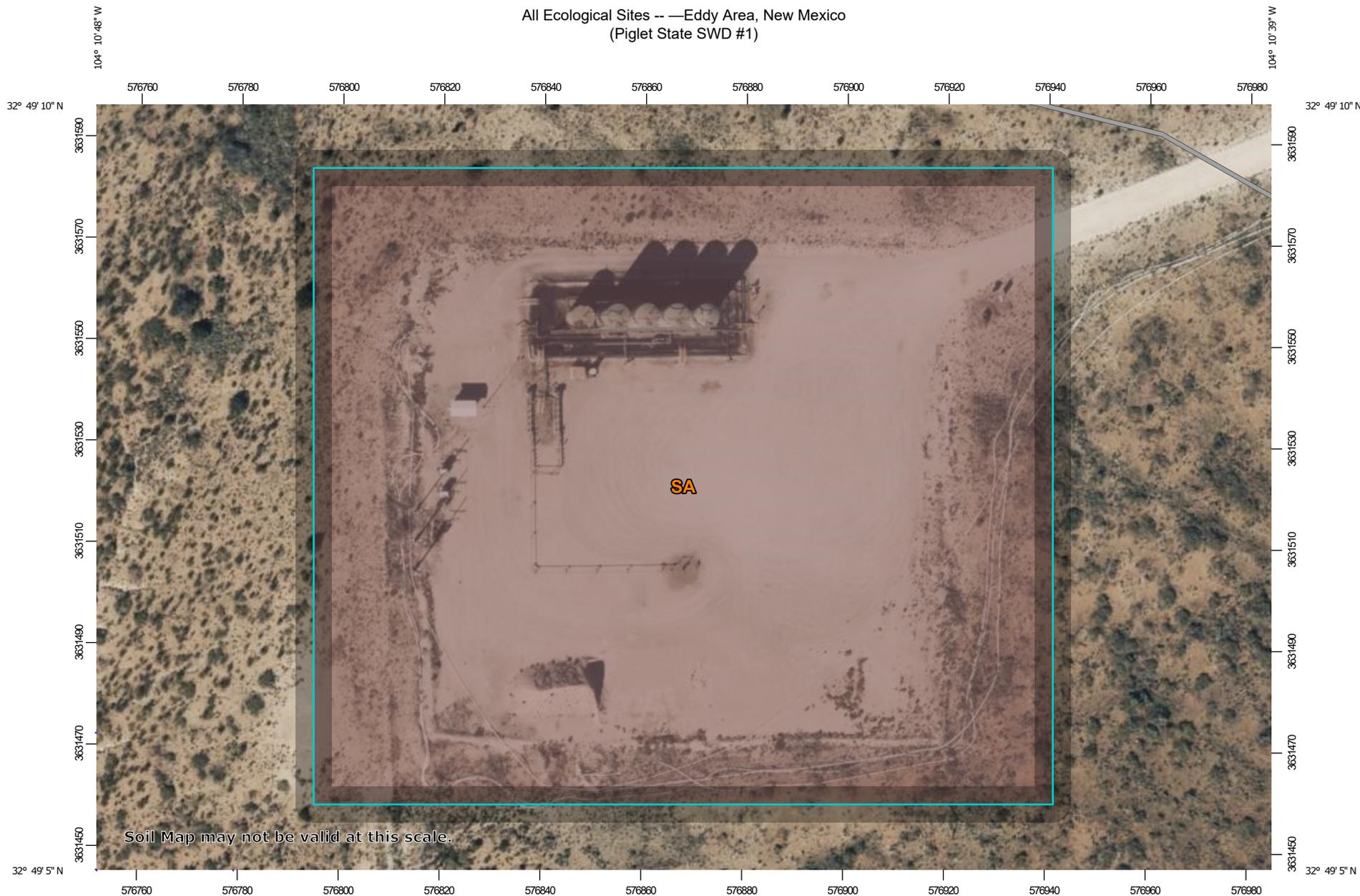
Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

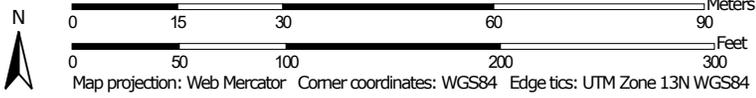
United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

All Ecological Sites -- Eddy Area, New Mexico  
(Piglet State SWD #1)



Soil Map may not be valid at this scale.

Map Scale: 1:1,070 if printed on A landscape (11" x 8.5") sheet.



All Ecological Sites -- Eddy Area, New Mexico  
(Piglet State SWD #1)

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

 R070BD002NM  
 Not rated or not available

**Soil Rating Lines**

 R070BD002NM  
 Not rated or not available

**Soil Rating Points**

 R070BD002NM  
 Not rated or not available

**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 19, Sep 7, 2023

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

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

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.

## All Ecological Sites —

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
SA	Simona sandy loam, 0 to 3 percent slopes	Simona (95%)	R070BD002NM — Shallow Sandy	4.6	100.0%
		Unnamed soils (4%)			
		Playa (1%)	R070BC017NM — Bottomland		
<b>Totals for Area of Interest</b>				<b>4.6</b>	<b>100.0%</b>

## Ecological site R070BD002NM Shallow Sandy

Accessed: 10/03/2023

### 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	<b>Sandy</b> Sandy sites often occur in association or in a complex with Shallow Sandy Sites.
-------------	--------------------------------------------------------------------------------------------------

### Similar sites

R070BD004NM	<b>Sandy</b> Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.
-------------	---------------------------------------------------------------------------------------------------------------------------

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site occurs on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentary bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Plain (2) Fan piedmont (3) Alluvial fan
Elevation	2,842–4,500 ft
Slope	1–9%
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 from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

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 the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for 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 very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated calache layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

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

Characteristic soils are:

Simona

Jerag

**Table 4. Representative soil features**

Surface texture	(1) Fine sandy loam (2) Loamy fine sand (3) Gravelly fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately slow to moderate

Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

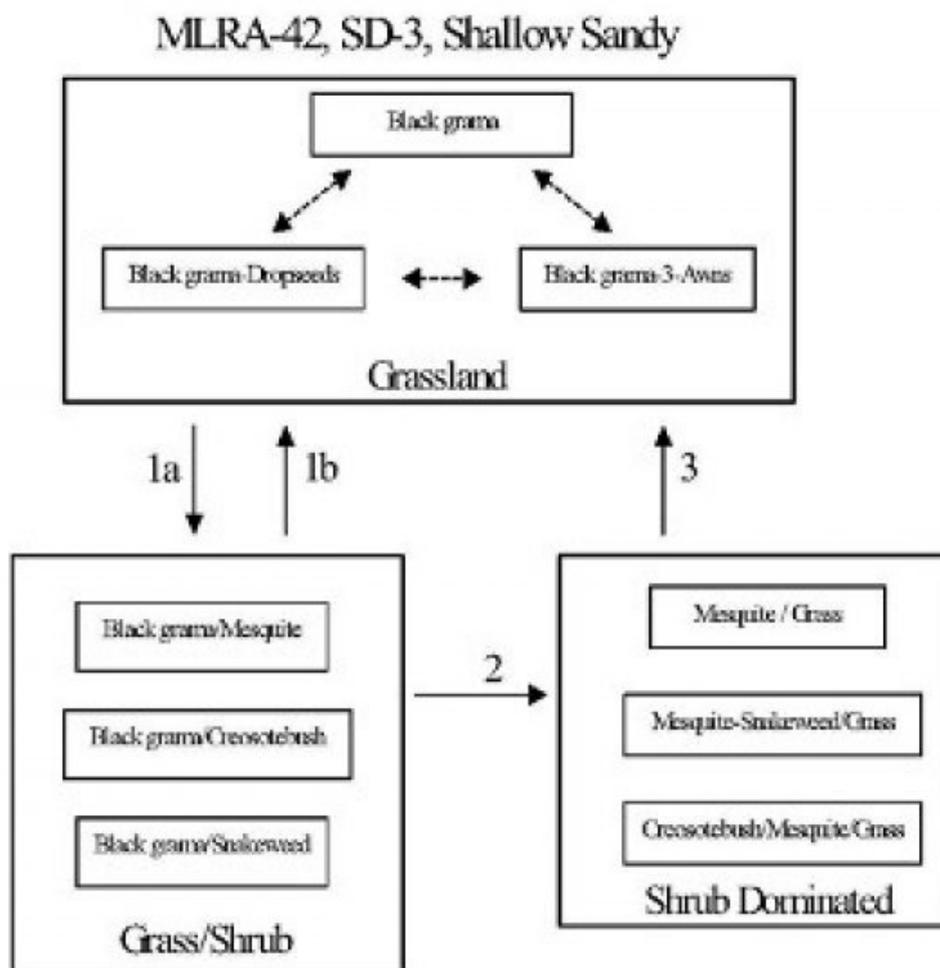
## Ecological dynamics

### Overview

The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

## State and transition model

**Plant Communities and Transitional Pathways (diagram)**



1a. Seed dispersal, drought, overgrazing, fire suppression.

1b. Prescribed fire, brush control, prescribed grazing.

2. Persistent loss of grass cover, resource competition, increased winter precipitation.

3. Brush control, range seeding, prescribed grazing.

**State 1  
Historic Climax Plant Community**

**Community 1.1  
Historic Climax Plant Community**

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf

happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

**Table 5. Annual production by plant type**

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	474	652	830
Forb	78	107	136
Shrub/Vine	48	66	84
<b>Total</b>	<b>600</b>	<b>825</b>	<b>1050</b>

**Table 6. Ground cover**

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

**Figure 5. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - 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: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant

grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs. 1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

**State 3  
Shrub Dominated**

**Community 3.1  
Shrub Dominated**

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

**Additional community tables**

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1	<b>Warm Season</b>			413–495	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	413–495	–
2	<b>Warm Season</b>			41–83	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	41–83	–
3	<b>Warm Season</b>			41–83	

	blue grama	BOGR2	<i>Bouteloua gracilis</i>	41-83	-
4	<b>Warm Season</b>			25-41	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	25-41	-
5	<b>Warm Season</b>			41-83	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	41-83	-
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	41-83	-
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	41-83	-
6	<b>Warm Season</b>			17-41	
	threeawn	ARIST	<i>Aristida</i>	17-41	-
7	<b>Warm Season</b>			41-83	
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	41-83	-
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	41-83	-
8	<b>Warm Season</b>			41-83	
	mat sandbur	CELO3	<i>Cenchrus longispinus</i>	41-83	-
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	41-83	-
9	<b>Other Perennial Grasses</b>			25-41	
	Grass, perennial	2GP	<i>Grass, perennial</i>	25-41	-
<b>Shrub/Vine</b>					
10	<b>Shrub</b>			8-25	
	javelina bush	COER5	<i>Condalia ericoides</i>	8-25	-
11	<b>Shrub</b>			8-25	
	yucca	YUCCA	<i>Yucca</i>	8-25	-
12	<b>Shrub</b>			8-25	
	jointfir	EPHED	<i>Ephedra</i>	8-25	-
	littleleaf ratany	KRER	<i>Krameria erecta</i>	8-25	-
13	<b>Shrub</b>			8-25	
	featherplume	DAFO	<i>Dalea formosa</i>	8-25	-
14	<b>Shrub</b>			8-25	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	8-25	-
15	<b>Other Shrubs</b>			25-41	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	25-41	-
<b>Forb</b>					
16	<b>Forb</b>			17-41	
	leatherweed	CRPOP	<i>Croton pottsii var. pottsii</i>	17-41	-
	Goodding's tansyaster	MAPIG2	<i>Machaeranthera pinnatifida ssp. gooddingii var. gooddingii</i>	17-41	-
17	<b>Forb</b>			17-41	
	woolly groundsel	PACA15	<i>Packera cana</i>	17-41	-
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus var. flaccidus</i>	17-41	-
18	<b>Forb</b>			8-25	
	whitest evening primrose	OEAL	<i>Oenothera albicaulis</i>	8-25	-
19	<b>Other Forbs</b>			8-25	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	8-25	-

## **Animal community**

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

## **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  
Jarag D  
Simona D

## **Recreational uses**

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

## **Wood products**

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

## **Other products**

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

## **Other information**

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month  
Similarity Index Ac/AUM  
100 - 76 2.5 – 3.5  
75 – 51 3.2 – 4.6  
50 – 26 4.5 – 7.5  
25 – 0 7.6 +

## **Inventory data references**

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

**Other references**

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.
2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.
3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.
4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.
5. Tiedemann, A. R. and J. O. Klemmedson. 1977. Effect of mesquite trees on vegetation and soils in the desert grassland. J. Range Manage. 30: 361-367.
6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: <http://www.fs.fed.us/database/feis/> [accessed 2/10/03].
7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQI/range.html>
8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQI/range.html>

**Contributors**

David Trujillo  
 Don Sylvester

**Rangeland health reference sheet**

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

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

## Indicators

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

Dominant:

Sub-dominant:

Other:

Additional:

---

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

---

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

---

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

---

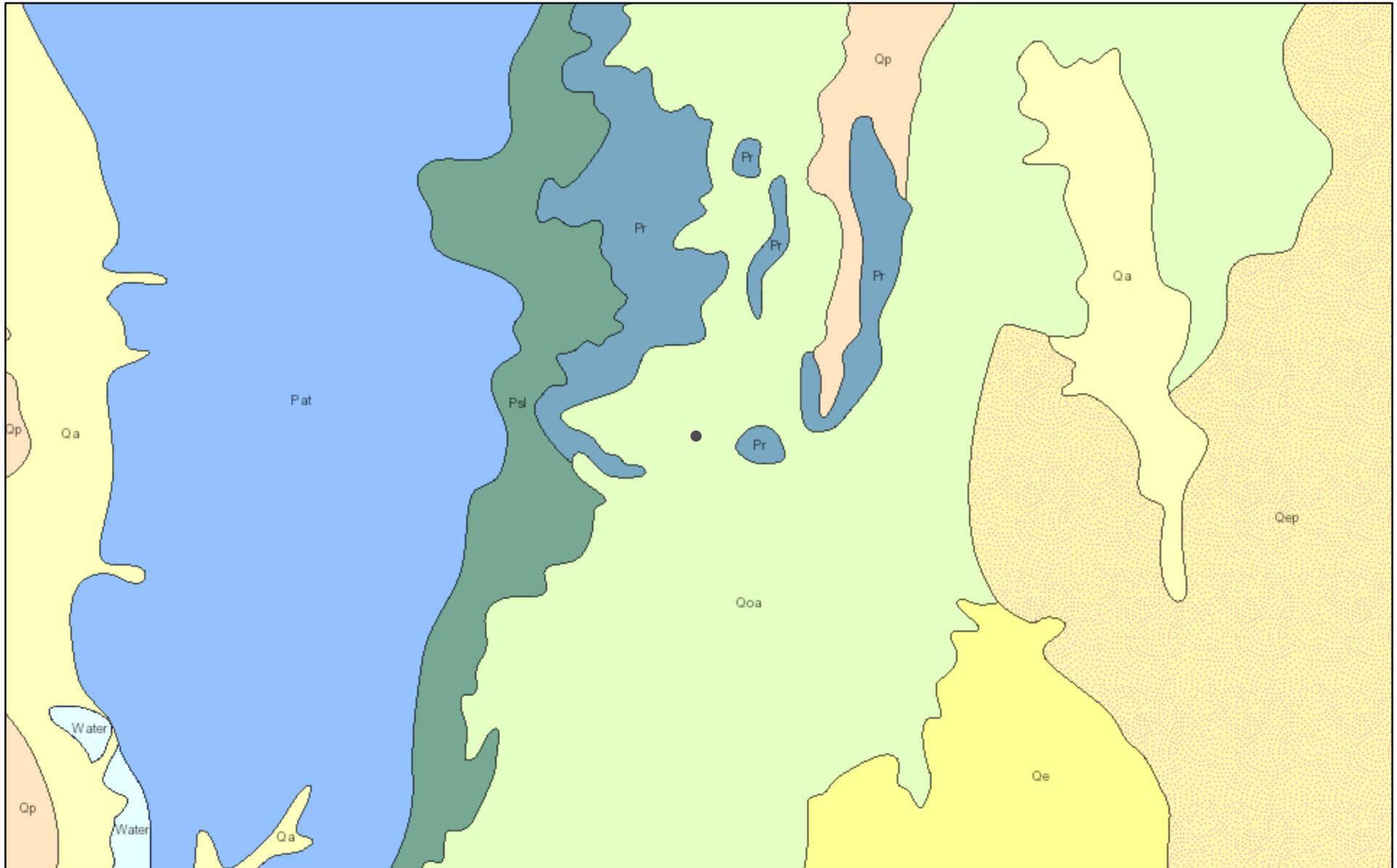
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management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

---

17. **Perennial plant reproductive capability:**

---

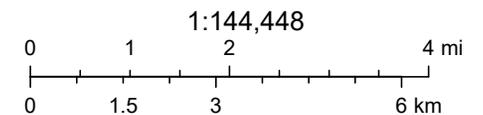
# Piglet State SWD #1 Geology



10/3/2023, 4:14:45 PM

### Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perennial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)



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

ArcGIS Web AppBuilder

## **APPENDIX C – Daily Field Reports**



# Daily Site Visit Report

Client:	<u>Silverback Exploration</u>	Inspection Date:	<u>10/16/2023</u>
Site Location Name:	<u>Piglet State SWD #1 Battery</u>	Report Run Date:	<u>10/16/2023 10:18 PM</u>
Client Contact Name:	<u>Mark Ritchie</u>	API #:	<u></u>
Client Contact Phone #:	<u>713-553-8320</u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

## Summary of Times

Arrived at Site	<u>10/16/2023 7:55 AM</u>
Departed Site	<u>10/16/2023 2:00 PM</u>

## Field Notes

- 8:11** Arrived at location and filled out safety paperwork. On site to continue site characterization/delineation. Will start to focus on middle sample points and getting vertical delineation.
- 13:40** Collected BH23-10,11,12,13,& 14 @ depths of 0ft and 1ft. Hit refusal at 1ft for all boreholes except for BH23-11. This borehole was excavated down to 2ft. Field screened all samples for chlorides and TPH. Placed all samples into glass jars and will send in for laboratory analysis. Added all sample points to Field Maps and DSS.

## Next Steps & Recommendations

1



# Daily Site Visit Report

## Site Photos

Viewing Direction: East



Descriptive Photo - 1  
Viewing Direction: East  
Desc: BH23-10 @ 0-1ft  
Created: 10/16/2023 1:28:15 PM  
Lat:32.818245, Long:-104.178289

BH23-10 @ 0-1ft

Viewing Direction: North



Descriptive Photo - 2  
Viewing Direction: North  
Desc: BH23-12 @ 0-1ft  
Created: 10/16/2023 1:27:32 PM  
Lat:32.818005, Long:-104.178005

BH23-12 @ 0-1ft

Viewing Direction: West



Descriptive Photo - 3  
Viewing Direction: West  
Desc: BH23-13 @ 0-1ft  
Created: 10/16/2023 1:28:20 PM  
Lat:32.818245, Long:-104.178289

BH23-13 @ 0-1ft

Viewing Direction: West

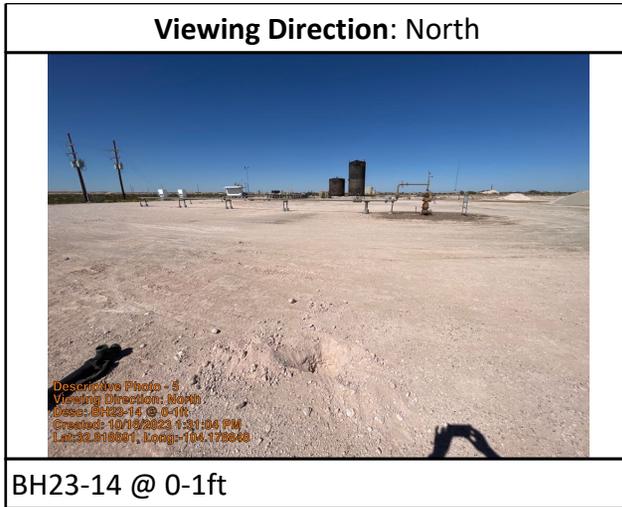


Descriptive Photo - 4  
Viewing Direction: West  
Desc: BH23-11 @ 0-2ft  
Created: 10/16/2023 1:28:23 PM  
Lat:32.818123, Long:-104.178488

BH23-11 @ 0-2ft



# Daily Site Visit Report



BH23-14 @ 0-1ft



Overview of site



Overview of site



Overview of site

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Fernando Rodriguez

**Signature:**

  
Signature



# Daily Site Visit Report

Client:	<u>Silverback Exploration</u>	Inspection Date:	<u>11/8/2023</u>
Site Location Name:	<u>Piglet State SWD #1 Battery</u>	Report Run Date:	<u>11/8/2023 9:18 PM</u>
Client Contact Name:	<u>Mark Ritchie</u>	API #:	<u></u>
Client Contact Phone #:	<u>713-553-8320</u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

## Summary of Times

Arrived at Site	<u>11/8/2023 7:01 AM</u>
Departed Site	<u>11/8/2023 2:00 PM</u>

## Field Notes

**7:02** Arrived at location and filled out safety paperwork. On site to continue confirmation sampling from the east side of the pad.

**13:54** Collected last set of confirmation samples for the location and labeled: WS and BS23- 49-68. Field screened samples for chlorides and TPH. Placed soil samples into glass jars and will send in for laboratory analysis. Added sample points to Field Maps and DSS.

## Next Steps & Recommendations

1



# Daily Site Visit Report

## Site Photos

Viewing Direction: Southwest



Descriptive Photo - 1  
Viewing Direction: Southwest  
Desc: Overview of sampling area  
Created: 11/8/2023 12:11:43 PM  
Lat:32.818663, Long:-104.176365

Overview of sampling area

Viewing Direction: Southeast



Descriptive Photo - 2  
Viewing Direction: Southeast  
Desc: Overview of sampling area  
Created: 11/8/2023 12:12:41 PM  
Lat:32.819443, Long:-104.176365

Overview of sampling area

Viewing Direction: Northeast



Descriptive Photo - 3  
Viewing Direction: Northeast  
Desc: Overview of sampling area  
Created: 11/8/2023 12:13:38 PM  
Lat:32.818663, Long:-104.176370

Overview of sampling area

Viewing Direction: Northwest



Descriptive Photo - 4  
Viewing Direction: Northwest  
Desc: Overview of sampling area  
Created: 11/8/2023 12:14:22 PM  
Lat:32.818660, Long:-104.176365

Overview of sampling area

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Fernando Rodriguez

**Signature:**   
Signature



# Daily Site Visit Report

Client	Silverback Exploration	Inspection Date	5/23/2024
Site Location Name	Piglet State SWD #1	API #	
Client Contact Name	Mark Ritchie	Project Owner	
Client Contact Phone #	713-553-8320	Project Manager	
Project Reference #			
Unique Project ID			

### Summary of Times

Arrived at Site	5/23/2024 8:30 AM
Departed Site	5/23/2024 3:20 PM

### Field Notes

**10:38** Arrived at location and filled out safety paperwork. At location to collect confirmatory samples from areas of the excavation.

**13:18** Collected a total of 16 confirmation samples. Field screened these samples for chlorides. Placed samples into glass jars and will send in for laboratory analysis. Added sample points to Field Maps and DSS.

### Next Steps & Recommendations

1

# Daily Site Visit Report



## Site Photos

**Viewing Direction: South**



Overview of sampling area (BH24-01 @ 0-2ft)

**Viewing Direction: South**



Overview of sampling area (BH24-02 @ 0-2ft)

**Viewing Direction: East**



Overview of sampling area (BH24-03 @ 0-2ft)

**Viewing Direction: West**



Overview of sampling area (BH24-04 @ 0-2ft)

# Daily Site Visit Report



## Site Photos

**Viewing Direction: East**



Overview of sampling area (BH24-05 @ 0-2ft)

**Viewing Direction: West**



Overview of sampling area (BH24-06 @ 0-2ft)

**Viewing Direction: North**



Overview of sampling area (BH24-07 @ 0-2ft)

**Viewing Direction: Northwest**



Overview of sampling area (BH24-08 @ 0-2ft)

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Fernando Rodriguez

**Signature:**   
Signature

## **APPENDIX D – Notifications**

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

**Shelly Wells** \* Environmental Specialist-Advanced  
Environmental Bureau  
EMNRD-Oil Conservation Division  
1220 S. St. Francis Drive | Santa Fe, NM 87505  
(505)469-7520 | [Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)  
<http://www.emnrd.state.nm.us/OCD/>

---

**From:** Dhugal Hanton <[vertexresourcegroupusa@gmail.com](mailto:vertexresourcegroupusa@gmail.com)>  
**Sent:** Tuesday, October 31, 2023 12:24 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>; [eco@slo.state.nm.us](mailto:eco@slo.state.nm.us)  
**Cc:** [cdixon@vertex.ca](mailto:cdixon@vertex.ca); [mitchie@silverbackexp.com](mailto:mitchie@silverbackexp.com)  
**Subject:** [EXTERNAL] 48-Hour Notification - Piglet State SWD #1

**CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.**

All,

Please accept this email as notification that Vertex Resource Services has scheduled a sampling event to be conducted at the following release.

**Piglet State SWD #1, nAPP2327744458**

Confirmation sampling is scheduled to begin Thursday, November 2, 2023, at approximately 12:30 p.m. and will continue through Wednesday, November 8, 2023. If you have any questions regarding this notification, please contact 575-361-4509.

Thanks,

**Fernando Rodriguez** B.Sc  
Intermediate Biologist

Vertex Resource Services Inc.  
3101 Boyd Drive,  
Carlsbad, NM 88220

**C 575.361.4509**

## **APPENDIX E – Laboratory Data Reports and Chain of Custody Forms**



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

November 06, 2023

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

RE: Piglet State SWD 1

OrderNo.: 2310833

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 29 sample(s) on 10/18/2023 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-01 0ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/13/2023 10:00:00 AM

**Lab ID:** 2310833-001

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/21/2023 1:53:23 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 1:53:23 AM
Surr: DNOP	70.4	69-147		%Rec	1	10/21/2023 1:53:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/19/2023 6:35:32 PM
Surr: BFB	90.6	15-244		%Rec	1	10/19/2023 6:35:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 6:35:32 PM
Toluene	ND	0.047		mg/Kg	1	10/19/2023 6:35:32 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/19/2023 6:35:32 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/19/2023 6:35:32 PM
Surr: 4-Bromofluorobenzene	97.8	39.1-146		%Rec	1	10/19/2023 6:35:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/20/2023 10:57:24 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-01 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:05:00 AM

Lab ID: 2310833-002

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/23/2023 7:21:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/23/2023 7:21:10 PM
Surr: DNOP	84.5	69-147		%Rec	1	10/23/2023 7:21:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/19/2023 6:59:03 PM
Surr: BFB	91.0	15-244		%Rec	1	10/19/2023 6:59:03 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	10/19/2023 6:59:03 PM
Toluene	ND	0.050		mg/Kg	1	10/19/2023 6:59:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/19/2023 6:59:03 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/19/2023 6:59:03 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	10/19/2023 6:59:03 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/20/2023 11:09:49 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-02 0ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:10:00 AM

Lab ID: 2310833-003

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/21/2023 2:15:22 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/21/2023 2:15:22 AM
Surr: DNOP	78.2	69-147		%Rec	1	10/21/2023 2:15:22 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 7:22:17 PM
Surr: BFB	91.7	15-244		%Rec	1	10/19/2023 7:22:17 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 7:22:17 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 7:22:17 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 7:22:17 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 7:22:17 PM
Surr: 4-Bromofluorobenzene	98.7	39.1-146		%Rec	1	10/19/2023 7:22:17 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/20/2023 11:22:13 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-02 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:15:00 AM

Lab ID: 2310833-004

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/21/2023 2:26:19 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 2:26:19 AM
Surr: DNOP	71.0	69-147		%Rec	1	10/21/2023 2:26:19 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/19/2023 7:45:42 PM
Surr: BFB	92.1	15-244		%Rec	1	10/19/2023 7:45:42 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	10/19/2023 7:45:42 PM
Toluene	ND	0.049		mg/Kg	1	10/19/2023 7:45:42 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/19/2023 7:45:42 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/19/2023 7:45:42 PM
Surr: 4-Bromofluorobenzene	99.7	39.1-146		%Rec	1	10/19/2023 7:45:42 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/20/2023 11:59:27 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-03 0ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:20:00 AM

Lab ID: 2310833-005

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/21/2023 2:37:14 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 2:37:14 AM
Surr: DNOP	90.9	69-147		%Rec	1	10/21/2023 2:37:14 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:09:12 PM
Surr: BFB	90.9	15-244		%Rec	1	10/19/2023 8:09:12 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:09:12 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:09:12 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:09:12 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 8:09:12 PM
Surr: 4-Bromofluorobenzene	99.1	39.1-146		%Rec	1	10/19/2023 8:09:12 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 12:11:52 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-03 2ft

Project: Piglet State SWD 1

Collection Date: 10/13/2023 10:25:00 AM

Lab ID: 2310833-006

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/21/2023 2:48:09 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/21/2023 2:48:09 AM
Surr: DNOP	83.4	69-147		%Rec	1	10/21/2023 2:48:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:32:48 PM
Surr: BFB	91.3	15-244		%Rec	1	10/19/2023 8:32:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:32:48 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:32:48 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:32:48 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/19/2023 8:32:48 PM
Surr: 4-Bromofluorobenzene	98.9	39.1-146		%Rec	1	10/19/2023 8:32:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 12:24:17 AM

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

<b>Qualifiers:</b>	* 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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-04 0ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/12/2023 10:00:00 AM

**Lab ID:** 2310833-007

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/21/2023 2:59:02 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/21/2023 2:59:02 AM
Surr: DNOP	82.0	69-147		%Rec	1	10/21/2023 2:59:02 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 8:56:24 PM
Surr: BFB	91.6	15-244		%Rec	1	10/19/2023 8:56:24 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 8:56:24 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 8:56:24 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 8:56:24 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/19/2023 8:56:24 PM
Surr: 4-Bromofluorobenzene	99.8	39.1-146		%Rec	1	10/19/2023 8:56:24 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 12:36:41 AM

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

<b>Qualifiers:</b>	*	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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-04 2ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/12/2023 10:05:00 AM

**Lab ID:** 2310833-008

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/21/2023 3:09:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/21/2023 3:09:54 AM
Surr: DNOP	77.5	69-147		%Rec	1	10/21/2023 3:09:54 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 9:20:02 PM
Surr: BFB	89.2	15-244		%Rec	1	10/19/2023 9:20:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 9:20:02 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 9:20:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 9:20:02 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 9:20:02 PM
Surr: 4-Bromofluorobenzene	97.4	39.1-146		%Rec	1	10/19/2023 9:20:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	79	60		mg/Kg	20	10/21/2023 12:49:06 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-05 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:10:00 AM

Lab ID: 2310833-009

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/21/2023 3:20:45 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/21/2023 3:20:45 AM
Surr: DNOP	76.7	69-147		%Rec	1	10/21/2023 3:20:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 9:43:30 PM
Surr: BFB	93.5	15-244		%Rec	1	10/19/2023 9:43:30 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/19/2023 9:43:30 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 9:43:30 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 9:43:30 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/19/2023 9:43:30 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/19/2023 9:43:30 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 1:01:31 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-05 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:15:00 AM

Lab ID: 2310833-010

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/23/2023 7:45:39 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/23/2023 7:45:39 PM
Surr: DNOP	88.1	69-147		%Rec	1	10/23/2023 7:45:39 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/19/2023 10:06:50 PM
Surr: BFB	93.9	15-244		%Rec	1	10/19/2023 10:06:50 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	10/19/2023 10:06:50 PM
Toluene	ND	0.048		mg/Kg	1	10/19/2023 10:06:50 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/19/2023 10:06:50 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/19/2023 10:06:50 PM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	10/19/2023 10:06:50 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JTT
Chloride	ND	60		mg/Kg	20	10/21/2023 1:13:55 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-06 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:20:00 AM

Lab ID: 2310833-011

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 2:09:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 2:09:38 PM
Surr: DNOP	96.1	69-147		%Rec	1	10/20/2023 2:09:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/21/2023 5:33:22 AM
Surr: BFB	96.2	15-244		%Rec	1	10/21/2023 5:33:22 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/21/2023 5:33:22 AM
Toluene	ND	0.048		mg/Kg	1	10/21/2023 5:33:22 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/21/2023 5:33:22 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/21/2023 5:33:22 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/21/2023 5:33:22 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 1:26:20 AM

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

<b>Qualifiers:</b>	*	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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-06 2ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/12/2023 10:25:00 AM

**Lab ID:** 2310833-012

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 2:42:10 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 2:42:10 PM
Surr: DNOP	89.7	69-147		%Rec	1	10/20/2023 2:42:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/21/2023 5:56:59 AM
Surr: BFB	97.2	15-244		%Rec	1	10/21/2023 5:56:59 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/21/2023 5:56:59 AM
Toluene	ND	0.048		mg/Kg	1	10/21/2023 5:56:59 AM
Ethylbenzene	ND	0.048		mg/Kg	1	10/21/2023 5:56:59 AM
Xylenes, Total	ND	0.095		mg/Kg	1	10/21/2023 5:56:59 AM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/21/2023 5:56:59 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 1:38:45 AM

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

<b>Qualifiers:</b>	* 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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-07 0ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/12/2023 10:30:00 AM

**Lab ID:** 2310833-013

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/23/2023 3:21:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/23/2023 3:21:08 PM
Surr: DNOP	103	69-147		%Rec	1	10/23/2023 3:21:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/21/2023 6:20:29 AM
Surr: BFB	96.1	15-244		%Rec	1	10/21/2023 6:20:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	10/21/2023 6:20:29 AM
Toluene	ND	0.046		mg/Kg	1	10/21/2023 6:20:29 AM
Ethylbenzene	ND	0.046		mg/Kg	1	10/21/2023 6:20:29 AM
Xylenes, Total	ND	0.092		mg/Kg	1	10/21/2023 6:20:29 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	10/21/2023 6:20:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	290	60		mg/Kg	20	10/21/2023 1:51:09 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-07 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:35:00 AM

Lab ID: 2310833-014

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/20/2023 10:23:31 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 10:23:31 AM
Surr: DNOP	88.8	69-147		%Rec	1	10/20/2023 10:23:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 11:24:00 AM
Surr: BFB	98.3	15-244		%Rec	1	10/20/2023 11:24:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	10/20/2023 11:24:00 AM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 11:24:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 11:24:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 11:24:00 AM
Surr: 4-Bromofluorobenzene	88.3	39.1-146		%Rec	1	10/20/2023 11:24:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	280	60		mg/Kg	20	10/21/2023 2:28:23 AM

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

<b>Qualifiers:</b>	* 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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-08 0ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/12/2023 10:40:00 AM

**Lab ID:** 2310833-015

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/20/2023 10:34:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/20/2023 10:34:08 AM
Surr: DNOP	79.2	69-147		%Rec	1	10/20/2023 10:34:08 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 12:29:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 12:29:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	10/20/2023 12:29:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 12:29:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 12:29:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/20/2023 12:29:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/20/2023 12:29:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	10/21/2023 2:40:48 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-08 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:45:00 AM

Lab ID: 2310833-016

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/23/2023 4:32:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 4:32:44 PM
Surr: DNOP	107	69-147		%Rec	1	10/23/2023 4:32:44 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 1:34:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 1:34:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 1:34:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 1:34:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 1:34:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/20/2023 1:34:00 PM
Surr: 4-Bromofluorobenzene	87.6	39.1-146		%Rec	1	10/20/2023 1:34:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	ND	60		mg/Kg	20	10/22/2023 2:28:39 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-09 0ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:50:00 AM

Lab ID: 2310833-017

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 10:55:29 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 10:55:29 AM
Surr: DNOP	111	69-147		%Rec	1	10/20/2023 10:55:29 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 1:56:00 PM
Surr: BFB	105	15-244		%Rec	1	10/20/2023 1:56:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 1:56:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 1:56:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 1:56:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 1:56:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	10/20/2023 1:56:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	ND	60		mg/Kg	20	10/22/2023 2:41:03 AM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-09 2ft

Project: Piglet State SWD 1

Collection Date: 10/12/2023 10:55:00 AM

Lab ID: 2310833-018

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/23/2023 4:56:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 4:56:31 PM
Surr: DNOP	112	69-147		%Rec	1	10/23/2023 4:56:31 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 2:17:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 2:17:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 2:17:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 2:17:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 2:17:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 2:17:00 PM
Surr: 4-Bromofluorobenzene	86.2	39.1-146		%Rec	1	10/20/2023 2:17:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: KCB
Chloride	81	60		mg/Kg	20	10/23/2023 1:04:32 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-10 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:00:00 AM

Lab ID: 2310833-019

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 11:27:41 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 11:27:41 AM
Surr: DNOP	76.0	69-147		%Rec	1	10/20/2023 11:27:41 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 2:39:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 2:39:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 2:39:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 2:39:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 2:39:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 2:39:00 PM
Surr: 4-Bromofluorobenzene	90.7	39.1-146		%Rec	1	10/20/2023 2:39:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	540	60		mg/Kg	20	10/23/2023 1:41:45 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-10 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:05:00 AM

Lab ID: 2310833-020

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	10/23/2023 5:20:24 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	10/23/2023 5:20:24 PM
Surr: DNOP	109	69-147		%Rec	1	10/23/2023 5:20:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 3:01:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 3:01:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:01:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 3:01:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 3:01:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	10/20/2023 3:01:00 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	10/20/2023 3:01:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: KCB
Chloride	ND	60		mg/Kg	20	10/23/2023 2:18:59 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:10:00 AM

Lab ID: 2310833-021

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	600	96		mg/Kg	10	10/20/2023 10:02:19 AM
Motor Oil Range Organics (MRO)	500	480		mg/Kg	10	10/20/2023 10:02:19 AM
Surr: DNOP	0	69-147	S	%Rec	10	10/20/2023 10:02:19 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/20/2023 3:22:00 PM
Surr: BFB	97.2	15-244		%Rec	1	10/20/2023 3:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:22:00 PM
Toluene	ND	0.047		mg/Kg	1	10/20/2023 3:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	10/20/2023 3:22:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/20/2023 3:22:00 PM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	10/20/2023 3:22:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	18000	1500		mg/Kg	500	10/24/2023 1:31:32 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:15:00 AM

Lab ID: 2310833-022

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/20/2023 11:49:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 11:49:07 AM
Surr: DNOP	97.0	69-147		%Rec	1	10/20/2023 11:49:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/20/2023 3:44:00 PM
Surr: BFB	98.6	15-244		%Rec	1	10/20/2023 3:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	10/20/2023 3:44:00 PM
Toluene	ND	0.048		mg/Kg	1	10/20/2023 3:44:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/20/2023 3:44:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/20/2023 3:44:00 PM
Surr: 4-Bromofluorobenzene	87.7	39.1-146		%Rec	1	10/20/2023 3:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	ND	60		mg/Kg	20	10/23/2023 3:08:38 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-11 2ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:20:00 AM

Lab ID: 2310833-023

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/20/2023 11:59:52 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/20/2023 11:59:52 AM
Surr: DNOP	95.4	69-147		%Rec	1	10/20/2023 11:59:52 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 4:06:00 PM
Surr: BFB	104	15-244		%Rec	1	10/20/2023 4:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 4:06:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 4:06:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 4:06:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 4:06:00 PM
Surr: 4-Bromofluorobenzene	89.5	39.1-146		%Rec	1	10/20/2023 4:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	ND	60		mg/Kg	20	10/23/2023 3:21:03 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:25:00 AM

Lab ID: 2310833-024

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	10/20/2023 9:41:06 AM
Motor Oil Range Organics (MRO)	100	47		mg/Kg	1	10/20/2023 9:41:06 AM
Surr: DNOP	72.2	69-147		%Rec	1	10/20/2023 9:41:06 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 4:49:00 PM
Surr: BFB	98.2	15-244		%Rec	1	10/20/2023 4:49:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	10/20/2023 4:49:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 4:49:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 4:49:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/20/2023 4:49:00 PM
Surr: 4-Bromofluorobenzene	86.5	39.1-146		%Rec	1	10/20/2023 4:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	3400	150		mg/Kg	50	10/24/2023 1:56:13 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-12 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:30:00 AM

Lab ID: 2310833-025

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	12	8.4		mg/Kg	1	10/23/2023 5:44:14 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	10/23/2023 5:44:14 PM
Surr: DNOP	108	69-147		%Rec	1	10/23/2023 5:44:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 5:11:00 PM
Surr: BFB	99.9	15-244		%Rec	1	10/20/2023 5:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	10/20/2023 5:11:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 5:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 5:11:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/20/2023 5:11:00 PM
Surr: 4-Bromofluorobenzene	87.5	39.1-146		%Rec	1	10/20/2023 5:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: KCB
Chloride	160	60		mg/Kg	20	10/23/2023 3:45:52 PM

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

<b>Qualifiers:</b>	* 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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-13 0ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/16/2023 9:35:00 AM

**Lab ID:** 2310833-026

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	240	9.7		mg/Kg	1	10/21/2023 4:03:44 AM
Motor Oil Range Organics (MRO)	260	49		mg/Kg	1	10/21/2023 4:03:44 AM
Surr: DNOP	101	69-147		%Rec	1	10/21/2023 4:03:44 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/20/2023 5:32:00 PM
Surr: BFB	96.8	15-244		%Rec	1	10/20/2023 5:32:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 5:32:00 PM
Toluene	ND	0.049		mg/Kg	1	10/20/2023 5:32:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/20/2023 5:32:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 5:32:00 PM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	10/20/2023 5:32:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	16000	1500		mg/Kg	500	10/24/2023 1:43:53 PM

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

<b>Qualifiers:</b>	* 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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-13 1ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:40:00 AM

Lab ID: 2310833-027

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/20/2023 12:21:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/20/2023 12:21:19 PM
Surr: DNOP	102	69-147		%Rec	1	10/20/2023 12:21:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 5:54:00 PM
Surr: BFB	101	15-244		%Rec	1	10/20/2023 5:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 5:54:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 5:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 5:54:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/20/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	88.4	39.1-146		%Rec	1	10/20/2023 5:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	400	60		mg/Kg	20	10/23/2023 4:10:41 PM

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

<b>Qualifiers:</b>	*	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 2310833

Date Reported: 11/6/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-14 0ft

Project: Piglet State SWD 1

Collection Date: 10/16/2023 9:45:00 AM

Lab ID: 2310833-028

Matrix: SOIL

Received Date: 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/20/2023 12:32:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/20/2023 12:32:05 PM
Surr: DNOP	101	69-147		%Rec	1	10/20/2023 12:32:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 6:16:00 PM
Surr: BFB	104	15-244		%Rec	1	10/20/2023 6:16:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 6:16:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 6:16:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 6:16:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	10/20/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	89.3	39.1-146		%Rec	1	10/20/2023 6:16:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	4800	300		mg/Kg	100	10/24/2023 2:08:34 PM

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

<b>Qualifiers:</b>	* 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 **2310833**

Date Reported: **11/6/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-14 1ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/16/2023 9:50:00 AM

**Lab ID:** 2310833-029

**Matrix:** SOIL

**Received Date:** 10/18/2023 7:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/23/2023 6:08:11 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/23/2023 6:08:11 PM
Surr: DNOP	111	69-147		%Rec	1	10/23/2023 6:08:11 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/20/2023 6:38:00 PM
Surr: BFB	103	15-244		%Rec	1	10/20/2023 6:38:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	10/20/2023 6:38:00 PM
Toluene	ND	0.050		mg/Kg	1	10/20/2023 6:38:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/20/2023 6:38:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/20/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	10/20/2023 6:38:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	1900	60		mg/Kg	20	10/23/2023 4:35:30 PM

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

<b>Qualifiers:</b>	*	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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78279</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78279</b>		RunNo: <b>100629</b>							
Prep Date: <b>10/20/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689537</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78279</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78279</b>		RunNo: <b>100629</b>							
Prep Date: <b>10/20/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689538</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Sample ID: <b>MB-78284</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78284</b>		RunNo: <b>100650</b>							
Prep Date: <b>10/21/2023</b>	Analysis Date: <b>10/21/2023</b>		SeqNo: <b>3690958</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78284</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78284</b>		RunNo: <b>100650</b>							
Prep Date: <b>10/21/2023</b>	Analysis Date: <b>10/21/2023</b>		SeqNo: <b>3690959</b>		Units: <b>mg/Kg</b>					
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: <b>MB-78305</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78305</b>		RunNo: <b>100680</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>		SeqNo: <b>3691878</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78305</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78305</b>		RunNo: <b>100680</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>		SeqNo: <b>3691879</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.1	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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2310833-011AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH23-06 0ft</b>	Batch ID: <b>78254</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689289</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.9	49.36	0	115	54.2	135			
Surr: DNOP	4.7		4.936		95.6	69	147			

Sample ID: <b>2310833-011AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH23-06 0ft</b>	Batch ID: <b>78254</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689290</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.8	49.16	0	97.8	54.2	135	16.7	29.2	
Surr: DNOP	4.0		4.916		80.4	69	147	0	0	

Sample ID: <b>LCS-78243</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78243</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689324</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.3	61.9	130			
Surr: DNOP	4.5		5.000		89.7	69	147			

Sample ID: <b>LCS-78254</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78254</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689325</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	61.9	130			
Surr: DNOP	4.9		5.000		99.0	69	147			

Sample ID: <b>LCS-78263</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78263</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689326</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	61.9	130			
Surr: DNOP	4.9		5.000		97.9	69	147			

Sample ID: <b>MB-78243</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78243</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689328</b>	Units: <b>mg/Kg</b>							
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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78243</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78243</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689328</b>	Units: <b>mg/Kg</b>							
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	9.1		10.00		91.5	69	147			

Sample ID: <b>MB-78254</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78254</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689329</b>	Units: <b>mg/Kg</b>							
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	9.9		10.00		99.2	69	147			

Sample ID: <b>MB-78263</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78263</b>	RunNo: <b>100627</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689330</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		117	69	147			

Sample ID: <b>MB-78296</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78296</b>	RunNo: <b>100662</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>	SeqNo: <b>3691338</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	69	147			

Sample ID: <b>LCS-78296</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78296</b>	RunNo: <b>100662</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>	SeqNo: <b>3691339</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	50	10	50.00	0	101	61.9	130			
Surr: DNOP	4.8		5.000		96.8	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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2310833-013AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH23-07 0ft</b>	Batch ID: <b>78296</b>	RunNo: <b>100662</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>	SeqNo: <b>3691341</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	8.6	42.77	0	105	54.2	135			
Surr: DNOP	4.5		4.277		104	69	147			

Sample ID: <b>2310833-013AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH23-07 0ft</b>	Batch ID: <b>78296</b>	RunNo: <b>100662</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/23/2023</b>	SeqNo: <b>3691342</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.6	48.03	0	107	54.2	135	13.3	29.2	
Surr: DNOP	5.1		4.803		106	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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78237</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78237</b>		RunNo: <b>100590</b>							
Prep Date: <b>10/18/2023</b>	Analysis Date: <b>10/19/2023</b>		SeqNo: <b>3687197</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.6	70	130			
Surr: BFB	1900		1000		192	15	244			

Sample ID: <b>mb-78237</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78237</b>		RunNo: <b>100590</b>							
Prep Date: <b>10/18/2023</b>	Analysis Date: <b>10/19/2023</b>		SeqNo: <b>3687198</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.5	15	244			

Sample ID: <b>ics-78260</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689250</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	70	130			
Surr: BFB	2200		1000		218	15	244			

Sample ID: <b>mb-78260</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689251</b>		Units: <b>mg/Kg</b>					
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	15	244			

Sample ID: <b>2310833-014ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BH23-07 2ft</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689253</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	97.6	70	130			
Surr: BFB	2100		970.9		218	15	244			

Sample ID: <b>2310833-014amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BH23-07 2ft</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689254</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	97.6	70	130			
Surr: BFB	2100		970.9		218	15	244			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2310833-014amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH23-07 2ft</b>	Batch ID: <b>78260</b>	RunNo: <b>100625</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3689254</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	24.08	0	97.8	70	130	0.528	20	
Surr: BFB	2200		963.4		224	15	244	0	0	

Sample ID: <b>lcs-78252</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78252</b>	RunNo: <b>100615</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3690477</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.9	70	130			
Surr: BFB	1900		1000		194	15	244			

Sample ID: <b>mb-78252</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78252</b>	RunNo: <b>100615</b>								
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>	SeqNo: <b>3690478</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.9	15	244			

**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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78237</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78237</b>		RunNo: <b>100590</b>							
Prep Date: <b>10/18/2023</b>	Analysis Date: <b>10/19/2023</b>		SeqNo: <b>3687200</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.5	70	130			
Toluene	0.88	0.050	1.000	0	87.6	70	130			
Ethylbenzene	0.89	0.050	1.000	0	89.3	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.2	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: <b>mb-78237</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78237</b>		RunNo: <b>100590</b>							
Prep Date: <b>10/18/2023</b>	Analysis Date: <b>10/19/2023</b>		SeqNo: <b>3687201</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: <b>lcs-78260</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689264</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.9	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Ethylbenzene	0.90	0.050	1.000	0	90.4	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.4	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	39.1	146			

Sample ID: <b>mb-78260</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689265</b>		Units: <b>mg/Kg</b>					
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	0.92		1.000		91.7	39.1	146			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2310833

07-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2310833-015ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BH23-08 0ft</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689268</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.024	0.9560	0	87.0	70	130			
Toluene	0.83	0.048	0.9560	0	86.9	70	130			
Ethylbenzene	0.85	0.048	0.9560	0	88.9	70	130			
Xylenes, Total	2.5	0.096	2.868	0	88.5	70	130			
Surr: 4-Bromofluorobenzene	0.84		0.9560		88.0	39.1	146			

Sample ID: <b>2310833-015amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BH23-08 0ft</b>	Batch ID: <b>78260</b>		RunNo: <b>100625</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3689269</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9569	0	88.6	70	130	1.93	20	
Toluene	0.85	0.048	0.9569	0	89.1	70	130	2.64	20	
Ethylbenzene	0.88	0.048	0.9569	0	91.8	70	130	3.26	20	
Xylenes, Total	2.6	0.096	2.871	0	91.4	70	130	3.29	20	
Surr: 4-Bromofluorobenzene	0.85		0.9569		88.7	39.1	146	0	0	

Sample ID: <b>LCS-78252</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78252</b>		RunNo: <b>100615</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3690508</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.9	70	130			
Toluene	1.0	0.050	1.000	0	99.9	70	130			
Ethylbenzene	1.0	0.050	1.000	0	100	70	130			
Xylenes, Total	3.0	0.10	3.000	0	101	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.0	39.1	146			

Sample ID: <b>mb-78252</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78252</b>		RunNo: <b>100615</b>							
Prep Date: <b>10/19/2023</b>	Analysis Date: <b>10/20/2023</b>		SeqNo: <b>3690509</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		97.6	39.1	146			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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: 2310833 RcptNo: 1

Received By: Tracy Casarrubias 10/18/2023 7:18:00 AM

Completed By: Tracy Casarrubias 10/18/2023 7:47:00 AM

Reviewed By: SM 10/18/23

Chain of Custody

- 1. Is Chain of Custody complete? Yes [ ] No [x] Not Present [ ]
2. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: SM 10/18/23

Special Handling (if applicable)

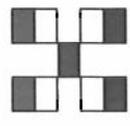
- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [x]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 10/18/23

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 3.7, Good, Yes, Morty, [ ], [ ]



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Turn-Around Time: 5 Day  
 Standard  Rush  
 Project Name: Piglet State SWD #1

Project #: 23E05383

Project Manager: Chance Dixon

Sampler: Fernando Rodriguez  
 On Ice:  Yes  No morty

# of Coolers: 1

Cooler Temp (including CF): 3.7-0 = 37°C

Container Type and #	Preservative Type	HEAL No.
1, 4oz jar	Ice	001
1, 4oz jar	Ice	002
1, 4oz jar	Ice	003
1, 4oz jar	Ice	004
1, 4oz jar	Ice	005
1, 4oz jar	Ice	006

Client: Silverback  
Vertex  
 Mailing Address: ON FILE  
 Phone #: \_\_\_\_\_  
 email or Fax#: \_\_\_\_\_  
 QA/QC Package:  Level 4 (Full Validation)  
 Standard  Az Compliance  Other  
 Accreditation:  NELAC  EDD (Type) \_\_\_\_\_

Date	Time	Matrix	Sample Name
10/13/23	10:00	Soil	BH23-01 0ft
10/13/23	10:05	Soil	BH23-01 2ft
10/13/23	10:10	Soil	BH23-02 0ft
10/13/23	10:15	Soil	BH23-02 2ft
10/13/23	10:20	Soil	BH23-03 0ft
10/13/23	10:25	Soil	BH23-03 2ft

Date: 10/13/23 Time: 17:00 Relinquished by: [Signature]  
 Date: 10/17/23 Time: 19:00 Relinquished by: [Signature]

Analysis Request										
BTEX / MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCBs	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				

Remarks: CC: Chance Dixon & Fernando Rodriguez  
Direct Bill to Silverback

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 noted on the analytical report.



Date	Time	Matrix	Sample Name
10/16/23	9:00	Soil	BH23-10 0ft
10/16/23	9:05	Soil	BH23-10 1ft
10/16/23	9:10	Soil	BH23-11 0ft
10/16/23	9:15	Soil	BH23-11 1ft
10/16/23	9:20	Soil	BH23-11 2ft
10/16/23	9:25	Soil	BH23-12 0ft
10/16/23	9:30	Soil	BH23-12 1ft
10/16/23	9:35	Soil	BH23-13 0ft
10/16/23	9:40	Soil	BH23-13 1ft
10/16/23	9:45	Soil	BH23-14 0ft
10/16/23	9:50	Soil	BH23-14 1ft

Date	Time	Relinquished by:	Date	Time
10/16	17:00	<u>[Signature]</u>	10/16/23	9:00
10/16/23	9:00	<u>[Signature]</u>	10/16/23	7:10

Received by: [Signature] Via: air courier  
 Received by: [Signature] Via: air courier

Remarks: CC: Chance Dixon & Fernando Rodriguez  
Direct Bill to Silverback

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

Analysis Request

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



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

November 03, 2023

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

RE: Piglet State SWD 1

OrderNo.: 2310A67

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 3 sample(s) on 10/21/2023 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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 **2310A67**

Date Reported: **11/3/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-12 2ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/18/2023 10:30:00 AM

**Lab ID:** 2310A67-001

**Matrix:** SOIL

**Received Date:** 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/24/2023 12:09:32 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/24/2023 12:09:32 PM
Surr: DNOP	103	69-147		%Rec	1	10/24/2023 12:09:32 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/24/2023 5:23:25 PM
Surr: BFB	95.1	15-244		%Rec	1	10/24/2023 5:23:25 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/24/2023 5:23:25 PM
Toluene	ND	0.048		mg/Kg	1	10/24/2023 5:23:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/24/2023 5:23:25 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/24/2023 5:23:25 PM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/24/2023 5:23:25 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	68	60		mg/Kg	20	10/26/2023 5:09:19 PM

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

<b>Qualifiers:</b>	* 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 **2310A67**

Date Reported: **11/3/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-13 2ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/18/2023 10:35:00 AM

**Lab ID:** 2310A67-002

**Matrix:** SOIL

**Received Date:** 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	10/25/2023 3:35:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/25/2023 3:35:19 PM
Surr: DNOP	70.5	69-147		%Rec	1	10/25/2023 3:35:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/24/2023 5:46:50 PM
Surr: BFB	95.8	15-244		%Rec	1	10/24/2023 5:46:50 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/24/2023 5:46:50 PM
Toluene	ND	0.048		mg/Kg	1	10/24/2023 5:46:50 PM
Ethylbenzene	ND	0.048		mg/Kg	1	10/24/2023 5:46:50 PM
Xylenes, Total	ND	0.095		mg/Kg	1	10/24/2023 5:46:50 PM
Surr: 4-Bromofluorobenzene	103	39.1-146		%Rec	1	10/24/2023 5:46:50 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	140	60		mg/Kg	20	10/26/2023 5:21:44 PM

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

<b>Qualifiers:</b>	* 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 **2310A67**

Date Reported: **11/3/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BH23-14 2ft

**Project:** Piglet State SWD 1

**Collection Date:** 10/18/2023 10:40:00 AM

**Lab ID:** 2310A67-003

**Matrix:** SOIL

**Received Date:** 10/21/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/24/2023 12:31:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/24/2023 12:31:20 PM
Surr: DNOP	102	69-147		%Rec	1	10/24/2023 12:31:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/24/2023 6:10:19 PM
Surr: BFB	96.8	15-244		%Rec	1	10/24/2023 6:10:19 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	10/24/2023 6:10:19 PM
Toluene	ND	0.049		mg/Kg	1	10/24/2023 6:10:19 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/24/2023 6:10:19 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/24/2023 6:10:19 PM
Surr: 4-Bromofluorobenzene	104	39.1-146		%Rec	1	10/24/2023 6:10:19 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>KCB</b>
Chloride	190	60		mg/Kg	20	10/26/2023 5:34:08 PM

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

<b>Qualifiers:</b>	* 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#: 2310A67

03-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78391</b>	SampType: <b>mbk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78391</b>	RunNo: <b>100758</b>								
Prep Date: <b>10/26/2023</b>	Analysis Date: <b>10/26/2023</b>	SeqNo: <b>3696871</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78391</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78391</b>	RunNo: <b>100758</b>								
Prep Date: <b>10/26/2023</b>	Analysis Date: <b>10/26/2023</b>	SeqNo: <b>3696872</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2310A67

03-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78319</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78319</b>	RunNo: <b>100704</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>	SeqNo: <b>3693071</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	105	61.9	130			
Surr: DNOP	5.4		5.000		107	69	147			

Sample ID: <b>MB-78319</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78319</b>	RunNo: <b>100704</b>								
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>	SeqNo: <b>3693073</b>	Units: <b>mg/Kg</b>							
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	13		10.00		133	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#: 2310A67

03-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78310</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78310</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693006</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.6	70	130			
Surr: BFB	2000		1000		199	15	244			

Sample ID: <b>ics-78320</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78320</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693007</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		199	15	244			

Sample ID: <b>mb-78310</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78310</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693008</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.1	15	244			

Sample ID: <b>mb-78320</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78320</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693009</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.1	15	244			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2310A67

03-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78310</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78310</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693018</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	70	130			
Toluene	1.0	0.050	1.000	0	100	70	130			
Ethylbenzene	1.0	0.050	1.000	0	100	70	130			
Xylenes, Total	3.0	0.10	3.000	0	101	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: <b>LCS-78320</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78320</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693019</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: <b>mb-78310</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78310</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693020</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: <b>mb-78320</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78320</b>		RunNo: <b>100707</b>							
Prep Date: <b>10/23/2023</b>	Analysis Date: <b>10/24/2023</b>		SeqNo: <b>3693021</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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: 2310A67 RcptNo: 1

Received By: Tracy Casarrubias 10/21/2023 8:00:00 AM

Completed By: Tracy Casarrubias 10/21/2023 9:02:24 AM

Reviewed By: TMC 10/23/23

Chain of Custody

- 1. Is Chain of Custody complete? Yes [ ] No [x] Not Present [ ]
2. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by: TMC 10/21/23

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [x]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 10/21/23

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 3.6, Good, Yes, Yogi





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

November 30, 2023

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

RE: Piglet State SWD 1

OrderNo.: 2311351

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 24 sample(s) on 11/8/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 21, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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

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

Sincerely,

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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-1 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:00:00 AM

Lab ID: 2311351-001

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	240	9.3		mg/Kg	1	11/14/2023 12:07:54 PM
Motor Oil Range Organics (MRO)	280	47		mg/Kg	1	11/14/2023 12:07:54 PM
Surr: DNOP	103	69-147		%Rec	1	11/14/2023 12:07:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:17:25 PM
Surr: BFB	88.9	15-244		%Rec	1	11/14/2023 5:17:25 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:17:25 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:17:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:17:25 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 5:17:25 PM
Surr: 4-Bromofluorobenzene	91.6	39.1-146		%Rec	1	11/14/2023 5:17:25 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	5700	300		mg/Kg	100	11/15/2023 7:19:39 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-2 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:05:00 AM

**Lab ID:** 2311351-002

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	540	95		mg/Kg	10	11/14/2023 1:00:48 AM
Motor Oil Range Organics (MRO)	520	480		mg/Kg	10	11/14/2023 1:00:48 AM
Surr: DNOP	0	69-147	S	%Rec	10	11/14/2023 1:00:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:40:40 PM
Surr: BFB	89.0	15-244		%Rec	1	11/14/2023 5:40:40 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:40:40 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:40:40 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:40:40 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 5:40:40 PM
Surr: 4-Bromofluorobenzene	91.8	39.1-146		%Rec	1	11/14/2023 5:40:40 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2300	150		mg/Kg	50	11/15/2023 7:32:03 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-3 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:10:00 AM

**Lab ID:** 2311351-003

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	720	100		mg/Kg	10	11/11/2023 11:35:13 AM
Motor Oil Range Organics (MRO)	780	500		mg/Kg	10	11/11/2023 11:35:13 AM
Surr: DNOP	0	69-147	S	%Rec	10	11/11/2023 11:35:13 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:04:02 PM
Surr: BFB	89.3	15-244		%Rec	1	11/14/2023 6:04:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	11/14/2023 6:04:02 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:04:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:04:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 6:04:02 PM
Surr: 4-Bromofluorobenzene	91.3	39.1-146		%Rec	1	11/14/2023 6:04:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	4500	150		mg/Kg	50	11/15/2023 2:46:36 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-4 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:15:00 AM

**Lab ID:** 2311351-004

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	410	49		mg/Kg	5	11/14/2023 12:57:42 PM
Motor Oil Range Organics (MRO)	530	240		mg/Kg	5	11/14/2023 12:57:42 PM
Surr: DNOP	103	69-147		%Rec	5	11/14/2023 12:57:42 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 6:27:24 PM
Surr: BFB	86.6	15-244		%Rec	1	11/14/2023 6:27:24 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	11/14/2023 6:27:24 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 6:27:24 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 6:27:24 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 6:27:24 PM
Surr: 4-Bromofluorobenzene	90.0	39.1-146		%Rec	1	11/14/2023 6:27:24 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	4300	150		mg/Kg	50	11/15/2023 2:59:01 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-5 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:20:00 AM

**Lab ID:** 2311351-005

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	540	96		mg/Kg	10	11/11/2023 12:22:37 PM
Motor Oil Range Organics (MRO)	620	480		mg/Kg	10	11/11/2023 12:22:37 PM
Surr: DNOP	0	69-147	S	%Rec	10	11/11/2023 12:22:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:50:48 PM
Surr: BFB	91.1	15-244		%Rec	1	11/14/2023 6:50:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:50:48 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:50:48 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:50:48 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/14/2023 6:50:48 PM
Surr: 4-Bromofluorobenzene	92.4	39.1-146		%Rec	1	11/14/2023 6:50:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	850	60		mg/Kg	20	11/14/2023 9:52:33 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-6 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:25:00 AM

Lab ID: 2311351-006

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	220	9.9		mg/Kg	1	11/14/2023 6:28:21 AM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/14/2023 6:28:21 AM
Surr: DNOP	83.2	69-147		%Rec	1	11/14/2023 6:28:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 3:36:00 AM
Surr: BFB	99.2	15-244		%Rec	1	11/14/2023 3:36:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 3:36:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 3:36:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 3:36:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/14/2023 3:36:00 AM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/14/2023 3:36:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	440	59		mg/Kg	20	11/14/2023 10:04:58 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-7 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:30:00 AM

**Lab ID:** 2311351-007

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	52	9.2		mg/Kg	1	11/14/2023 7:30:22 AM
Motor Oil Range Organics (MRO)	64	46		mg/Kg	1	11/14/2023 7:30:22 AM
Surr: DNOP	80.7	69-147		%Rec	1	11/14/2023 7:30:22 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 4:41:00 AM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 4:41:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/14/2023 4:41:00 AM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 4:41:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 4:41:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/14/2023 4:41:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/14/2023 4:41:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2100	150		mg/Kg	50	11/15/2023 3:11:26 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-8 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:35:00 AM

**Lab ID:** 2311351-008

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	260	9.6		mg/Kg	1	11/14/2023 11:34:09 PM
Motor Oil Range Organics (MRO)	380	48		mg/Kg	1	11/14/2023 11:34:09 PM
Surr: DNOP	97.0	69-147		%Rec	1	11/14/2023 11:34:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 5:46:00 AM
Surr: BFB	99.1	15-244		%Rec	1	11/14/2023 5:46:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/14/2023 5:46:00 AM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 5:46:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 5:46:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 5:46:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/14/2023 5:46:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	7100	300		mg/Kg	100	11/15/2023 3:23:51 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-9 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:40:00 AM

**Lab ID:** 2311351-009

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	88	9.4		mg/Kg	1	11/14/2023 7:51:16 AM
Motor Oil Range Organics (MRO)	97	47		mg/Kg	1	11/14/2023 7:51:16 AM
Surr: DNOP	79.6	69-147		%Rec	1	11/14/2023 7:51:16 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:08:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 6:08:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:08:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:08:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:08:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:08:00 AM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/14/2023 6:08:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2600	150		mg/Kg	50	11/15/2023 4:01:05 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-10 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:45:00 AM

**Lab ID:** 2311351-010

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	310	9.6		mg/Kg	1	11/15/2023 12:14:09 AM
Motor Oil Range Organics (MRO)	350	48		mg/Kg	1	11/15/2023 12:14:09 AM
Surr: DNOP	99.8	69-147		%Rec	1	11/15/2023 12:14:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 6:29:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 6:29:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:29:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 6:29:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 6:29:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/14/2023 6:29:00 AM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/14/2023 6:29:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	5900	300		mg/Kg	100	11/15/2023 4:13:30 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-11 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 10:50:00 AM

Lab ID: 2311351-011

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	130	9.7		mg/Kg	1	11/15/2023 12:54:08 AM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/15/2023 12:54:08 AM
Surr: DNOP	90.8	69-147		%Rec	1	11/15/2023 12:54:08 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:51:00 AM
Surr: BFB	96.4	15-244		%Rec	1	11/14/2023 6:51:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:51:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:51:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:51:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:51:00 AM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/14/2023 6:51:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	6300	300		mg/Kg	100	11/15/2023 4:25:54 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-12 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 10:55:00 AM

**Lab ID:** 2311351-012

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	78	9.3		mg/Kg	1	11/14/2023 8:22:42 AM
Motor Oil Range Organics (MRO)	89	46		mg/Kg	1	11/14/2023 8:22:42 AM
Surr: DNOP	79.6	69-147		%Rec	1	11/14/2023 8:22:42 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 7:13:00 AM
Surr: BFB	101	15-244		%Rec	1	11/14/2023 7:13:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	11/14/2023 7:13:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 7:13:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 7:13:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/14/2023 7:13:00 AM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/14/2023 7:13:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2900	150		mg/Kg	50	11/15/2023 4:38:19 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-13 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:00:00 AM

Lab ID: 2311351-013

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	380	9.6		mg/Kg	1	11/14/2023 10:32:00 AM
Motor Oil Range Organics (MRO)	460	48		mg/Kg	1	11/14/2023 10:32:00 AM
Surr: DNOP	92.6	69-147		%Rec	1	11/14/2023 10:32:00 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 7:35:00 AM
Surr: BFB	98.7	15-244		%Rec	1	11/14/2023 7:35:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	11/14/2023 7:35:00 AM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 7:35:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 7:35:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/14/2023 7:35:00 AM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	11/14/2023 7:35:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	2700	150		mg/Kg	50	11/15/2023 4:50:43 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-14 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:05:00 AM

Lab ID: 2311351-014

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	380	9.5		mg/Kg	1	11/14/2023 10:53:05 AM
Motor Oil Range Organics (MRO)	440	48		mg/Kg	1	11/14/2023 10:53:05 AM
Surr: DNOP	98.0	69-147		%Rec	1	11/14/2023 10:53:05 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 7:56:00 AM
Surr: BFB	104	15-244		%Rec	1	11/14/2023 7:56:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	11/14/2023 7:56:00 AM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 7:56:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 7:56:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 7:56:00 AM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/14/2023 7:56:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	2300	150		mg/Kg	50	11/15/2023 5:03:08 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-15 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:10:00 AM

Lab ID: 2311351-015

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	220	9.4		mg/Kg	1	11/14/2023 11:38:37 AM
Motor Oil Range Organics (MRO)	270	47		mg/Kg	1	11/14/2023 11:38:37 AM
Surr: DNOP	109	69-147		%Rec	1	11/14/2023 11:38:37 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/14/2023 4:28:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 4:28:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/14/2023 4:28:00 PM
Toluene	ND	0.050		mg/Kg	1	11/14/2023 4:28:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/14/2023 4:28:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/14/2023 4:28:00 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/14/2023 4:28:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	2800	150		mg/Kg	50	11/15/2023 5:15:32 PM

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

<b>Qualifiers:</b>	*	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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-16 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 11:15:00 AM

**Lab ID:** 2311351-016

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	210	9.3		mg/Kg	1	11/14/2023 12:19:19 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/14/2023 12:19:19 PM
Surr: DNOP	88.9	69-147		%Rec	1	11/14/2023 12:19:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 4:50:00 PM
Surr: BFB	101	15-244		%Rec	1	11/14/2023 4:50:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 4:50:00 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 4:50:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 4:50:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 4:50:00 PM
Surr: 4-Bromofluorobenzene	96.2	39.1-146		%Rec	1	11/14/2023 4:50:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	5100	300		mg/Kg	100	11/15/2023 5:27:56 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-17 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 11:20:00 AM

**Lab ID:** 2311351-017

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	440	9.4		mg/Kg	1	11/14/2023 1:00:07 PM
Motor Oil Range Organics (MRO)	530	47		mg/Kg	1	11/14/2023 1:00:07 PM
Surr: DNOP	113	69-147		%Rec	1	11/14/2023 1:00:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 5:11:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 5:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 5:11:00 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 5:11:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 5:11:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 5:11:00 PM
Surr: 4-Bromofluorobenzene	93.7	39.1-146		%Rec	1	11/14/2023 5:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	820	60		mg/Kg	20	11/15/2023 12:46:19 AM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-18 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:25:00 AM

Lab ID: 2311351-018

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	340	9.2		mg/Kg	1	11/14/2023 1:55:09 PM
Motor Oil Range Organics (MRO)	240	46		mg/Kg	1	11/14/2023 1:55:09 PM
Surr: DNOP	97.0	69-147		%Rec	1	11/14/2023 1:55:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/14/2023 5:33:00 PM
Surr: BFB	97.2	15-244		%Rec	1	11/14/2023 5:33:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/14/2023 5:33:00 PM
Toluene	ND	0.046		mg/Kg	1	11/14/2023 5:33:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/14/2023 5:33:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/14/2023 5:33:00 PM
Surr: 4-Bromofluorobenzene	91.6	39.1-146		%Rec	1	11/14/2023 5:33:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	780	61		mg/Kg	20	11/15/2023 12:58:44 AM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-19 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:30:00 AM

Lab ID: 2311351-019

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	77	9.4		mg/Kg	1	11/15/2023 1:53:35 PM
Motor Oil Range Organics (MRO)	100	47		mg/Kg	1	11/15/2023 1:53:35 PM
Surr: DNOP	90.2	69-147		%Rec	1	11/15/2023 1:53:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/14/2023 5:54:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 5:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.023		mg/Kg	1	11/14/2023 5:54:00 PM
Toluene	ND	0.047		mg/Kg	1	11/14/2023 5:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/14/2023 5:54:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/14/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	11/14/2023 5:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	4200	150		mg/Kg	50	11/15/2023 5:40:20 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-20 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 11:35:00 AM

**Lab ID:** 2311351-020

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	130	9.6		mg/Kg	1	11/14/2023 3:17:13 PM
Motor Oil Range Organics (MRO)	140	48		mg/Kg	1	11/14/2023 3:17:13 PM
Surr: DNOP	84.4	69-147		%Rec	1	11/14/2023 3:17:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 6:16:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 6:16:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 6:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 6:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	96.6	39.1-146		%Rec	1	11/14/2023 6:16:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	5300	300		mg/Kg	100	11/15/2023 5:52:45 PM

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

<b>Qualifiers:</b>	* 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 **2311351**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-21 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/6/2023 11:40:00 AM

**Lab ID:** 2311351-021

**Matrix:** SOIL

**Received Date:** 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/14/2023 3:57:54 PM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/14/2023 3:57:54 PM
Surr: DNOP	101	69-147		%Rec	1	11/14/2023 3:57:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/14/2023 6:38:00 PM
Surr: BFB	99.1	15-244		%Rec	1	11/14/2023 6:38:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/14/2023 6:38:00 PM
Toluene	ND	0.048		mg/Kg	1	11/14/2023 6:38:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/14/2023 6:38:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/14/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	97.1	39.1-146		%Rec	1	11/14/2023 6:38:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	8300	300		mg/Kg	100	11/15/2023 6:30:00 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-22 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:45:00 AM

Lab ID: 2311351-022

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	210	9.9		mg/Kg	1	11/14/2023 4:38:25 PM
Motor Oil Range Organics (MRO)	240	49		mg/Kg	1	11/14/2023 4:38:25 PM
Surr: DNOP	103	69-147		%Rec	1	11/14/2023 4:38:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 7:00:00 PM
Surr: BFB	102	15-244		%Rec	1	11/14/2023 7:00:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 7:00:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 7:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 7:00:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 7:00:00 PM
Surr: 4-Bromofluorobenzene	97.2	39.1-146		%Rec	1	11/14/2023 7:00:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	4600	150		mg/Kg	50	11/15/2023 6:42:25 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-23 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:50:00 AM

Lab ID: 2311351-023

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	240	9.3		mg/Kg	1	11/14/2023 5:18:52 PM
Motor Oil Range Organics (MRO)	300	47		mg/Kg	1	11/14/2023 5:18:52 PM
Surr: DNOP	94.7	69-147		%Rec	1	11/14/2023 5:18:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/14/2023 7:43:00 PM
Surr: BFB	103	15-244		%Rec	1	11/14/2023 7:43:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/14/2023 7:43:00 PM
Toluene	ND	0.050		mg/Kg	1	11/14/2023 7:43:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/14/2023 7:43:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/14/2023 7:43:00 PM
Surr: 4-Bromofluorobenzene	95.1	39.1-146		%Rec	1	11/14/2023 7:43:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	3900	150		mg/Kg	50	11/16/2023 4:20:08 PM

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

<b>Qualifiers:</b>	* 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 2311351

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-24 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/6/2023 11:55:00 AM

Lab ID: 2311351-024

Matrix: SOIL

Received Date: 11/8/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	110	9.7		mg/Kg	1	11/14/2023 5:59:20 PM
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	11/14/2023 5:59:20 PM
Surr: DNOP	85.2	69-147		%Rec	1	11/14/2023 5:59:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/14/2023 8:05:00 PM
Surr: BFB	98.8	15-244		%Rec	1	11/14/2023 8:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/14/2023 8:05:00 PM
Toluene	ND	0.049		mg/Kg	1	11/14/2023 8:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/14/2023 8:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/14/2023 8:05:00 PM
Surr: 4-Bromofluorobenzene	95.5	39.1-146		%Rec	1	11/14/2023 8:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	6000	300		mg/Kg	100	11/16/2023 4:32:32 PM

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

<b>Qualifiers:</b>	* 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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78778</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78778</b>	RunNo: <b>101177</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3717888</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78778</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78778</b>	RunNo: <b>101177</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3717889</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.9	90	110			

Sample ID: <b>MB-78780</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78780</b>	RunNo: <b>101183</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3718410</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78780</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78780</b>	RunNo: <b>101183</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3718411</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Sample ID: <b>MB-78770</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78770</b>	RunNo: <b>101196</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3718725</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78770</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78770</b>	RunNo: <b>101196</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3718726</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78706</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78706</b>	RunNo: <b>101132</b>								
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/11/2023</b>	SeqNo: <b>3714471</b>	Units: <b>mg/Kg</b>							
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		106	69	147			

Sample ID: <b>LCS-78706</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78706</b>	RunNo: <b>101132</b>								
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/11/2023</b>	SeqNo: <b>3714472</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	61.9	130			
Surr: DNOP	4.9		5.000		99.0	69	147			

Sample ID: <b>MB-78735</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78735</b>	RunNo: <b>101145</b>								
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3715614</b>	Units: <b>mg/Kg</b>							
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	8.0		10.00		79.6	69	147			

Sample ID: <b>2311351-006AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-6 0.5ft</b>	Batch ID: <b>78735</b>	RunNo: <b>101124</b>								
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3715689</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	180	9.2	46.04	222.9	-93.5	54.2	135	23.5	29.2	S
Surr: DNOP	3.6		4.604		78.3	69	147	0	0	

Sample ID: <b>2311351-006AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-6 0.5ft</b>	Batch ID: <b>78735</b>	RunNo: <b>101145</b>								
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3717267</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	230	9.6	47.94	222.9	10.2	54.2	135			S
Surr: DNOP	4.0		4.794		84.3	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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78735</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78735</b>		RunNo: <b>101145</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3717323</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.9	61.9	130			
Surr: DNOP	3.6		5.000		72.4	69	147			

Sample ID: <b>MB-78785</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78785</b>		RunNo: <b>101178</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720894</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		106	69	147			

Sample ID: <b>LCS-78785</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78785</b>		RunNo: <b>101178</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720895</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.7	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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78688</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78688</b>		RunNo: <b>101130</b>							
Prep Date: <b>11/9/2023</b>	Analysis Date: <b>11/13/2023</b>		SeqNo: <b>3715350</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.7	70	130			
Surr: BFB	1800		1000		176	15	244			

Sample ID: <b>mb-78688</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78688</b>		RunNo: <b>101130</b>							
Prep Date: <b>11/9/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3715352</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		84.5	15	244			

Sample ID: <b>ics-78710</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716489</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.3	70	130			
Surr: BFB	2200		1000		216	15	244			

Sample ID: <b>mb-78710</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716490</b>		Units: <b>mg/Kg</b>					
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		100	15	244			

Sample ID: <b>2311351-006ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-6 0.5ft</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716493</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.76	0	97.5	70	130			
Surr: BFB	2100		950.6		218	15	244			

Sample ID: <b>2311351-006amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-6 0.5ft</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716494</b>		Units: <b>mg/Kg</b>					
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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2311351-006amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS23-6 0.5ft</b>	Batch ID: <b>78710</b>	RunNo: <b>101136</b>								
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3716494</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.58	0	91.2	70	130	7.45	20	
Surr: BFB	2100		943.4		218	15	244	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78688</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78688</b>		RunNo: <b>101130</b>							
Prep Date: <b>11/9/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3715395</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.8	70	130			
Toluene	0.93	0.050	1.000	0	92.7	70	130			
Ethylbenzene	0.90	0.050	1.000	0	89.8	70	130			
Xylenes, Total	2.7	0.10	3.000	0	88.8	70	130			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.1	39.1	146			

Sample ID: <b>mb-78688</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78688</b>		RunNo: <b>101130</b>							
Prep Date: <b>11/9/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3715397</b>		Units: <b>mg/Kg</b>					
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		85.0	39.1	146			

Sample ID: <b>lcs-78710</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716505</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.8	70	130			
Toluene	0.94	0.050	1.000	0	94.2	70	130			
Ethylbenzene	0.95	0.050	1.000	0	94.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.4	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.9	39.1	146			

Sample ID: <b>mb-78710</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78710</b>		RunNo: <b>101136</b>							
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>		SeqNo: <b>3716506</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	39.1	146			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2311351

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>2311351-007ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS23-7 0.5ft</b>	Batch ID: <b>78710</b>	RunNo: <b>101136</b>								
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3716510</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9785	0	89.1	70	130			
Toluene	0.89	0.049	0.9785	0	90.6	70	130			
Ethylbenzene	0.91	0.049	0.9785	0	93.4	70	130			
Xylenes, Total	2.7	0.098	2.935	0	92.7	70	130			
Surr: 4-Bromofluorobenzene	0.92		0.9785		93.9	39.1	146			

Sample ID: <b>2311351-007amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS23-7 0.5ft</b>	Batch ID: <b>78710</b>	RunNo: <b>101136</b>								
Prep Date: <b>11/10/2023</b>	Analysis Date: <b>11/14/2023</b>	SeqNo: <b>3716511</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9794	0	92.7	70	130	4.07	20	
Toluene	0.91	0.049	0.9794	0	93.2	70	130	2.97	20	
Ethylbenzene	0.93	0.049	0.9794	0	95.2	70	130	1.96	20	
Xylenes, Total	2.8	0.098	2.938	0	95.0	70	130	2.62	20	
Surr: 4-Bromofluorobenzene	0.95		0.9794		96.6	39.1	146	0	0	

**Qualifiers:**

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



Environment Testin.

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

Sample Log-In Check List

Client Name: Vertex Resources Work Order Number: 2311351 RcptNo: 1
Received By: Tracy Casarrubias 11/8/2023 7:35:00 AM
Completed By: Tracy Casarrubias 11/8/2023 7:58:10 AM
Reviewed By: [Signature] 11-8-23

Chain of Custody

- 1. Is Chain of Custody complete? Yes [ ] No [x] Not Present [ ]
2. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted?
Checked by: [Signature] 11/8/23

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [x]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/8/23

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 2.4, Good, Yes, Yogi, [ ], [ ]

### Chain-of-Custody Record

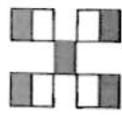
Client: Silverback  
 (Vertex)  
 Mailing Address: On file  
 Phone #: \_\_\_\_\_  
 email or Fax#: \_\_\_\_\_  
 QA/QC Package:  Level 4 (Full Validation)  
 Accreditation:  Az Compliance  
 NELAC  Other  
 EDD (Type) \_\_\_\_\_

Turn-Around Time: 1 Standard  Rush 5 Day  
 Project Name: Piglet State SWD #1  
 Project #: 23E-05383  
 Project Manager: Chance Dixon

Sampler: Fernando Rodriguez  
 On Ice:  Yes  No 40g  
 # of Coolers: 1  
 Cooler Temp (including cfl): 24-0=24°C  
 Container Type and #  
 Preservative Type  
 HEAL No. 231134451

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/06/23	10:00	Soil	B SS23-01 0# 0.5	1, 4oz jar	Ice	001
11/06/23	10:05	Soil	W SS23-02 0# 0.5	1, 4oz jar	Ice	002
11/06/23	10:10	Soil	B SS23-03 0# 0.5	1, 4oz jar	Ice	003
11/06/23	10:15	Soil	B SS23-04 0# 0.5	1, 4oz jar	Ice	004
11/06/23	10:20	Soil	W SS23-05 0# 0.5	1, 4oz jar	Ice	005
11/06/23	10:25	Soil	B SS23-06 0# 0.5	1, 4oz jar	Ice	006
11/06/23	10:30	Soil	B SS23-07 0# 0.5	1, 4oz jar	Ice	007
11/06/23	10:35	Soil	B SS23-08 0# 0.5	1, 4oz jar	Ice	008
11/06/23	10:40	Soil	B SS23-09 0# 0.5	1, 4oz jar	Ice	009
11/06/23	10:45	Soil	B SS23-10 0# 0.5	1, 4oz jar	Ice	010
11/06/23	10:50	Soil	B SS23-11 0# 0.5	1, 4oz jar	Ice	011
11/06/23	10:55	Soil	B SS23-12 0# 0.5	1, 4oz jar	Ice	012

Received by: [Signature] Date: 11/13 Time: 1000  
 Relinquished by: [Signature] Date: 11/13 Time: 7:35  
 Received by: Via courier Date: 11/13/23  
 Relinquished by: [Signature] Date: 11/13/23



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

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

Remarks:

CC: Chance Dixon & Fernando Rodriguez  
Direct bill to Silverback  
11/28/23 Per Fernando R. - All Sample ID's and depth's have been updated. me

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 noted on the analytical report.

### Chain-of-Custody Record

Client: Silverback

(Vertex)  
Mailing Address: On file

Phone #:

email or Fax#:

QA/QC Package:

Standard  Level 4 (Full Validation)

Accreditation:  Az Compliance

NELAC

EDD (Type)

Turn-Around Time:  
 Standard  Rush 5 Day  
Project Name: Piglet State SWD #1

Project #:  
23E-05383

Project Manager:  
Chance Dixon

Sampler: Fernando Rodriguez  
On Ice:  Yes  No *uqj*

# of Coolers: 1

Cooler Temp (including CF): 24-0 = 2.4 ~  
HEAL No. 2311351

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(C) F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/06/23	11:00	Soil	W SS23-13 0ft 0.5 <i>mg 11/28/23</i>	1, 4oz jar	Ice	X					X			
11/06/23	11:05	Soil	B SS23-14 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:10	Soil	B SS23-15 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:15	Soil	B SS23-16 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:20	Soil	B SS23-17 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:25	Soil	W SS23-18 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:30	Soil	B SS23-19 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:35	Soil	B SS23-20 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:40	Soil	B SS23-21 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:45	Soil	B SS23-22 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:50	Soil	B SS23-23 0ft 0.5	1, 4oz jar	Ice	X					X			
11/06/23	11:55	Soil	B SS23-24 0ft 0.5	1, 4oz jar	Ice	X					X			

Date: 11/6 17:00 Relinquished by: *[Signature]* Date Time: 11/7/23 1000  
Date: 11/7/23 190 Relinquished by: *[Signature]* Date Time: 11/8/23 7:35

Remarks:

cc: Chance Dixon & Fernando *[Signature]*

Direct bill to Silverback

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



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

November 30, 2023

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

RE: Piglet State SWD 1

OrderNo.: 2311454

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 24 sample(s) on 11/9/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 22, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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

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

Sincerely,

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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-25 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:00:00 AM

Lab ID: 2311454-001

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	180	9.6		mg/Kg	1	11/16/2023 3:54:32 AM
Motor Oil Range Organics (MRO)	170	48		mg/Kg	1	11/16/2023 3:54:32 AM
Surr: DNOP	113	69-147		%Rec	1	11/16/2023 3:54:32 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 5:54:00 PM
Surr: BFB	105	15-244		%Rec	1	11/15/2023 5:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 5:54:00 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 5:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 5:54:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 5:54:00 PM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/15/2023 5:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1900	60		mg/Kg	20	11/16/2023 12:03:35 AM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-26 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:05:00 AM

Lab ID: 2311454-002

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	11/16/2023 4:41:37 AM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/16/2023 4:41:37 AM
Surr: DNOP	115	69-147		%Rec	1	11/16/2023 4:41:37 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 6:16:00 PM
Surr: BFB	97.8	15-244		%Rec	1	11/15/2023 6:16:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 6:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 6:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 6:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 6:16:00 PM
Surr: 4-Bromofluorobenzene	95.7	39.1-146		%Rec	1	11/15/2023 6:16:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1200	59		mg/Kg	20	11/15/2023 2:07:58 PM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-27 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:10:00 AM

Lab ID: 2311454-003

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	150	10		mg/Kg	1	11/16/2023 5:05:07 AM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/16/2023 5:05:07 AM
Surr: DNOP	116	69-147		%Rec	1	11/16/2023 5:05:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/15/2023 6:38:00 PM
Surr: BFB	99.2	15-244		%Rec	1	11/15/2023 6:38:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	11/15/2023 6:38:00 PM
Toluene	ND	0.046		mg/Kg	1	11/15/2023 6:38:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/15/2023 6:38:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/15/2023 6:38:00 PM
Surr: 4-Bromofluorobenzene	96.1	39.1-146		%Rec	1	11/15/2023 6:38:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1800	59		mg/Kg	20	11/15/2023 3:34:49 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-28 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:15:00 AM

**Lab ID:** 2311454-004

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	180	9.9		mg/Kg	1	11/16/2023 5:28:40 AM
Motor Oil Range Organics (MRO)	180	50		mg/Kg	1	11/16/2023 5:28:40 AM
Surr: DNOP	118	69-147		%Rec	1	11/16/2023 5:28:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 7:00:00 PM
Surr: BFB	100	15-244		%Rec	1	11/15/2023 7:00:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2023 7:00:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 7:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 7:00:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2023 7:00:00 PM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/15/2023 7:00:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2300	60		mg/Kg	20	11/15/2023 3:47:14 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-29 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:20:00 AM

**Lab ID:** 2311454-005

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	120	10		mg/Kg	1	11/16/2023 6:16:12 AM
Motor Oil Range Organics (MRO)	120	50		mg/Kg	1	11/16/2023 6:16:12 AM
Surr: DNOP	116	69-147		%Rec	1	11/16/2023 6:16:12 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 7:21:00 PM
Surr: BFB	97.4	15-244		%Rec	1	11/15/2023 7:21:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 7:21:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 7:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 7:21:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 7:21:00 PM
Surr: 4-Bromofluorobenzene	94.7	39.1-146		%Rec	1	11/15/2023 7:21:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1500	59		mg/Kg	20	11/15/2023 3:59:39 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-30 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:25:00 AM

**Lab ID:** 2311454-006

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	11/16/2023 6:40:01 AM
Motor Oil Range Organics (MRO)	190	48		mg/Kg	1	11/16/2023 6:40:01 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 6:40:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 7:43:00 PM
Surr: BFB	104	15-244		%Rec	1	11/15/2023 7:43:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2023 7:43:00 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 7:43:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 7:43:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2023 7:43:00 PM
Surr: 4-Bromofluorobenzene	97.2	39.1-146		%Rec	1	11/15/2023 7:43:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2200	60		mg/Kg	20	11/15/2023 4:12:04 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-31 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:30:00 AM

**Lab ID:** 2311454-007

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/16/2023 7:03:55 AM
Motor Oil Range Organics (MRO)	140	48		mg/Kg	1	11/16/2023 7:03:55 AM
Surr: DNOP	108	69-147		%Rec	1	11/16/2023 7:03:55 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 8:05:00 PM
Surr: BFB	104	15-244		%Rec	1	11/15/2023 8:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 8:05:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 8:05:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 8:05:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 8:05:00 PM
Surr: 4-Bromofluorobenzene	99.0	39.1-146		%Rec	1	11/15/2023 8:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1500	60		mg/Kg	20	11/15/2023 4:24:28 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-32 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:35:00 AM

**Lab ID:** 2311454-008

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	100	9.3		mg/Kg	1	11/16/2023 7:51:20 AM
Motor Oil Range Organics (MRO)	100	46		mg/Kg	1	11/16/2023 7:51:20 AM
Surr: DNOP	109	69-147		%Rec	1	11/16/2023 7:51:20 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 8:27:00 PM
Surr: BFB	99.8	15-244		%Rec	1	11/15/2023 8:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 8:27:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 8:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 8:27:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/15/2023 8:27:00 PM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/15/2023 8:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1600	60		mg/Kg	20	11/15/2023 4:36:52 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-33 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:40:00 AM

**Lab ID:** 2311454-009

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	250	9.2		mg/Kg	1	11/16/2023 8:15:03 AM
Motor Oil Range Organics (MRO)	250	46		mg/Kg	1	11/16/2023 8:15:03 AM
Surr: DNOP	114	69-147		%Rec	1	11/16/2023 8:15:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/15/2023 8:48:00 PM
Surr: BFB	101	15-244		%Rec	1	11/15/2023 8:48:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2023 8:48:00 PM
Toluene	ND	0.050		mg/Kg	1	11/15/2023 8:48:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/15/2023 8:48:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/15/2023 8:48:00 PM
Surr: 4-Bromofluorobenzene	98.3	39.1-146		%Rec	1	11/15/2023 8:48:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1900	60		mg/Kg	20	11/15/2023 5:14:05 PM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-34 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 8:45:00 AM

Lab ID: 2311454-010

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	190	9.6		mg/Kg	1	11/16/2023 9:02:26 AM
Motor Oil Range Organics (MRO)	190	48		mg/Kg	1	11/16/2023 9:02:26 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 9:02:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 9:32:00 PM
Surr: BFB	99.4	15-244		%Rec	1	11/15/2023 9:32:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 9:32:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 9:32:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 9:32:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 9:32:00 PM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	11/15/2023 9:32:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2300	61		mg/Kg	20	11/15/2023 5:26:29 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-35 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:50:00 AM

**Lab ID:** 2311454-011

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	160	9.4		mg/Kg	1	11/16/2023 9:26:10 AM
Motor Oil Range Organics (MRO)	160	47		mg/Kg	1	11/16/2023 9:26:10 AM
Surr: DNOP	111	69-147		%Rec	1	11/16/2023 9:26:10 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 10:15:00 PM
Surr: BFB	99.9	15-244		%Rec	1	11/15/2023 10:15:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 10:15:00 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 10:15:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 10:15:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2023 10:15:00 PM
Surr: 4-Bromofluorobenzene	94.3	39.1-146		%Rec	1	11/15/2023 10:15:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1900	60		mg/Kg	20	11/15/2023 5:38:54 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-36 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 8:55:00 AM

**Lab ID:** 2311454-012

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	120	9.1		mg/Kg	1	11/15/2023 2:14:45 PM
Motor Oil Range Organics (MRO)	140	46		mg/Kg	1	11/15/2023 2:14:45 PM
Surr: DNOP	92.8	69-147		%Rec	1	11/15/2023 2:14:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 11:04:13 PM
Surr: BFB	89.6	15-244		%Rec	1	11/15/2023 11:04:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:04:13 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 11:04:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 11:04:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:04:13 PM
Surr: 4-Bromofluorobenzene	91.5	39.1-146		%Rec	1	11/15/2023 11:04:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2200	61		mg/Kg	20	11/15/2023 5:51:18 PM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-37 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:00:00 AM

Lab ID: 2311454-013

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	11/15/2023 2:25:20 PM
Motor Oil Range Organics (MRO)	130	48		mg/Kg	1	11/15/2023 2:25:20 PM
Surr: DNOP	84.0	69-147		%Rec	1	11/15/2023 2:25:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2023 11:27:44 PM
Surr: BFB	90.6	15-244		%Rec	1	11/15/2023 11:27:44 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.023		mg/Kg	1	11/15/2023 11:27:44 PM
Toluene	ND	0.047		mg/Kg	1	11/15/2023 11:27:44 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2023 11:27:44 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/15/2023 11:27:44 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/15/2023 11:27:44 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1700	59		mg/Kg	20	11/15/2023 6:03:43 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-38 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:05:00 AM

**Lab ID:** 2311454-014

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	100	10		mg/Kg	1	11/15/2023 2:36:01 PM
Motor Oil Range Organics (MRO)	120	50		mg/Kg	1	11/15/2023 2:36:01 PM
Surr: DNOP	89.4	69-147		%Rec	1	11/15/2023 2:36:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2023 11:51:17 PM
Surr: BFB	91.1	15-244		%Rec	1	11/15/2023 11:51:17 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:51:17 PM
Toluene	ND	0.049		mg/Kg	1	11/15/2023 11:51:17 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2023 11:51:17 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:51:17 PM
Surr: 4-Bromofluorobenzene	93.0	39.1-146		%Rec	1	11/15/2023 11:51:17 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2100	61		mg/Kg	20	11/15/2023 6:16:08 PM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-39 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:10:00 AM

Lab ID: 2311454-015

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	11/15/2023 2:46:38 PM
Motor Oil Range Organics (MRO)	150	47		mg/Kg	1	11/15/2023 2:46:38 PM
Surr: DNOP	84.5	69-147		%Rec	1	11/15/2023 2:46:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 12:14:52 AM
Surr: BFB	89.6	15-244		%Rec	1	11/16/2023 12:14:52 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 12:14:52 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 12:14:52 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 12:14:52 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 12:14:52 AM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	11/16/2023 12:14:52 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1700	60		mg/Kg	20	11/15/2023 6:28:33 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-40 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:15:00 AM

**Lab ID:** 2311454-016

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	200	9.4		mg/Kg	1	11/15/2023 2:57:28 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/15/2023 2:57:28 PM
Surr: DNOP	99.8	69-147		%Rec	1	11/15/2023 2:57:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 12:38:20 AM
Surr: BFB	90.2	15-244		%Rec	1	11/16/2023 12:38:20 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 12:38:20 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 12:38:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 12:38:20 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 12:38:20 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	11/16/2023 12:38:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	3000	150		mg/Kg	50	11/16/2023 9:22:56 AM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-41 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:20:00 AM

**Lab ID:** 2311454-017

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	88	9.8		mg/Kg	1	11/15/2023 3:08:18 PM
Motor Oil Range Organics (MRO)	120	49		mg/Kg	1	11/15/2023 3:08:18 PM
Surr: DNOP	97.4	69-147		%Rec	1	11/15/2023 3:08:18 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 1:01:45 AM
Surr: BFB	88.0	15-244		%Rec	1	11/16/2023 1:01:45 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 1:01:45 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 1:01:45 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 1:01:45 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 1:01:45 AM
Surr: 4-Bromofluorobenzene	90.2	39.1-146		%Rec	1	11/16/2023 1:01:45 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1700	60		mg/Kg	20	11/15/2023 6:53:21 PM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-42 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:25:00 AM

**Lab ID:** 2311454-018

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	210	9.4		mg/Kg	1	11/15/2023 3:19:05 PM
Motor Oil Range Organics (MRO)	260	47		mg/Kg	1	11/15/2023 3:19:05 PM
Surr: DNOP	92.9	69-147		%Rec	1	11/15/2023 3:19:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 1:25:16 AM
Surr: BFB	89.6	15-244		%Rec	1	11/16/2023 1:25:16 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 1:25:16 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 1:25:16 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 1:25:16 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 1:25:16 AM
Surr: 4-Bromofluorobenzene	92.2	39.1-146		%Rec	1	11/16/2023 1:25:16 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	3200	150		mg/Kg	50	11/16/2023 9:35:20 AM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-43 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:30:00 AM

**Lab ID:** 2311454-019

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 3:29:54 PM
Motor Oil Range Organics (MRO)	220	49		mg/Kg	1	11/15/2023 3:29:54 PM
Surr: DNOP	99.3	69-147		%Rec	1	11/15/2023 3:29:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 1:48:47 AM
Surr: BFB	91.8	15-244		%Rec	1	11/16/2023 1:48:47 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 1:48:47 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 1:48:47 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 1:48:47 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 1:48:47 AM
Surr: 4-Bromofluorobenzene	93.7	39.1-146		%Rec	1	11/16/2023 1:48:47 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1500	60		mg/Kg	20	11/16/2023 2:07:41 AM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-44 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:35:00 AM

**Lab ID:** 2311454-020

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	11/15/2023 3:40:39 PM
Motor Oil Range Organics (MRO)	240	48		mg/Kg	1	11/15/2023 3:40:39 PM
Surr: DNOP	91.9	69-147		%Rec	1	11/15/2023 3:40:39 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:12:13 AM
Surr: BFB	92.5	15-244		%Rec	1	11/16/2023 2:12:13 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:12:13 AM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:12:13 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:12:13 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 2:12:13 AM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 2:12:13 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2200	60		mg/Kg	20	11/16/2023 2:20:06 AM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-45 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:40:00 AM

Lab ID: 2311454-021

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 3:51:26 PM
Motor Oil Range Organics (MRO)	210	49		mg/Kg	1	11/15/2023 3:51:26 PM
Surr: DNOP	89.2	69-147		%Rec	1	11/15/2023 3:51:26 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 2:59:05 AM
Surr: BFB	91.0	15-244		%Rec	1	11/16/2023 2:59:05 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:59:05 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 2:59:05 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 2:59:05 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 2:59:05 AM
Surr: 4-Bromofluorobenzene	92.6	39.1-146		%Rec	1	11/16/2023 2:59:05 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	2300	150		mg/Kg	50	11/16/2023 9:47:44 AM

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

<b>Qualifiers:</b>	* 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 2311454

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-46 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/7/2023 9:45:00 AM

Lab ID: 2311454-022

Matrix: SOIL

Received Date: 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	180	9.3		mg/Kg	1	11/15/2023 4:02:10 PM
Motor Oil Range Organics (MRO)	230	47		mg/Kg	1	11/15/2023 4:02:10 PM
Surr: DNOP	107	69-147		%Rec	1	11/15/2023 4:02:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 3:22:35 AM
Surr: BFB	85.9	15-244		%Rec	1	11/16/2023 3:22:35 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:22:35 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 3:22:35 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 3:22:35 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 3:22:35 AM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	11/16/2023 3:22:35 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	2200	150		mg/Kg	50	11/16/2023 10:00:09 AM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-47 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:50:00 AM

**Lab ID:** 2311454-023

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	140	9.7		mg/Kg	1	11/15/2023 4:12:55 PM
Motor Oil Range Organics (MRO)	180	48		mg/Kg	1	11/15/2023 4:12:55 PM
Surr: DNOP	90.7	69-147		%Rec	1	11/15/2023 4:12:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 3:46:02 AM
Surr: BFB	90.7	15-244		%Rec	1	11/16/2023 3:46:02 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 3:46:02 AM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 3:46:02 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 3:46:02 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 3:46:02 AM
Surr: 4-Bromofluorobenzene	92.3	39.1-146		%Rec	1	11/16/2023 3:46:02 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2100	61		mg/Kg	20	11/16/2023 3:22:09 AM

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

<b>Qualifiers:</b>	* 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 **2311454**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-48 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/7/2023 9:55:00 AM

**Lab ID:** 2311454-024

**Matrix:** SOIL

**Received Date:** 11/9/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	11/15/2023 5:16:29 PM
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	11/15/2023 5:16:29 PM
Surr: DNOP	91.6	69-147		%Rec	1	11/15/2023 5:16:29 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2023 11:42:00 PM
Surr: BFB	107	15-244		%Rec	1	11/15/2023 11:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2023 11:42:00 PM
Toluene	ND	0.048		mg/Kg	1	11/15/2023 11:42:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2023 11:42:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2023 11:42:00 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	11/15/2023 11:42:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1900	59		mg/Kg	20	11/16/2023 3:34:33 AM

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

<b>Qualifiers:</b>	* 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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78811</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78811</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720672</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78811</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78811</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720673</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: <b>MB-78812</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78812</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720674</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78812</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78812</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720675</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Sample ID: <b>MB-78817</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78817</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/16/2023</b>	SeqNo: <b>3720765</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	30								

Sample ID: <b>LCS-78817</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78817</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/16/2023</b>	SeqNo: <b>3720767</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78800</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78800</b>		RunNo: <b>101145</b>							
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719019</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.1	61.9	130			
Surr: DNOP	3.8		5.000		75.7	69	147			

Sample ID: <b>MB-78800</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78800</b>		RunNo: <b>101145</b>							
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719020</b>		Units: <b>mg/Kg</b>					
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	8.5		10.00		84.6	69	147			

Sample ID: <b>LCS-78805</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78805</b>		RunNo: <b>101145</b>							
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719807</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.7	61.9	130			
Surr: DNOP	4.2		5.000		84.7	69	147			

Sample ID: <b>MB-78805</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78805</b>		RunNo: <b>101145</b>							
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719809</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.5	69	147			

Sample ID: <b>MB-78774</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78774</b>		RunNo: <b>101201</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719857</b>		Units: <b>mg/Kg</b>					
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		106	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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78774</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78774</b>		RunNo: <b>101201</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3719858</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	61.9	130			
Surr: DNOP	4.8		5.000		95.9	69	147			

Sample ID: <b>2311454-011AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BS23-35 0.5ft</b>	Batch ID: <b>78774</b>		RunNo: <b>101201</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3721602</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	210	9.9	49.36	156.3	115	54.2	135			
Surr: DNOP	5.6		4.936		113	69	147			

Sample ID: <b>2311454-011AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BS23-35 0.5ft</b>	Batch ID: <b>78774</b>		RunNo: <b>101201</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3721603</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	220	9.4	47.21	156.3	126	54.2	135	1.49	29.2	
Surr: DNOP	5.3		4.721		113	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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78760</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78760</b>		RunNo: <b>101155</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3717629</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.3	70	130			
Surr: BFB	1900		1000		189	15	244			

Sample ID: <b>mb-78760</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78760</b>		RunNo: <b>101155</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3717630</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		91.5	15	244			

Sample ID: <b>ics-78756</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78756</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720827</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.1	70	130			
Surr: BFB	2200		1000		223	15	244			

Sample ID: <b>mb-78756</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78756</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720828</b>		Units: <b>mg/Kg</b>					
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		103	15	244			

Sample ID: <b>ics-78790</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720851</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.6	70	130			
Surr: BFB	2200		1000		217	15	244			

Sample ID: <b>mb-78790</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720852</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)										
Surr: BFB										

**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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>mb-78790</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720852</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	15	244			

Sample ID: <b>2311454-024ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WS23-48 0.5ft</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3720854</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	99.8	70	130			
Surr: BFB	2200		970.9		228	15	244			

Sample ID: <b>2311454-024amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WS23-48 0.5ft</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3720855</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	24.22	0	102	70	130	1.95	20	
Surr: BFB	2200		969.0		224	15	244	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78760</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78760</b>		RunNo: <b>101155</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3717753</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	70	130			
Toluene	0.97	0.050	1.000	0	96.7	70	130			
Ethylbenzene	0.96	0.050	1.000	0	95.8	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.5	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.7	39.1	146			

Sample ID: <b>mb-78760</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78760</b>		RunNo: <b>101155</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3717754</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.1	39.1	146			

Sample ID: <b>lcs-78756</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78756</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720712</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	70	130			
Toluene	0.99	0.050	1.000	0	98.7	70	130			
Ethylbenzene	1.0	0.050	1.000	0	99.8	70	130			
Xylenes, Total	3.0	0.10	3.000	0	99.1	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	39.1	146			

Sample ID: <b>mb-78756</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78756</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/13/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720715</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		97.5	39.1	146			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2311454

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78790</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720764</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	70	130			
Toluene	0.91	0.050	1.000	0	90.5	70	130			
Ethylbenzene	0.92	0.050	1.000	0	92.1	70	130			
Xylenes, Total	2.8	0.10	3.000	0	91.9	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: <b>mb-78790</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78790</b>		RunNo: <b>101220</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>		SeqNo: <b>3720766</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.3	39.1	146			

**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



Environment Testin

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

Sample Log-In Check List

Client Name: Vertex Resources Work Order Number: 2311454 RcptNo: 1
Received By: Tracy Casarrubias 11/9/2023 7:40:00 AM
Completed By: Tracy Casarrubias 11/9/2023 8:30:49 AM
Reviewed By: [Handwritten signature]

Chain of Custody

- 1. Is Chain of Custody complete? Yes [ ] No [x] Not Present [ ]
2. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: [Handwritten signature]

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [x]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/9/23

16. Additional remarks:
Client did not relinquish chain of custod

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 2.9, Good, Yes, Yogi, [ ], [ ]

### Chain-of-Custody Record

Client: Silverback  
 (Nextex)  
 Mailing Address: On file  
 Project Name: Piglet State SWD #1  
 Project #: 23E-05383  
 Project Manager: Chance Dixon  
 Sampler: Fernando Rodriguez  
 On Ice:  Yes  No 40g  
 # of Coolers: 1  
 Cooler Temp (including off): 2.8 to 0.1 = 2.9 °C

Turn-Around Time: Rush 5 DMA  
 Standard  Rush 5 DMA  
 Project Name: Piglet State SWD #1  
 Project #: 23E-05383  
 Project Manager: Chance Dixon  
 Sampler: Fernando Rodriguez  
 On Ice:  Yes  No 40g  
 # of Coolers: 1  
 Cooler Temp (including off): 2.8 to 0.1 = 2.9 °C

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No
11/07/23	8:00	Soil	B-SS23-25 0# 0.5	1, 4oz jar	Ice	001
11/07/23	8:05	Soil	B-SS23-26 0#	1, 4oz jar	Ice	002
11/07/23	8:10	Soil	B-SS23-27 0#	1, 4oz jar	Ice	003
11/07/23	8:15	Soil	B-SS23-28 0#	1, 4oz jar	Ice	004
11/07/23	8:20	Soil	B-SS23-29 0#	1, 4oz jar	Ice	005
11/07/23	8:25	Soil	B-SS23-30 0#	1, 4oz jar	Ice	006
11/07/23	8:30	Soil	B-SS23-31 0#	1, 4oz jar	Ice	007
11/07/23	8:35	Soil	B-SS23-32 0#	1, 4oz jar	Ice	008
11/07/23	8:40	Soil	B-SS23-33 0#	1, 4oz jar	Ice	009
11/07/23	8:45	Soil	B-SS23-34 0#	1, 4oz jar	Ice	010
11/07/23	8:50	Soil	B-SS23-35 0#	1, 4oz jar	Ice	011
11/07/23	8:55	Soil	B-SS23-36 0#	1, 4oz jar	Ice	012

Relinquished by: [Signature] Date: 11/07/23 Time: 12:00  
 Relinquished by: [Signature] Date: 11/19/23 Time: 7:46  
 Received by: [Signature] Date: 11/07/23 Time: 9:45  
 Received by: [Signature] Date: 11/19/23 Time: 7:46



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

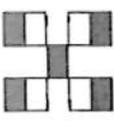
Analysis Request	
TPH:8015D(GRO / DRO / MRO)	<input checked="" type="checkbox"/>
8081 Pesticides/8082 PCBs	<input type="checkbox"/>
EDB (Method 504.1)	<input type="checkbox"/>
PAHs by 8310 or 8270SIMS	<input type="checkbox"/>
RCRA 8 Metals	<input checked="" type="checkbox"/>
F, Br, NO <sub>3</sub> ,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

Remarks: CC: Chance Dixon & Fernando Rodriguez  
 Direct bill to Silverback  
 11/28/23 Per Fernando R. - All sample ID's and depths have been updated. mg

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109  
Tel. 505-345-3975 Fax 505-345-4107



**Chain-of-Custody Record**

Client: Silverback  
 (Vertex)  
 Mailing Address: Onfile  
 Phone #: 23E-05383  
 email or Fax#:   
 QA/QC Package:   
 Standard  Level 4 (Full Validation)  
 Accreditation:  Az Compliance  Other  
 NELAC  Other  
 EDD (Type)   
 Turn-Around Time:   
 Standard  Rush   
 Project Name: Piglet State SWD #1  
 Project #:   
 Project Manager: Chance Dixon  
 Sampler: Fernando Rodriguez  
 On Ice:  Yes  No   
 # of Coolers: 1  
 Cooler Temp (including cpl): 2.9 to 2.9

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/07/23	9:00	Soil	B SS23-37 0ft 0.5	1, 4oz jar	Ice	2311454
11/07/23	9:05	Soil	B SS23-38 0ft	1, 4oz jar	Ice	013
11/07/23	9:10	Soil	B SS23-39 0ft	1, 4oz jar	Ice	014
11/07/23	9:15	Soil	B SS23-40 0ft	1, 4oz jar	Ice	015
11/07/23	9:20	Soil	B SS23-41 0ft	1, 4oz jar	Ice	016
11/07/23	9:25	Soil	B SS23-42 0ft	1, 4oz jar	Ice	017
11/07/23	9:30	Soil	W SS23-43 0ft	1, 4oz jar	Ice	018
11/07/23	9:35	Soil	B SS23-44 0ft	1, 4oz jar	Ice	019
11/07/23	9:40	Soil	B SS23-45 0ft	1, 4oz jar	Ice	020
11/07/23	9:45	Soil	B SS23-46 0ft	1, 4oz jar	Ice	021
11/07/23	9:50	Soil	B SS23-47 0ft	1, 4oz jar	Ice	022
11/07/23	9:55	Soil	W SS23-48 0ft	1, 4oz jar	Ice	023
11/07/23	9:55	Soil		1, 4oz jar	Ice	024

Date: 11/07/23 Time: 17:00 Relinquished by: *[Signature]*  
 Date: 11/09/23 Time: 19:00 Relinquished by: *[Signature]*

Analysis Request

Analysis Request	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
MTEB / TMB's (8021)	X	X	X	X	X	X	X	X	X
(BTEX)	X	X	X	X	X	X	X	X	X

Remarks: CC: Chance Dixon & Fernando Rodriguez  
 Direct bill to Silverback

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



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

November 30, 2023

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

RE: Piglet State SWD 1

OrderNo.: 2311549

Dear Chance Dixon:

Eurofins Environment Testing South Central, LLC received 20 sample(s) on 11/10/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 22, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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

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

Sincerely,

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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-49 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:10:00 AM

**Lab ID:** 2311549-001

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	100	9.4		mg/Kg	1	11/15/2023 9:31:31 AM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 9:31:31 AM
Surr: DNOP	93.5	69-147		%Rec	1	11/15/2023 9:31:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 11:56:00 AM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 11:56:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 11:56:00 AM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 11:56:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 11:56:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 11:56:00 AM
Surr: 4-Bromofluorobenzene	99.0	39.1-146		%Rec	1	11/16/2023 11:56:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2100	60		mg/Kg	20	11/16/2023 6:15:50 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-50 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:05:00 AM

**Lab ID:** 2311549-002

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	120	9.7		mg/Kg	1	11/15/2023 9:56:03 AM
Motor Oil Range Organics (MRO)	150	48		mg/Kg	1	11/15/2023 9:56:03 AM
Surr: DNOP	89.6	69-147		%Rec	1	11/15/2023 9:56:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 1:02:00 PM
Surr: BFB	100	15-244		%Rec	1	11/16/2023 1:02:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 1:02:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 1:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 1:02:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 1:02:00 PM
Surr: 4-Bromofluorobenzene	97.8	39.1-146		%Rec	1	11/16/2023 1:02:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2200	61		mg/Kg	20	11/16/2023 6:28:15 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-51 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:10:00 AM

**Lab ID:** 2311549-003

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	100	9.7		mg/Kg	1	11/15/2023 12:49:57 PM
Motor Oil Range Organics (MRO)	140	49		mg/Kg	1	11/15/2023 12:49:57 PM
Surr: DNOP	103	69-147		%Rec	1	11/15/2023 12:49:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:07:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 2:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:07:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:07:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:07:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 2:07:00 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/16/2023 2:07:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1900	60		mg/Kg	20	11/16/2023 6:40:40 AM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-52 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:15:00 AM

Lab ID: 2311549-004

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	11/15/2023 1:14:58 PM
Motor Oil Range Organics (MRO)	170	49		mg/Kg	1	11/15/2023 1:14:58 PM
Surr: DNOP	96.7	69-147		%Rec	1	11/15/2023 1:14:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 2:28:00 PM
Surr: BFB	97.9	15-244		%Rec	1	11/16/2023 2:28:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:28:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 2:28:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 2:28:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/16/2023 2:28:00 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/16/2023 2:28:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/16/2023 6:53:04 AM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-53 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:20:00 AM

Lab ID: 2311549-005

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	130	9.5		mg/Kg	1	11/15/2023 1:39:50 PM
Motor Oil Range Organics (MRO)	170	47		mg/Kg	1	11/15/2023 1:39:50 PM
Surr: DNOP	90.7	69-147		%Rec	1	11/15/2023 1:39:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 2:50:00 PM
Surr: BFB	97.4	15-244		%Rec	1	11/16/2023 2:50:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 2:50:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 2:50:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 2:50:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 2:50:00 PM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/16/2023 2:50:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1800	60		mg/Kg	20	11/16/2023 7:05:28 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-54 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:25:00 AM

**Lab ID:** 2311549-006

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	89	9.9		mg/Kg	1	11/15/2023 2:04:42 PM
Motor Oil Range Organics (MRO)	130	50		mg/Kg	1	11/15/2023 2:04:42 PM
Surr: DNOP	90.4	69-147		%Rec	1	11/15/2023 2:04:42 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 3:12:00 PM
Surr: BFB	105	15-244		%Rec	1	11/16/2023 3:12:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 3:12:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 3:12:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 3:12:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 3:12:00 PM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/16/2023 3:12:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1700	60		mg/Kg	20	11/15/2023 8:09:17 PM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-55 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:30:00 AM

**Lab ID:** 2311549-007

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	190	9.4		mg/Kg	1	11/15/2023 2:29:38 PM
Motor Oil Range Organics (MRO)	220	47		mg/Kg	1	11/15/2023 2:29:38 PM
Surr: DNOP	101	69-147		%Rec	1	11/15/2023 2:29:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 3:34:00 PM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 3:34:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	11/16/2023 3:34:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 3:34:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 3:34:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/16/2023 3:34:00 PM
Surr: 4-Bromofluorobenzene	96.5	39.1-146		%Rec	1	11/16/2023 3:34:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2300	60		mg/Kg	20	11/15/2023 9:11:20 PM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-56 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:35:00 AM

Lab ID: 2311549-008

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	160	9.7		mg/Kg	1	11/15/2023 2:54:26 PM
Motor Oil Range Organics (MRO)	210	48		mg/Kg	1	11/15/2023 2:54:26 PM
Surr: DNOP	89.0	69-147		%Rec	1	11/15/2023 2:54:26 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 3:55:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 3:55:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 3:55:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 3:55:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 3:55:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 3:55:00 PM
Surr: 4-Bromofluorobenzene	94.4	39.1-146		%Rec	1	11/16/2023 3:55:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	2100	150		mg/Kg	50	11/16/2023 10:37:23 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-57 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:40:00 AM

**Lab ID:** 2311549-009

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	280	9.9		mg/Kg	1	11/15/2023 3:19:17 PM
Motor Oil Range Organics (MRO)	320	49		mg/Kg	1	11/15/2023 3:19:17 PM
Surr: DNOP	103	69-147		%Rec	1	11/15/2023 3:19:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 4:17:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 4:17:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 4:17:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 4:17:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 4:17:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 4:17:00 PM
Surr: 4-Bromofluorobenzene	95.3	39.1-146		%Rec	1	11/16/2023 4:17:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	2300	150		mg/Kg	50	11/16/2023 10:49:47 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-58 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 8:45:00 AM

**Lab ID:** 2311549-010

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	100	9.9		mg/Kg	1	11/15/2023 4:09:07 PM
Motor Oil Range Organics (MRO)	140	50		mg/Kg	1	11/15/2023 4:09:07 PM
Surr: DNOP	94.0	69-147		%Rec	1	11/15/2023 4:09:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/16/2023 4:39:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 4:39:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 4:39:00 PM
Toluene	ND	0.047		mg/Kg	1	11/16/2023 4:39:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/16/2023 4:39:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/16/2023 4:39:00 PM
Surr: 4-Bromofluorobenzene	95.1	39.1-146		%Rec	1	11/16/2023 4:39:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1600	60		mg/Kg	20	11/15/2023 10:13:23 PM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-59 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:50:00 AM

Lab ID: 2311549-011

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	170	9.7		mg/Kg	1	11/15/2023 4:58:16 PM
Motor Oil Range Organics (MRO)	200	49		mg/Kg	1	11/15/2023 4:58:16 PM
Surr: DNOP	98.7	69-147		%Rec	1	11/15/2023 4:58:16 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:22:00 PM
Surr: BFB	97.0	15-244		%Rec	1	11/16/2023 5:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 5:22:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:22:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:22:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 5:22:00 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/16/2023 5:22:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	3000	150		mg/Kg	50	11/16/2023 11:02:12 AM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-60 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 8:55:00 AM

Lab ID: 2311549-012

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	82	9.7		mg/Kg	1	11/15/2023 5:22:58 PM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/15/2023 5:22:58 PM
Surr: DNOP	100	69-147		%Rec	1	11/15/2023 5:22:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 5:44:00 PM
Surr: BFB	103	15-244		%Rec	1	11/16/2023 5:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 5:44:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 5:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 5:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 5:44:00 PM
Surr: 4-Bromofluorobenzene	94.2	39.1-146		%Rec	1	11/16/2023 5:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1200	60		mg/Kg	20	11/15/2023 10:38:12 PM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-61 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 9:00:00 AM

**Lab ID:** 2311549-013

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	190	9.6		mg/Kg	1	11/15/2023 5:47:41 PM
Motor Oil Range Organics (MRO)	220	48		mg/Kg	1	11/15/2023 5:47:41 PM
Surr: DNOP	104	69-147		%Rec	1	11/15/2023 5:47:41 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 6:05:00 PM
Surr: BFB	96.0	15-244		%Rec	1	11/16/2023 6:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:05:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 6:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 6:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/16/2023 6:05:00 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	11/16/2023 6:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2100	60		mg/Kg	20	11/15/2023 11:15:26 PM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-62 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:05:00 AM

Lab ID: 2311549-014

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	75	9.7		mg/Kg	1	11/15/2023 6:12:24 PM
Motor Oil Range Organics (MRO)	100	49		mg/Kg	1	11/15/2023 6:12:24 PM
Surr: DNOP	94.3	69-147		%Rec	1	11/15/2023 6:12:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/16/2023 6:27:00 PM
Surr: BFB	99.5	15-244		%Rec	1	11/16/2023 6:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 6:27:00 PM
Toluene	ND	0.048		mg/Kg	1	11/16/2023 6:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/16/2023 6:27:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/16/2023 6:27:00 PM
Surr: 4-Bromofluorobenzene	93.2	39.1-146		%Rec	1	11/16/2023 6:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1900	60		mg/Kg	20	11/15/2023 11:27:51 PM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-63 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 9:10:00 AM

**Lab ID:** 2311549-015

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	100	9.4		mg/Kg	1	11/15/2023 6:37:07 PM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 6:37:07 PM
Surr: DNOP	92.8	69-147		%Rec	1	11/15/2023 6:37:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 6:49:00 PM
Surr: BFB	98.5	15-244		%Rec	1	11/16/2023 6:49:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 6:49:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 6:49:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 6:49:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 6:49:00 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 6:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	2200	150		mg/Kg	50	11/16/2023 11:14:37 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-64 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 9:15:00 AM

**Lab ID:** 2311549-016

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	97	9.4		mg/Kg	1	11/15/2023 7:01:51 PM
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/15/2023 7:01:51 PM
Surr: DNOP	97.8	69-147		%Rec	1	11/15/2023 7:01:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:10:00 PM
Surr: BFB	98.6	15-244		%Rec	1	11/16/2023 7:10:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 7:10:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:10:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 7:10:00 PM
Surr: 4-Bromofluorobenzene	93.5	39.1-146		%Rec	1	11/16/2023 7:10:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1800	60		mg/Kg	20	11/15/2023 11:52:40 PM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-65 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:20:00 AM

Lab ID: 2311549-017

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	210	9.4		mg/Kg	1	11/15/2023 7:26:35 PM
Motor Oil Range Organics (MRO)	250	47		mg/Kg	1	11/15/2023 7:26:35 PM
Surr: DNOP	99.6	69-147		%Rec	1	11/15/2023 7:26:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 7:32:00 PM
Surr: BFB	98.6	15-244		%Rec	1	11/16/2023 7:32:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.024		mg/Kg	1	11/16/2023 7:32:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 7:32:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 7:32:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/16/2023 7:32:00 PM
Surr: 4-Bromofluorobenzene	93.6	39.1-146		%Rec	1	11/16/2023 7:32:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SNS
Chloride	3600	150		mg/Kg	50	11/16/2023 11:27:01 AM

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

<b>Qualifiers:</b>	* 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 2311549

Date Reported: 11/30/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS23-66 0.5ft

Project: Piglet State SWD 1

Collection Date: 11/8/2023 9:25:00 AM

Lab ID: 2311549-018

Matrix: SOIL

Received Date: 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: PRD
Diesel Range Organics (DRO)	90	9.6		mg/Kg	1	11/15/2023 8:15:46 PM
Motor Oil Range Organics (MRO)	110	48		mg/Kg	1	11/15/2023 8:15:46 PM
Surr: DNOP	85.2	69-147		%Rec	1	11/15/2023 8:15:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 7:54:00 PM
Surr: BFB	101	15-244		%Rec	1	11/16/2023 7:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: KMN
Benzene	ND	0.025		mg/Kg	1	11/16/2023 7:54:00 PM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 7:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 7:54:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/16/2023 7:54:00 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/16/2023 7:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: RBC
Chloride	1600	60		mg/Kg	20	11/16/2023 12:17:30 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-67 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 9:30:00 AM

**Lab ID:** 2311549-019

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	140	9.4		mg/Kg	1	11/15/2023 8:40:20 PM
Motor Oil Range Organics (MRO)	170	47		mg/Kg	1	11/15/2023 8:40:20 PM
Surr: DNOP	91.5	69-147		%Rec	1	11/15/2023 8:40:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/16/2023 8:16:00 PM
Surr: BFB	97.7	15-244		%Rec	1	11/16/2023 8:16:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 8:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/16/2023 8:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/16/2023 8:16:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	94.9	39.1-146		%Rec	1	11/16/2023 8:16:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	2200	60		mg/Kg	20	11/16/2023 12:29:55 AM

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

<b>Qualifiers:</b>	* 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 **2311549**

Date Reported: **11/30/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-68 0.5ft

**Project:** Piglet State SWD 1

**Collection Date:** 11/8/2023 9:35:00 AM

**Lab ID:** 2311549-020

**Matrix:** SOIL

**Received Date:** 11/10/2023 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	82	9.5		mg/Kg	1	11/15/2023 9:04:47 PM
Motor Oil Range Organics (MRO)	100	48		mg/Kg	1	11/15/2023 9:04:47 PM
Surr: DNOP	79.0	69-147		%Rec	1	11/15/2023 9:04:47 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/16/2023 8:37:00 PM
Surr: BFB	102	15-244		%Rec	1	11/16/2023 8:37:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	11/16/2023 8:37:00 PM
Toluene	ND	0.050		mg/Kg	1	11/16/2023 8:37:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/16/2023 8:37:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/16/2023 8:37:00 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	11/16/2023 8:37:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>RBC</b>
Chloride	1800	60		mg/Kg	20	11/16/2023 12:42:20 AM

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

<b>Qualifiers:</b>	* 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#: 2311549

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78817</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78817</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/16/2023</b>	SeqNo: <b>3720765</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	30								

Sample ID: <b>LCS-78817</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78817</b>	RunNo: <b>101219</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/16/2023</b>	SeqNo: <b>3720767</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID: <b>MB-78835</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78835</b>	RunNo: <b>101209</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3721143</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-78835</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78835</b>	RunNo: <b>101209</b>								
Prep Date: <b>11/15/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3721144</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.1	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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2311549

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>MB-78793</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78793</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3719024</b>	Units: <b>mg/Kg</b>							
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	9.9		10.00		99.3	69	147			

Sample ID: <b>LCS-78793</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78793</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3719025</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	50	10	50.00	0	100	61.9	130			
Surr: DNOP	4.4		5.000		88.2	69	147			

Sample ID: <b>2311549-020AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-68 0.5ft</b>	Batch ID: <b>78793</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720891</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	120	9.6	48.22	81.74	87.5	54.2	135			
Surr: DNOP	4.6		4.822		94.8	69	147			

Sample ID: <b>2311549-020AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-68 0.5ft</b>	Batch ID: <b>78793</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720892</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	120	9.6	48.08	81.74	72.0	54.2	135	6.33	29.2	
Surr: DNOP	4.5		4.808		93.2	69	147	0	0	

Sample ID: <b>MB-78785</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>78785</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720894</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP	11		10.00		106	69	147			
------------	----	--	-------	--	-----	----	-----	--	--	--

Sample ID: <b>LCS-78785</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78785</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720895</b>	Units: <b>%Rec</b>							
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#: 2311549

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>LCS-78785</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>78785</b>	RunNo: <b>101178</b>								
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/15/2023</b>	SeqNo: <b>3720895</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.7	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#: 2311549

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78788</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723560</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	70	130			
Surr: BFB	2200		1000		217	15	244			

Sample ID: <b>mb-78788</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723561</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	15	244			

Sample ID: <b>2311549-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-49 0.5ft</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723563</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.56	0	100	70	130			
Surr: BFB	2200		982.3		228	15	244			

Sample ID: <b>2311549-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-49 0.5ft</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723564</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.51	0	103	70	130	2.09	20	
Surr: BFB	2200		980.4		228	15	244	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical 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#: 2311549

30-Nov-23

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

**Project:** Piglet State SWD 1

Sample ID: <b>ics-78788</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723511</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.5	70	130			
Toluene	0.93	0.050	1.000	0	93.4	70	130			
Ethylbenzene	0.96	0.050	1.000	0	96.2	70	130			
Xylenes, Total	2.9	0.10	3.000	0	95.8	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.0	39.1	146			

Sample ID: <b>mb-78788</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723512</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: <b>2311549-002ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-50 0.5ft</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723515</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9775	0	90.9	70	130			
Toluene	0.91	0.049	0.9775	0	93.2	70	130			
Ethylbenzene	0.93	0.049	0.9775	0	95.4	70	130			
Xylenes, Total	2.8	0.098	2.933	0	94.9	70	130			
Surr: 4-Bromofluorobenzene	0.92		0.9775		94.2	39.1	146			

Sample ID: <b>2311549-002amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-50 0.5ft</b>	Batch ID: <b>78788</b>		RunNo: <b>101268</b>							
Prep Date: <b>11/14/2023</b>	Analysis Date: <b>11/16/2023</b>		SeqNo: <b>3723516</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9852	0	88.8	70	130	1.51	20	
Toluene	0.90	0.049	0.9852	0	91.3	70	130	1.25	20	
Ethylbenzene	0.92	0.049	0.9852	0	93.5	70	130	1.16	20	
Xylenes, Total	2.8	0.099	2.956	0	93.1	70	130	1.11	20	
Surr: 4-Bromofluorobenzene	0.93		0.9852		94.5	39.1	146	0	0	

**Qualifiers:**

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



Environment Testin

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

### Sample Log-In Check List

Client Name: Vertex Resources      Work Order Number: 2311549      RcptNo: 1  
Received By: Juan Rojas      11/10/2023 7:50:00 AM      *Juan Rojas*  
Completed By: Tracy Casarrubias      11/10/2023 8:24:27 AM  
Reviewed By: DAD      11/10/23

**Chain of Custody**

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

**Log In**

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

# of preserved bottles checked for pH:  
(<2 or >12 unless noted)  
Adjusted?  
Checked by: *JW 11/10/23*

**Special Handling (if applicable)**

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

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
 By Whom: \_\_\_\_\_ Via:  eMail  Phone  Fax  In Person  
 Regarding: \_\_\_\_\_  
 Client Instructions: Mailing address, phone number, and Email/Fax are missing on COC- TMC 11/10/23

16. Additional remarks:

**17. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Yes	Yogi		

# Chain-of-Custody Record

Client: Silverback  
 (Vertex)  
 Mailing Address: On file

Turn-Around Time:  
 Standard  Rush 5 Day  
 Project Name: Piglet State SWD #1

Project #: 23E-05383  
 Project Manager: Chance Dixon

Sampler: Fernando Rodriguez  
 On Ice:  Yes  No

# of Coolers: 4  
 Cooler Temp (including CF): 4.3 to 1.5 to 4.4

Container Type and #  
 Preservative Type  
 HEAL No. 231549

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/08/23	8:00	Soil	B-SS23-49 -ft 0.5	1, 4oz jar	Ice	001
11/08/23	8:05	Soil	B-SS23-50 -ft	1, 4oz jar	Ice	002
11/08/23	8:10	Soil	B-SS23-51 -ft	1, 4oz jar	Ice	003
11/08/23	8:15	Soil	B-SS23-52 -ft	1, 4oz jar	Ice	004
11/08/23	8:20	Soil	B-SS23-53 -ft	1, 4oz jar	Ice	005
11/08/23	8:25	Soil	B-SS23-54 -ft	1, 4oz jar	Ice	006
11/08/23	8:30	Soil	B-SS23-55 -ft	1, 4oz jar	Ice	007
11/08/23	8:35	Soil	B-SS23-56 -ft	1, 4oz jar	Ice	008
11/08/23	8:40	Soil	B-SS23-57 -ft	1, 4oz jar	Ice	009
11/08/23	8:45	Soil	B-SS23-58 -ft	1, 4oz jar	Ice	010
11/08/23	8:50	Soil	B-SS23-59 -ft	1, 4oz jar	Ice	011
11/08/23	8:55	Soil	B-SS23-60 -ft	1, 4oz jar	Ice	012

QA/QC Package:  Standard  Level 4 (Full Validation)  
 Accreditation:  Az Compliance  Other  
 NELAC  Other  
 EDD (Type):

Received by: [Signature] Date: 11/8/23 Time: 17:00  
 Relinquished by: [Signature] Date: 11/9/23 Time: 19:00

Analysis Request	
TPH:8015D(GRO / DRO / MRO)	X
8081 Pesticides/8082 PCBs	X
EDB (Method 504.1)	X
PAHs by 8310 or 8270SIMS	X
RCRA 8 Metals	X
F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	X
8260 (VOA)	X
8270 (Semi-VOA)	X
Total Coliform (Present/Absent)	X

Remarks: CC: Chance Dixon & Fernando Rodriguez  
 Bill to Silverback  
 11/28/23 Per Fernando R. - All sample ID's and depths have been updated. mg

# Chain-of-Custody Record

Client: Silverback  
 (Vertex)  
 Mailing Address: On file

Turn-Around Time:  
 Standard  Rush  *ORAM*

Project Name: Piglet State SWD #1

Project #: *23E-053883*

Project Manager:  
*Chance Dixon*

Sampler: Fernando Rodriguez

On Ice:  Yes  No

# of Coolers: *1*

Cooler Temp (including CFI): *4.2 to 4.4*

Container Type and #

Preservative Type

HEAL No. *2311549*

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCBs

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

CF, Br, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Analysis Request

BTEx / TMB's (8021)

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

Received by: *[Signature]* Date: *11/18/23* Time: *9:00*

Relinquished by: *[Signature]*

Received by: *[Signature]* Date: *11/18/23* Time: *7:50*

Relinquished by: *[Signature]*

Remarks: *CC: Chance Dixon & Fernando Rodriguez*

*Direct bill to Silverback*

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.



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

May 31, 2024

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: PIGLET STATE SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 05/28/24 10:16.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 01 0FT (H242938-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44	
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47	
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98	
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92	
Total BTEX	<0.300	0.300	05/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	05/31/2024	ND	448	112	400	3.51	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477	
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910	
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND					

Surrogate: 1-Chlorooctane 71.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 01 2FT (H242938-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 79.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 02 OFT (H242938-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.7 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 81.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.8 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 02 2FT (H242938-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 72.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 03 OFT (H242938-05)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 72.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 03 2FT (H242938-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 74.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 04 OFT (H242938-07)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 79.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.7 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 04 2FT (H242938-08)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.94	96.8	2.00	2.44		
Toluene*	<0.050	0.050	05/30/2024	ND	1.88	94.2	2.00	2.47		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.90	95.0	2.00	2.98		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.49	91.6	6.00	2.92		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 87.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 05 OFT (H242938-09)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 92.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 05 2FT (H242938-10)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 06 OFT (H242938-11)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 75.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 06 2FT (H242938-12)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 75.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 07 OFT (H242938-13)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 84.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.6 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 07 2FT (H242938-14)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/29/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/29/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/29/2024	ND						

Surrogate: 1-Chlorooctane 81.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.1 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 08 OFT (H242938-15)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/30/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/30/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/30/2024	ND						

Surrogate: 1-Chlorooctane 76.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

VERTEX RESOURCE GROUP  
 CHANCE DIXON  
 420 SOUTH MAIN, SUITE 202  
 TULSA OK, 74103  
 Fax To: NA

Received:	05/28/2024	Sampling Date:	05/23/2024
Reported:	05/31/2024	Sampling Type:	Soil
Project Name:	PIGLET STATE SWD #1	Sampling Condition:	Cool & Intact
Project Number:	23E - 05383	Sample Received By:	Alyssa Parras
Project Location:	SILVERBACK EXP - EDDY CO NM		

**Sample ID: BH24 - 08 2FT (H242938-16)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/30/2024	ND	1.76	87.8	2.00	3.88		
Toluene*	<0.050	0.050	05/30/2024	ND	1.77	88.7	2.00	3.81		
Ethylbenzene*	<0.050	0.050	05/30/2024	ND	1.75	87.4	2.00	4.38		
Total Xylenes*	<0.150	0.150	05/30/2024	ND	5.46	91.0	6.00	4.47		
Total BTEX	<0.300	0.300	05/30/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/30/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/30/2024	ND	213	106	200	0.477		
DRO >C10-C28*	<10.0	10.0	05/30/2024	ND	194	97.2	200	0.910		
EXT DRO >C28-C36	<10.0	10.0	05/30/2024	ND						

Surrogate: 1-Chlorooctane 72.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.8 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- BS-3 Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**Company Name:** Vertex Resource Services  
**Project Manager:** Chance Dixon  
**Address:** 3101 Boyd Dr  
**City:** Carlsbad **State:** NM **Zip:** 88220  
**Phone #:** 575-988-1472 **Fax #:**  
**Project #:** 23E-05383 **Project Owner:**  
**Project Name:** Piglet State SWD #1  
**Project Location:** Eddy County, NM  
**Sampler Name:** F. Rodriguez

**BILL TO**  
**P.O. #:**  
**Company:** Silverback Exploration  
**Attn:** Mark Ritchie  
**Address:** 108 S. 4th St.  
**City:** Artesia  
**State:** NM **Zip:** 88210  
**Phone #:**  
**Fax #:**

**ANALYSIS REQUEST**

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	TPH: (8015) EXT	BTEX (8021B)	Chloride (SM 4500)
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :							
BH24-01 0H	BH24-01 0H	C	1	X							5/23/24	10:00	X	X	X	
BH24-01 2H	BH24-01 2H	C	1	X							5/23/24	10:05	X	X	X	
BH24-02 0H	BH24-02 0H	C	1	X							5/23/24	10:10	X	X	X	
BH24-02 2H	BH24-02 2H	C	1	X							5/23/24	10:15	X	X	X	
BH24-03 0H	BH24-03 0H	C	1	X							5/23/24	10:20	X	X	X	
BH24-03 2H	BH24-03 2H	C	1	X							5/23/24	10:25	X	X	X	
BH24-04 0H	BH24-04 0H	C	1	X							5/23/24	10:30	X	X	X	
BH24-04 2H	BH24-04 2H	C	1	X							5/23/24	10:35	X	X	X	
BH24-05 0H	BH24-05 0H	C	1	X							5/23/24	10:40	X	X	X	
BH24-05 2H	BH24-05 2H	C	1	X							5/23/24	10:45	X	X	X	
BH24-06 0H	BH24-06 0H	C	1	X							5/23/24	10:50	X	X	X	
BH24-06 2H	BH24-06 2H	C	1	X							5/23/24	10:55	X	X	X	
BH24-07 0H	BH24-07 0H	C	1	X							5/23/24	11:00	X	X	X	

**Relinquished By:** [Signature] **Date:** 5/28/24 **Time:** 10:10  
**Received By:** [Signature] **Date:** 5/28/24 **Time:** 11:00

**Delivered By:** (Circle One) **Sample Condition:** Cool Intact  
 Yes  No **Checked By:** (Initials) AD

**Sample:** HPS - Bus - Other: HLD  Yes  No

**REMARKS:** Direct bill to Silverback Exploration  
 Email results to: cdixon@vertex.ca & frodriguez@vertex.ca



101 East Marland, Hobbs, NM 88240  
 (575) 393-2326 FAX (575) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

<b>Company Name:</b> Vertex Resource Services <b>Project Manager:</b> Chance Dixon		<b>P.O. #:</b> <b>Company:</b> Silverback Exploration <b>Attn:</b> Mark Ritchie <b>Address:</b> 108 S. 4th St.	
<b>Address:</b> 3101 Boyd Dr <b>City:</b> Carlsbad <b>State:</b> NM <b>Zip:</b> 88220		<b>Project #:</b> 23E-05383 <b>Project Owner:</b>	
<b>Phone #:</b> 575-988-1472 <b>Fax #:</b>		<b>City:</b> Artesia <b>State:</b> NM <b>Zip:</b> 88210	
<b>Project Name:</b> Piglet State SWD #1 <b>Project Location:</b> Eddy County, NM		<b>Phone #:</b> <b>Fax #:</b>	
<b>Sampler Name:</b> F. Rodriguez		<b>FOR LAB USE ONLY</b>	

Lab I.D.	Sample I.D.	(GRAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	ANALYSIS REQUEST		
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:			ICE / COOL	OTHER :	TPH: (8015) EXT
BH24-07 2H	BH24-07 2H	C	1	X							5/23/24	11:05	X	X	X
BH24-08 0H	BH24-08 0H	C	1	X							5/23/24	11:10	X	X	X
BH24-08 2H	BH24-08 2H	C	1	X							5/23/24	11:15	X	X	X

PLEASE NOTE: Liability and Damages: Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated remedies or otherwise.

<b>Relinquished By:</b> Date: 5/28/24 Time: 10:10 Received By: [Signature]	<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #: <b>REMARKS:</b>
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Direct bill to Silverback Exploration  
 Email results to: cdixon@vertex.ca & frodriguez@vertex.ca

Delivered By: (Circle One) 4.91c  
 Sample: URS - Other: 114D  
 Checked By: [Signature]

Sample Condition: Cool  Intact  Yes  No  No

3. Please fax written changes to 575-393-2476

## **APPENDIX F – Depth to Groundwater Drilling**

Owner's Name: STANDARD SAFETY Owner Well #: P16LETT

Owners Street or RFD: \_\_\_\_\_ Latitude: 32.820469

Owners City: \_\_\_\_\_ Longitude: -104.179961

Owners State: \_\_\_\_\_ Elevation: \_\_\_\_\_

Owners Zip Code: \_\_\_\_\_ GPS Brand Used: GARMIN / MAGELLAN

Wells Street or RFD: 17.5 MILES WEST OF RED LAKE RD. Type of Work: (circle one)  New Well

Well County: EDDY  Deepening

Well's City: ARTESIA  Reconditioning

Well's Zip Code: \_\_\_\_\_  Replacement

Proposed Use: (circle one)	Monitor Industrial <u>Environmental Soil Boring</u> De-Watering	Irrigation Public Supply Domestic Injection	Geothermal Heat Loop Test well Rig Supply Stock	If public supply were plans approved by TCEQ? Yes No
-------------------------------	--------------------------------------------------------------------------	------------------------------------------------------	----------------------------------------------------------	---------------------------------------------------------------

Drilling Start Date: 1-18-24

Drilling Completion Date: 1-18-24

Diameter of Hole: 6 7/8 in. From: 0 To: 55

Diameter of Hole: \_\_\_\_\_ in. From: \_\_\_\_\_ To: \_\_\_\_\_

Diameter of Hole: \_\_\_\_\_ in. From: \_\_\_\_\_ To: \_\_\_\_\_

Description & color of formation materials

From	To	Description
0	1	CALICHI PAD
1	5	BROKEN <del>AND</del> CALICHI
5	20	TAN SAND
20	30	TAN SAND STONE
30	55	RED SAND STONE

(circle one)

Bored

Hollow Stem Auger

Air Rotary

Cable Tool

Other:

Borehole Completion: (circle one)

Open Hole

Straight Wall

Other

Underreamed

Gravel Packed:

from:

to:

with:

Casing, Blank Pipe & Well Screen Data:

Dia (in)	New or Used	Steel, Plastic, Perf., Screen, Slotted, Mfg., if commercial	Setting (ft) From/To	Gauge Casing Screen

Annular Seal Data:

From \_\_\_\_\_ ft. To: \_\_\_\_\_ ft.  
 Number of sacks & material used: PLUGGED 22 BAGS HOLE PLUG

From \_\_\_\_\_ ft. To: \_\_\_\_\_ ft.  
 Number of sacks & material used: \_\_\_\_\_

Method Used: \_\_\_\_\_ Cemented By: \_\_\_\_\_

Distance to Septic Field or other Concentrated Contamination \_\_\_\_\_

Distance to Property Line: \_\_\_\_\_ Method of Verification: \_\_\_\_\_

Surface Completion: (circle one)

Surface Slab Installed

Pitless Adapter Used

Surface Sleeve Installed

Alternative Procedure Used

Static Level below land surface: \_\_\_\_\_ ft. Date: \_\_\_\_\_

Artesian Flow: \_\_\_\_\_ GPM

Packers	Type	Depth	Was Chemical analysis made:	Yes	No
			Did you knowingly penetrate any strata which contains undesirable constituents?:	Yes	No

Plugged: well plugged within 48 hrs?	Casing left in well		Cement/Bentonite placed in well:		
	from (ft)	to (ft)	from (ft)	to (ft)	cement/bentonite - no. of sacks

Type of Pump: (circle one)

Turbine

Jet

Submersible

Cylinder

Depth to pump bowl: \_\_\_\_\_ ft.

Well Test Types: (circle one)

Pump

Bailer

Jetted

Estimated

Yield \_\_\_\_\_ GPM

with (ft.) \_\_\_\_\_ drawdown after \_\_\_\_\_ hrs.

Type of Water: \_\_\_\_\_

Depth of Strata: \_\_\_\_\_ ft.

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

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

QUESTIONS

Action 355458

**QUESTIONS**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nAPP2327744458
Incident Name	NAPP2327744458 PIGLET STATE SWD #001 @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

**Location of Release Source**

Please answer all the questions in this group.

Site Name	Piglet State SWD #001
Date Release Discovered	10/02/2023
Surface Owner	State

**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	Yes
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: Lightning   Tank (Any)   Produced Water   Released: 1,200 BBL   Recovered: 1,000 BBL   Lost: 200 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.

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

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

QUESTIONS, Page 2

Action 355458

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>Yes</b>
Reasons why this would be considered a submission for a notification of a major release	<b>From paragraph A. "Major release" determine using:                  (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more;                  (2) an unauthorized release of a volume that:                  (a) results in a fire or is the result of a fire.</b>

*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: Heather Treffert Title: Field Operations Analyst Email: htreffert@silverbackexp.com Date: 06/18/2024
----------------------------------------------------	---------------------------------------------------------------------------------------------------------------------

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID:	330968
	Action Number:	355458
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Site Characterization**  
*Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Greater than 1000 (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
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between ½ and 1 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 500 and 1000 (ft.)
Any other fresh water well or spring	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

*Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

Requesting a remediation plan approval with this submission	Yes
<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)	18000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	1100
GRO+DRO (EPA SW-846 Method 8015M)	600
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

*Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.*

On what estimated date will the remediation commence	10/09/2023
On what date will (or did) the final sampling or liner inspection occur	05/24/2024
On what date will (or was) the remediation complete(d)	05/24/2024
What is the estimated surface area (in square feet) that will be reclaimed	72864
What is the estimated volume (in cubic yards) that will be reclaimed	5960
What is the estimated surface area (in square feet) that will be remediated	11920
What is the estimated volume (in cubic yards) that will be remediated	5960

*These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.*

*The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.*

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

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

QUESTIONS, Page 4

Action 355458

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	LEA LAND LANDFILL [fEEM0112342028]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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

I hereby agree and sign off to the above statement	Name: Heather Treffert Title: Field Operations Analyst Email: htreffert@silverbackexp.com Date: 06/18/2024
----------------------------------------------------	---------------------------------------------------------------------------------------------------------------------

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 5

Action 355458

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Deferral Requests Only</b>	
<i>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.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 6

Action 355458

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	<b>345936</b>
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	<b>05/24/2024</b>
What was the (estimated) number of samples that were to be gathered	<b>8</b>
What was the sampling surface area in square feet	<b>1600</b>

<b>Remediation Closure Request</b>	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	<b>Yes</b>
Have the lateral and vertical extents of contamination been fully delineated	<b>Yes</b>
Was this release entirely contained within a lined containment area	<b>No</b>
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	<b>Yes</b>
What was the total surface area (in square feet) remediated	<b>11920</b>
What was the total volume (cubic yards) remediated	<b>5960</b>
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	<b>Yes</b>
What was the total surface area (in square feet) reclaimed	<b>72864</b>
What was the total volume (in cubic yards) reclaimed	<b>5960</b>
Summarize any additional remediation activities not included by answers (above)	<b>N/A</b>

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

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

I hereby agree and sign off to the above statement	Name: Heather Treffert Title: Field Operations Analyst Email: htreffert@silverbackexp.com Date: 06/18/2024
----------------------------------------------------	---------------------------------------------------------------------------------------------------------------------

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 7

Action 355458

**QUESTIONS (continued)**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	No

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 355458

**CONDITIONS**

Operator: Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256	OGRID: 330968
	Action Number: 355458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**CONDITIONS**

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2327744458 PIGLET STATE SWD #001, thank you. This Remediation Closure Report is approved.	6/28/2024