

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	nAPP2218654480
District RP	
Facility ID	
Application ID	

## Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Chase Settle Title: Rep Safety and Environmental  
Signature: Chase Settle Date: 01/18/2023  
email: chase\_settle@eogresources.com Telephone: 575-748-4171

**OCD Only**

Received by: Robert Hamlet Date: 5/18/2023

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

Closure Approved by: Robert Hamlet Date: 5/18/2023  
Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced



January 18, 2023

Vertex Project #: 22E-00716-10

**Spill Closure Report:** Routh Deep SWD #2 (Section 14, Township 19 South, Range 24 East)  
API: 30-015-23585  
County: Eddy  
Incident ID: nAPP2218654480

**Prepared For:** EOG Resources, Inc.  
104 South 4<sup>th</sup> Street  
Artesia, NM 88210

**New Mexico Oil Conservation Division - District 2**

811 South 1<sup>st</sup> Street  
Artesia, New Mexico 88210

EOG Resources, Inc. retained Vertex Resource Services Inc. (Vertex) to conduct an assessment for a historical contamination discovered during the battery decommissioning at the Routh Deep SWD #2, API 30-015-23585, incident nAPP2218654480 (hereafter referred to as "Routh"). This letter provides a description of the Site Assessment and includes a request for Incident Closure.

**Background**

The site is located at N 32.66643, W -104.55615 approximately 9 miles northwest of Seven Rivers, New Mexico on private property. The legal location for the site is Section 14, Township 19 South and Range 24 East in Eddy County, New Mexico. An aerial photograph and site schematic are included in Figure 1 and 2, Attachment 1.

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2014 – 2017) indicates the site's surface geology is comprised primarily of Qp - Piedmont alluvial deposits (Holocene to lower Pleistocene). Predominant soil texture on the site is Loamy. Ecological settings of the area include vegetation of black grama, tobosa, bunch grasses, threeawns, soap tree yucca, ephedra, fourwing saltbush, with other forbs subdominant.

There is no surface water located at Routh. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 New Mexico Administrative Code (NMAC), is the Pecos River located approximately 14.7 miles southeast of 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.

**Incident Description**

The impacts were reported on June 30, 2022, due to historical contamination discovered in the storage tank area as well as on the production pad. Laboratory analysis for vertical delineation is included in Table 2, Attachment 2. The New Mexico Oil Conservation Division (NMOCD) C-141 Report is included in Attachment 3 and the daily field reports with site photographs are included in Attachment 4.

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EOG Resources, Inc.  
Routh SWD Tank Battery

2022 Spill Assessment and Closure  
August 2022

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## 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 drilled to a depth of 108 feet, was left open as per requirements on the WR-07 Application for Permit to Drill a Well With No Water Right and an interface probe lowered into the bottom of the borehole to investigate if groundwater may have accumulated during the 72 hour waiting period. No water was found present at that time. The borehole was then plugged as per requirements on the WR-08, Well Plugging Plan of Operations. Documentation used in Closure Criteria Determination research is included in Attachment 5.

EOG Resources, Inc.  
Routh SWD Tank Battery

2022 Spill Assessment and Closure  
August 2022

Closure Criteria Worksheet			
Site Name: Routh SWD			
Spill Coordinates:		X: 32.666419	Y: -104.556698
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	>108	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	77,590	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	59,872	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	12,714	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, <b>or</b>	5,918	feet
	ii) Within 1000 feet of any fresh water well or spring	5,918	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	1,609	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	Nondetermined	year
11	Soil Type	Upton-Reagan complex	
12	Ecological Classification	Loamy	
13	Geology	Qp	
vertex.ca	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	>100'	<50' 51-100' >100'



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

<b>Table 1. Closure Criteria for Soils to Remediation &amp; Reclamation Standards</b>		
	<b>Constituent</b>	<b>Limit</b>
0-4 feet bgs (19.15.29.13)	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
DTGW > 100 feet (19.15.29.12)	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics, BTEX – benzene, toluene, ethylbenzene and xylenes

## Remedial Actions Taken

Remediation efforts began on June 14, 2022, and were completed on September 19, 2022. Delineation was completed during the remediation process. Vertex personnel supervised the excavation of impacted soils with field screening on a total of 254 sample points which consisted of analysis using a photo ionization detector (volatile hydrocarbons), Dextil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons), and titration (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth ranging from 4 feet to 10 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Field screening and laboratory analysis results are presented in Table 3, Attachment 2.

During remediation efforts on the southernmost sidewall of the excavation, composite sample points WES08, WES09 and WES10 were collected from 0 to 4 feet bgs and represent an area no greater than 150 feet by 4 feet equaling 600 square feet total. These sample points meet the strictest criteria for horizontal delineation of the excavation under Table 1 of 19.15.29.12 NMAC. Composite sample points WES17 and WES18 were additionally collected from 4 to 9 feet bgs on the southernmost side wall of the excavation and account for an 80 foot by 5 foot area totaling 400 square feet respectively. WES17 and WES18 are under closure criteria for a depth of 4 feet bgs and greater, while WES08, WES09 and WES10 on the same side wall meet the strictest criteria in the top 4 feet as outlined in 19.15.29.13 NMAC Reclamation Standards.

This site has been decommissioned with reclamation activities to follow the completed remediation. The northernmost side wall located at the edge of the historic drilling pit will be addressed concurrently with the reclamation. This sidewall will be sloped to a 45-degree angle to allow for the placement of a geosynthetic clay liner (GCL) which will be installed over the surface area of the pit to address the field screen results from the sidewall that were above criterium. Placement of a GCL over the top of the historical drill pit and down the sloped sidewall will effectively segregate the remediated area and prevent migration of any further impacts from the pit. The GCL will provide protection of impact

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migration through the vadose zone with the sloped sidewall assisting any shedding of excess water that may accumulate through natural precipitation events.

Notification that confirmatory samples were being collected was provided to the NMOCD on July 21, 2022, July 29, 2022, August 4, 2022, August 11, 2022, August 18, 2022, August 25, 2022, and September 15, 2022. The notifications are all included in Attachment 6. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 254 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 3, Attachment 2 and the laboratory data report can be found in Attachment 7. All confirmatory samples collected and analyzed were below closure criteria for the site.

### Closure Request

The impacted area was fully delineated, remediated and will be backfilled with local soils. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a Release locations “greater than 100 feet to groundwater”. Based on these findings, EOG Resources, Inc. requests closure of Incident nAPP2218654480.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.988.2681 or mmoffitt@vertex.ca.

  
Michael Moffitt, B.Sc.  
PROJECT MANAGER, REPORTING

1/18/2023  
Date

### Attachments

- Attachment 1. Figures
- Attachment 2. Tables
- Attachment 3. NMOCD C-141
- Attachment 4. Daily Field Reports with Pictures
- Attachment 5. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 6. Confirmatory Sample Notifications
- Attachment 7. Laboratory Data Reports and COCs

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## References

- Google Inc. (2022). *Google Earth Pro* (Version 7.3.4) [Software]. Retrieved from <http://www.google.com/earth> on September 1, 2022.
- New Mexico Bureau of Geology and Mineral Resources. (2022). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>.
- New Mexico Mining and Minerals Division. (2022). *Coal Mine Resources in New Mexico*. Retrieved from <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>
- New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.
- New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2022). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>
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- United States Fish and Wildlife Service. (2022). *National Wetlands Inventory Surface Waters and Wetland*. Retrieved from <https://www.fws.gov/wetlands/data/Mapper.html>.

**EOG Resources, Inc.**  
Routh SWD Tank Battery

**2022 Spill Assessment and Closure**  
August 2022

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## **Limitations**

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

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

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## **ATTACHMENT 1**

Document Path: G:\1-Projects\US PROJECTS\EOG Resources Inc\22E-00716 (Howell Ranch Reclamation Projects)\010 - Routh SWD Tank Battery\Figure 1 Characterization Schematic (22E-00716).mxd



◆ Borehole    ■ Testpit    [ ] Approximated Lease Boundary



0 12.5 25 50 ft  
NAD 1983 UTM Zone 13N  
Date: Sep 29/22

Map Center:  
Lat: 32.666419,  
Long: -104.556675



### Characterization Schematic Routh Deep SWD #2

FIGURE:

1



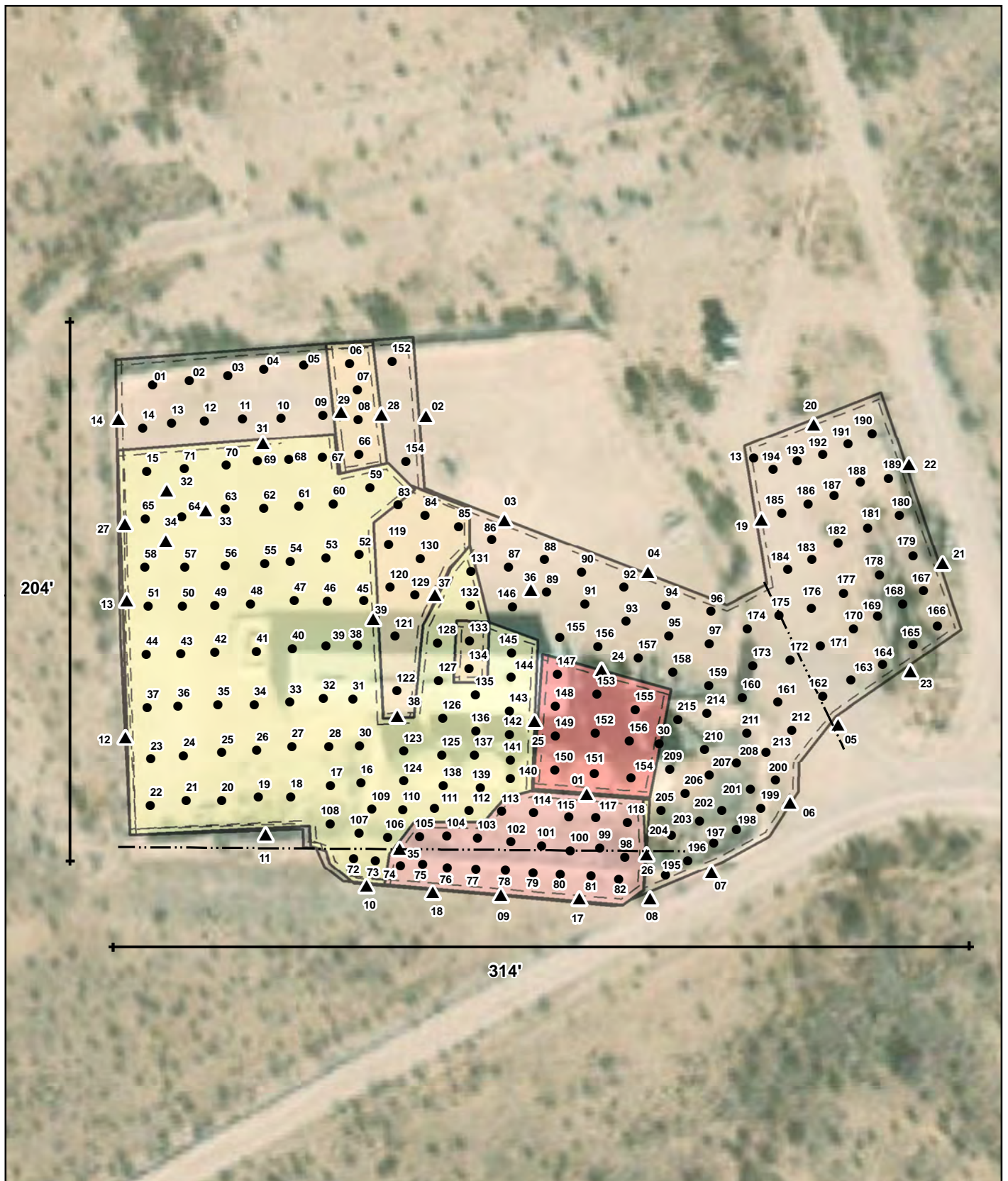
Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Background image from Esri, 2019. Feature locations from GPS. Vertex Professional Services Ltd., 2022.

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Document Path: G:\1-Projects\US PROJECTS\EOG Resources Inc\22E-00716 (Howell Ranch Reclamation Projects)\010 - Routh SWD Tank Battery\Figure 2 Confirmatory Schematic (22E-00716).mxd



- Base Sample (Prefixed by "BES22")
- ▲ Wall Sample (Prefixed by "WESS22")
- Pipeline (Underground)
- 6' Excavation Area (~20,423 sq.ft.)
- 6.5' Excavation Area (~274 sq.ft.)
- 7' Excavation Area (~3,236 sq.ft.)
- 9' Excavation Area (~2,999 sq.ft.)
- 10' Excavation Area (~2,044 sq.ft.)
- Total Excavation Area (~42,832 sq.ft.)



0 12.5 25 50 ft.

NAD 1983 UTM Zone 12N  
Date: Sep 29/22

Map Center:  
Lat: 32.666448,  
Long: -104.556601


### Confirmatory Schematic Routh Deep SWD #2

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: Background image from Esri, 2019. Feature locations from GPS. Vertex Professional Services Ltd., 2022.

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## **ATTACHMENT 2**



Client Name: EOG Resources, Inc.  
 Site Name: Routh Deep SWD #2  
 NMOCD Tracking #: nAPP2218654480  
 Project #: 22E-00716-10  
 Lab Reports: 2207414, 2207416, 2207745

Table 2. Vertical Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater >100 feet bgs													
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
			(ppm)	(ppm)	(ppm)	Benzene (mg/kg)	BTEX (Total) (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Motor Oil Range Organics (MRO) (mg/kg)	(GRO + DRO) (mg/kg)	Total Petroleum Hydrocarbons (TPH) (mg/kg)	
TP22-01	6-10'	July 7, 2022	0	77	0	ND	ND	ND	ND	ND	ND	ND	190
TP22-02	5-10'	July 7, 2022	0	58	170	ND	ND	ND	ND	ND	ND	ND	230
TP22-03	5-10'	July 7, 2022	0	48	418	ND	ND	ND	ND	ND	ND	ND	580
TP22-04	6'	July 7, 2022	0	75	0	ND	ND	ND	ND	ND	ND	ND	200
TP22-05	10'	July 7, 2022	0	41	89	ND	ND	ND	ND	ND	ND	ND	180
TP22-06	10'	July 7, 2022	0	45	0	ND	ND	ND	ND	ND	ND	ND	170
TP22-07	4'	July 8, 2022	-	66	518	ND	ND	ND	ND	ND	ND	ND	360
TP22-08	4'	July 8, 2022	-	55	181	ND	ND	ND	ND	ND	ND	ND	350
TP22-09	4'	July 8, 2022	-	69	160	ND	ND	ND	ND	ND	ND	ND	310
TP22-10	4'	July 8, 2022	-	53	173	ND	ND	ND	ND	ND	ND	ND	180
TP22-11	4'	July 8, 2022	-	48	125	ND	ND	ND	ND	ND	ND	ND	430
BH22-11	0'	July 13, 2022	0	103	23	ND	ND	ND	ND	ND	ND	ND	290

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

Client Name: EOG Resources, Inc.

Site Name: Routh Deep SWD #2

NMOCD Tracking #: nAPP2218654480

Project #: 22E-00716-10

Lab Reports: 2207E17, 2207F05, 2207F70, 2208151, 2208249, 2208347, 2208418, 2208F02, 2208E18, 2208B92, 2208I06, 2208C66, 2208A99, 2208879, 2208818, 2208698, 2208490, 2208578, 2209A31

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &gt;100 feet bgs

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					
						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)	
BES22-01	4	July 26, 2022	0	3	392	ND	ND	ND	20	ND	20	20	360
BES22-02	4	July 26, 2022	0	11	620	ND	ND	ND	15	ND	15	15	340
BES22-03	4	July 26, 2022	0	0	269	ND	ND	ND	ND	ND	ND	ND	210
BES22-04	4	July 26, 2022	0	0	148	ND	ND	ND	ND	ND	ND	ND	170
BES22-05	4	July 26, 2022	0	0	144	ND	ND	ND	ND	ND	ND	ND	120
BES22-06	7	July 29, 2022	-	-	398	ND	ND	ND	ND	ND	ND	ND	450
BES22-07	7	July 29, 2022	-	47	385	ND	ND	ND	ND	ND	ND	ND	420
BES22-08	4	July 29, 2022	-	-	2	ND	ND	ND	ND	ND	ND	ND	85
BES22-09	4	July 26, 2022	0	0	505	ND	ND	ND	44	ND	44	44	650
BES22-10	6	July 29, 2022	-	46	0	ND	ND	ND	ND	ND	ND	ND	130
BES22-11	4	July 26, 2022	0	0	500	ND	ND	ND	ND	ND	ND	ND	600
BES22-12	6	July 29, 2022	-	81	685	ND	ND	ND	ND	ND	ND	ND	720
BES22-13	4	August 29, 2022	-	40	972	ND	ND	ND	ND	ND	ND	ND	230
BES22-14	4	August 29, 2022	-	61	1,233	ND	ND	ND	ND	ND	ND	ND	360
BES22-15	4	August 29, 2022	-	31	1,060	ND	ND	ND	ND	ND	ND	ND	470
BES22-16	7	July 29, 2022	-	19	206	ND	ND	ND	ND	ND	ND	ND	160
BES22-17	7	July 29, 2022	-	-	284	ND	ND	ND	ND	ND	ND	ND	160
BES22-18	6	July 27, 2022	0	68	450	ND	ND	ND	ND	ND	ND	ND	350
BES22-19	6	July 27, 2022	0	45	447	ND	ND	ND	ND	ND	ND	ND	ND
BES22-20	6	July 27, 2022	0	46	447	ND	ND	ND	58	95	58	153	730
BES22-21	6	July 27, 2022	0	50	72	ND	ND	ND	ND	ND	ND	ND	ND
BES22-22	6	July 27, 2022	0	28	252	ND	ND	ND	ND	ND	ND	ND	150
BES22-23	6	July 27, 2022	0	61	150	ND	ND	ND	ND	ND	ND	ND	ND
BES22-24	6	July 27, 2022	0	33	125	ND	ND	ND	ND	ND	ND	ND	ND
BES22-25	6	July 27, 2022	0	38	165	ND	ND	ND	ND	ND	ND	ND	ND
BES22-26	6	July 27, 2022	0	100	712	ND	ND	ND	ND	ND	ND	ND	1100
BES22-27	6	July 27, 2022	0	112	442	ND	ND	ND	ND	ND	ND	ND	220
BES22-28	6	July 27, 2022	0	84	295	ND	ND	ND	320	380	320	700	270
BES22-29	6	July 27, 2022	0	86	250	ND	ND	ND	ND	58	ND	58	240
BES22-30	6	July 27, 2022	0	90	625	ND	ND	ND	510	1200	510	1710	650
BES22-31	6	July 27, 2022	0	60	150	ND	ND	ND	ND	ND	ND	ND	ND
BES22-32	6	July 27, 2022	0	42	175	ND	ND	ND	ND	ND	ND	ND	110
BES22-33	6	July 27, 2022	0	93	190	ND	ND	ND	ND	ND	ND	ND	ND
BES22-34	6	July 28, 2022	0	32	150	ND	ND	ND	ND	ND	ND	ND	ND
BES22-35	7	July 29, 2022	-	-	164	ND	ND	ND	ND	ND	ND	ND	170
BES22-36	7	July 29, 2022	-	117	213	ND	ND	ND	ND	ND	ND	ND	330
BES22-37	6	August 29, 2022	-	41	932	ND	ND	ND	ND	ND	ND	ND	220
BES22-38	6	July 28, 2022	0	23	355	ND	ND	ND	ND	ND	ND	ND	140
BES22-39	7	July 29, 2022	-	-	164	ND	ND	ND	ND	ND	ND	ND	320
BES22-40	6	July 28, 2022	0	93	840	ND	ND	ND	ND	ND	ND	ND	540
BES22-41	6	July 28, 2022	0	66	337	ND	ND	ND	ND	ND	ND	ND	390
BES22-42	6	July 28, 2022	0	51	310	ND	ND	ND	ND	ND	ND	ND	160
BES22-43	6	July 28, 2022	0	46	415	ND	ND	ND	ND	ND	ND	ND	170
BES22-44	6	July 28, 2022	0	20	350	ND	ND	ND	ND	ND	ND	ND	280
BES22-45	6	July 28, 2022	0	80	575	ND	ND	ND	ND	ND	ND	ND	570
BES22-46	7	July 29, 2022	-	-	253	ND	ND	ND	ND	ND	ND	ND	210
BES22-47	7	July 29, 2022	-	54	454	ND	ND	ND	ND	ND	ND	ND	390
BES22-48	6	July 28, 2022	0	114	570	ND	ND	ND	ND	ND	ND	ND	420
BES22-49	6	July 28, 2022	0	78	415	ND	ND	ND	ND	ND	ND	ND	320
BES22-50	6	July 28, 2022	0	77	380	ND	ND	ND	ND	ND	ND	ND	310
BES22-51	6	July 28, 2022	0	24	475	ND	ND	ND	ND	ND	ND	ND	240
BES22-52	6	July 28, 2022	0	93	580	ND	ND	ND	ND	ND	ND	ND	260

Client Name: EOG Resources, Inc.

Site Name: Routh Deep SWD #2

NMOCD Tracking #: nAPP2218654480

Project #: 22E-00716-10

Lab Reports: 2207E17, 2207F05, 2207F70, 2208151, 2208249, 2208347, 2208418, 2208F02, 2208E18, 2208B92, 2208I06, 2208C66, 2208A99, 2208879, 2208818, 2208698, 2208490, 2208578, 2209A31

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &gt;100 feet bgs

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					
						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)								
BES22-53	6	July 28, 2022	0	76	541	ND	ND	ND	ND	ND	ND	ND	370
BES22-54	6	July 28, 2022	0	99	481	ND	ND	ND	ND	ND	ND	ND	460
BES22-55	6	July 28, 2022	0	142	575	ND	ND	ND	ND	ND	ND	ND	660
BES22-56	6	July 28, 2022	0	110	500	ND	ND	ND	53	93	53	146	350
BES22-57	6	July 28, 2022	0	100	375	ND	ND	ND	26	68	26	94	64
BES22-58	6	July 28, 2022	0	84	420	ND	ND	ND	ND	ND	ND	ND	160
BES22-59	6	July 28, 2022	0	76	525	ND	ND	ND	ND	ND	ND	ND	350
BES22-60	6	July 28, 2022	0	91	560	ND	ND	ND	ND	ND	ND	ND	570
BES22-61	6	August 1, 2022	-	-	434	ND	ND	ND	ND	ND	ND	ND	480
BES22-62	6	August 1, 2022	-	-	370	ND	ND	ND	ND	ND	ND	ND	420
BES22-63	6	August 1, 2022	-	36	40	ND	ND	ND	ND	ND	ND	ND	110
BES22-64	7	August 2, 2022	-	-	500	ND	ND	ND	ND	ND	ND	ND	240
BES22-65	7	August 2, 2022	-	18	568	ND	ND	ND	ND	ND	ND	ND	230
BES22-66	7	August 1, 2022	-	96	477	ND	ND	ND	ND	ND	ND	ND	340
BES22-67	5	August 1, 2022	-	-	307	ND	ND	ND	ND	ND	ND	ND	250
BES22-68	5	August 1, 2022	-	-	115	ND	ND	ND	ND	ND	ND	ND	140
BES22-69	5	August 1, 2022	-	39	116	ND	ND	ND	ND	ND	ND	ND	96
BES22-70	5	August 1, 2022	-	-	392	ND	ND	ND	ND	ND	ND	ND	380
BES22-71	5	August 1, 2022	-	-	591	ND	ND	ND	ND	ND	ND	ND	410
BES22-72	6	August 2, 2022	-	-	54	ND	ND	ND	ND	ND	ND	ND	ND
BES22-73	6	August 17, 2022	-	49	531	ND	ND	ND	ND	ND	ND	ND	280
BES22-74	9	August 3, 2022	-	38	559	ND	ND	ND	ND	ND	ND	ND	370
BES22-75	9	August 17, 2022	-	461	47	ND	ND	ND	ND	ND	ND	ND	180
BES22-76	9	August 17, 2022	-	655	41	ND	ND	ND	ND	ND	ND	ND	320
BES22-77	9	August 17, 2022	-	1,388	67	ND	ND	ND	ND	ND	ND	ND	560
BES22-78	9	August 17, 2022	-	936	57	ND	ND	ND	ND	ND	ND	ND	440
BES22-79	9	August 17, 2022	-	1,037	58	ND	ND	ND	ND	ND	ND	ND	400
BES22-80	9	August 17, 2022	-	613	51	ND	ND	ND	ND	ND	ND	ND	410
BES22-81	7	August 2, 2022	-	85	473	ND	ND	ND	57	83	57	140	520
BES22-82	7	August 2, 2022	-	-	440	ND	ND	ND	31	69	31	100	530
BES22-83	7	August 4, 2022	0	56	212	ND	ND	ND	ND	ND	ND	ND	98
BES22-84	7	August 4, 2022	0	50	261	ND	ND	ND	ND	ND	ND	ND	100
BES22-85	7	August 10, 2022	0	31	499	ND	ND	ND	ND	ND	ND	ND	190
BES22-86	4	August 2, 2022	-	-	111	ND	ND	ND	ND	ND	ND	ND	150
BES22-87	4	August 2, 2022	-	38	238	ND	ND	ND	ND	ND	ND	ND	350
BES22-88	4	August 2, 2022	-	-	213	ND	ND	ND	ND	ND	ND	ND	300
BES22-89	4	August 3, 2022	-	-	350	ND	ND	ND	ND	ND	ND	ND	280
BES22-90	4	August 3, 2022	-	-	316	ND	ND	ND	ND	ND	ND	ND	280
BES22-91	4	August 3, 2022	-	90	453	ND	ND	ND	ND	ND	ND	ND	390
BES22-92	4	August 3, 2022	-	-	326	ND	ND	ND	ND	ND	ND	ND	330
BES22-93	4	August 3, 2022	-	-	67	ND	ND	ND	ND	ND	ND	ND	75
BES22-94	4	August 3, 2022	-	-	0	ND	ND	ND	25	ND	25	25	92
BES22-95	4	August 3, 2022	-	-	0	ND	ND	ND	ND	ND	ND	ND	70
BES22-96	4	August 3, 2022	-	-	115	ND	ND	ND	ND	ND	ND	ND	110
BES22-97	6	August 3, 2022	-	-	0	ND	ND	ND	ND	ND	ND	ND	68
BES22-98	9	August 10, 2022	0	54	578	ND	ND	ND	ND	ND	ND	ND	660
BES22-99	9	August 10, 2022	0	29	691	ND	ND	ND	ND	ND	ND	ND	940
BES22-100	9	August 10, 2022	0	40	1,164	ND	ND	ND	ND	ND	ND	ND	530
BES22-101	9	August 10, 2022	0	31	225	ND	ND	ND	ND	ND	ND	ND	310
BES22-102	9	August 10, 2022	0	37	844	ND	ND	ND	ND	ND	ND	ND	650
BES22-103	9	August 10, 2022	0	23	678	ND	ND	ND	ND	ND	ND	ND	580
BES22-104	9	August 10, 2022	0	36	780	ND	ND	ND	ND	ND	ND	ND	580

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NMOCD Tracking #: nAPP2218654480

Project #: 22E-00716-10

Lab Reports: 2207E17, 2207F05, 2207F70, 2208151, 2208249, 2208347, 2208418, 2208F02, 2208E18, 2208B92, 2208I06, 2208C66, 2208A99, 2208879, 2208818, 2208698, 2208490, 2208578, 2209A31

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &gt;100 feet bgs

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					
						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)	
BES22-105	6	August 10, 2022	0	55	740	ND	ND	ND	ND	ND	ND	ND	910
BES22-106	6	August 10, 2022	0	74	3,478	ND	ND	ND	ND	ND	ND	ND	1600
BES22-107	6	August 10, 2022	0	93	867	ND	ND	ND	ND	ND	ND	ND	530
BES22-108	6	August 10, 2022	0	62	1,272	ND	ND	ND	ND	ND	ND	ND	470
BES22-109	6	August 10, 2022	0	392	1,118	ND	ND	ND	ND	ND	ND	ND	800
BES22-110	6	August 10, 2022	0	136	1,576	ND	ND	ND	ND	ND	ND	ND	2400
BES22-111	6	August 10, 2022	0	100	1,890	ND	ND	ND	ND	ND	ND	ND	850
BES22-112	6	August 10, 2022	0	114	1,984	ND	ND	ND	ND	ND	ND	ND	1400
BES22-113	9	August 4, 2022	0	23	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-114	9	August 4, 2022	0	49	98	ND	ND	ND	ND	ND	ND	ND	68
BES22-115	9	August 4, 2022	0	42	297	ND	ND	ND	ND	ND	ND	ND	99
BES22-116	9	August 4, 2022	0	89	248	ND	ND	ND	31	50	31	81	ND
BES22-117	9	August 4, 2022	0	37	486	ND	ND	ND	ND	ND	ND	ND	150
BES22-118	9	August 4, 2022	0	109	30	ND	ND	ND	27	ND	27	27	63
BES22-119	8	August 4, 2022	0	33	258	ND	ND	ND	ND	ND	ND	ND	100
BES22-120	8	August 4, 2022	0	41	277	ND	ND	ND	ND	ND	ND	ND	150
BES22-121	8	August 4, 2022	0	54	567	ND	ND	ND	ND	ND	ND	ND	190
BES22-122	8	August 4, 2022	0	52	385	ND	ND	ND	ND	ND	ND	ND	120
BES22-123	7	August 4, 2022	0	49	118	ND	ND	ND	ND	ND	ND	ND	ND
BES22-124	6	August 10, 2022	0	133	2,245	ND	ND	ND	ND	ND	ND	ND	530
BES22-125	6	August 10, 2022	0	46	337	ND	ND	ND	ND	ND	ND	ND	540
BES22-126	6	August 10, 2022	0	95	552	ND	ND	ND	ND	ND	ND	ND	410
BES22-127	6	August 10, 2022	0	82	497	ND	ND	ND	ND	ND	ND	ND	570
BES22-128	6	August 10, 2022	0	124	1,108	ND	ND	ND	ND	ND	ND	ND	200
BES22-129	7	August 10, 2022	0	56	705	ND	ND	ND	ND	ND	ND	ND	590
BES22-130	7	August 10, 2022	0	47	430	ND	ND	ND	ND	ND	ND	ND	140
BES22-131	6	August 11, 2022	0	86	3,719	ND	ND	ND	ND	ND	ND	ND	2300
BES22-132	6	August 11, 2022	0	96	2,039	ND	ND	ND	ND	ND	ND	ND	3300
BES22-133	6	August 11, 2022	0	157	9,137	ND	ND	ND	ND	ND	ND	ND	12000
BES22-133	6.5	September 19, 2022	-	86	3,840	ND	ND	ND	ND	ND	ND	ND	2200
BES22-134	6	August 11, 2022	0	79	9,732	ND	ND	ND	ND	ND	ND	ND	11000
BES22-134	6.5	September 19, 2022	-	95	2,540	ND	ND	ND	ND	ND	ND	ND	3900
BES22-135	6	August 11, 2022	0	96	4,023	ND	ND	ND	ND	ND	ND	ND	5600
BES22-136	6	August 11, 2022	0	101	2,748	ND	ND	ND	ND	ND	ND	ND	3100
BES22-137	6	August 11, 2022	0	98	1,819	ND	ND	ND	ND	ND	ND	ND	1700
BES22-138	6	August 11, 2022	0	101	238	ND	ND	ND	ND	ND	ND	ND	170
BES22-139	6	August 11, 2022	0	580	1,802	ND	ND	ND	ND	ND	ND	ND	1100
BES22-140	6	August 11, 2022	0	32	186	ND	ND	ND	ND	ND	ND	ND	150
BES22-141	6	August 11, 2022	0	96	281	ND	ND	ND	ND	ND	ND	ND	530
BES22-142	6	August 11, 2022	0	88	435	ND	ND	ND	ND	ND	ND	ND	540
BES22-143	6	August 11, 2022	0	97	5,322	ND	ND	ND	ND	ND	ND	ND	5900
BES22-144	6	August 11, 2022	0	111	5,701	ND	ND	ND	ND	ND	ND	ND	5600
BES22-145	6	August 11, 2022	0	93	1,480	ND	ND	ND	ND	ND	ND	ND	1300
BES22-146	5	August 11, 2022	0	90	551	ND	ND	ND	ND	ND	ND	ND	450
BES22-147	10	August 11, 2022	0	149	1,082	ND	ND	ND	ND	ND	ND	ND	470
BES22-148	10	August 11, 2022	0	135	1,408	ND	ND	ND	ND	ND	ND	ND	440
BES22-149	10	August 11, 2022	0	98	1,031	ND	ND	ND	ND	ND	ND	ND	360
BES22-150	10	August 11, 2022	0	83	1,316	ND	ND	ND	ND	ND	ND	ND	350
BES22-151	10	August 11, 2022	0	163	1,049	ND	ND	ND	ND	ND	ND	ND	190
BES22-152	4	August 23, 2022	0	20	0	ND	ND	ND	ND	ND	ND	ND	140
BES22-153	4	August 23, 2022	0	26	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-154	4	August 23, 2022	0	29	0	ND	ND	ND	ND	ND	ND	ND	ND

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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					
						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)	
BES22-155	4	August 19, 2022	0	-	590	ND	ND	ND	ND	ND	ND	ND	230
BES22-156	4	August 19, 2022	0	127	655	ND	ND	ND	ND	ND	ND	ND	340
BES22-157	4	August 19, 2022	0	62	458	ND	ND	ND	ND	ND	ND	ND	150
BES22-158	4	August 19, 2022	0	97	676	ND	ND	ND	ND	ND	ND	ND	260
BES22-159	4	August 19, 2022	0	78	438	ND	ND	ND	ND	ND	ND	ND	420
BES22-160	4	August 19, 2022	0	84	684	ND	ND	ND	ND	ND	ND	ND	580
BES22-161	4	August 19, 2022	0	88	567	ND	ND	ND	ND	ND	ND	ND	560
BES22-162	4	August 19, 2022	0	60	632	ND	ND	ND	ND	ND	ND	ND	290
BES22-163	4	August 19, 2022	0	76	727	ND	ND	ND	ND	ND	ND	ND	710
BES22-164	4	August 19, 2022	0	82	715	ND	ND	ND	ND	ND	ND	ND	660
BES22-165	4	August 19, 2022	0	74	480	ND	ND	ND	ND	ND	ND	ND	680
BES22-166	4	August 19, 2022	0	-	559	ND	ND	ND	ND	ND	ND	ND	930
BES22-167	4	August 19, 2022	0	-	598	ND	ND	ND	25	ND	25	25	530
BES22-168	4	August 19, 2022	0	-	689	ND	ND	ND	ND	ND	ND	ND	490
BES22-169	4	August 19, 2022	0	-	1,179	ND	ND	ND	ND	ND	ND	ND	770
BES22-170	4	August 19, 2022	0	68	1,070	ND	ND	ND	ND	ND	ND	ND	680
BES22-171	4	August 19, 2022	0	38	1,127	ND	ND	ND	ND	ND	ND	ND	460
BES22-172	4	August 19, 2022	0	82	1,223	ND	ND	ND	ND	ND	ND	ND	950
BES22-173	4	August 19, 2022	0	86	1,242	ND	ND	ND	ND	ND	ND	ND	460
BES22-174	4	August 19, 2022	0	53	616	ND	ND	ND	ND	ND	ND	ND	1100
BES22-175	4	August 19, 2022	0	67	672	ND	ND	ND	ND	ND	ND	ND	860
BES22-176	4	August 19, 2022	0	49	444	ND	ND	ND	ND	ND	ND	ND	540
BES22-177	4	August 19, 2022	0	99	714	ND	ND	ND	ND	ND	ND	ND	1300
BES22-178	4	August 19, 2022	0	64	839	ND	ND	ND	ND	ND	ND	ND	1200
BES22-179	4	August 19, 2022	0	53	837	ND	ND	ND	ND	ND	ND	ND	540
BES22-180	4	August 19, 2022	0	62	786	ND	ND	ND	ND	ND	ND	ND	230
BES22-181	4	August 19, 2022	0	78	681	ND	ND	ND	ND	ND	ND	ND	430
BES22-182	4	August 19, 2022	0	90	844	ND	ND	ND	ND	ND	ND	ND	600
BES22-183	4	August 19, 2022	0	61	1,304	ND	ND	ND	ND	ND	ND	ND	1100
BES22-184	4	August 19, 2022	0	80	1,692	ND	ND	ND	ND	ND	ND	ND	1400
BES22-185	4	August 19, 2022	0	93	1,882	ND	ND	ND	ND	ND	ND	ND	1300
BES22-186	4	August 19, 2022	0	64	1,739	ND	ND	ND	ND	ND	ND	ND	850
BES22-187	4	August 19, 2022	0	113	1,117	ND	ND	ND	ND	ND	ND	ND	930
BES22-188	4	August 19, 2022	0	90	1,526	ND	ND	ND	ND	ND	ND	ND	780
BES22-189	4	August 19, 2022	0	75	1,423	ND	ND	ND	ND	ND	ND	ND	340
BES22-190	4	August 19, 2022	0	80	2,020	ND	ND	ND	ND	ND	ND	ND	1400
BES22-191	4	August 19, 2022	0	63	1,352	ND	ND	ND	ND	ND	ND	ND	1100
BES22-192	4	August 23, 2022	0	22	10	ND	ND	ND	ND	ND	ND	ND	ND
BES22-193	4	August 23, 2022	0	25	34	ND	ND	ND	ND	ND	ND	ND	ND
BES22-194	4	August 23, 2022	0	19	59	ND	ND	ND	ND	ND	ND	ND	ND
BES22-195	4	August 23, 2022	0	60	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-196	4	August 23, 2022	0	42	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-197	4	August 23, 2022	0	27	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-198	4	August 23, 2022	0	30	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-199	4	August 23, 2022	0	34	0	ND	ND	ND	ND	ND	ND	ND	ND
BES22-200	4	August 23, 2022	0	53	24	ND	ND	ND	ND	ND	ND	ND	ND
BES22-201	4	August 23, 2022	0	48	183	ND	ND	ND	ND	ND	ND	ND	210
BES22-202	4	August 23, 2022	0	49	262	ND	ND	ND	ND	ND	ND	ND	140
BES22-203	4	August 23, 2022	0	51	67	ND	ND	ND	ND	ND	ND	ND	ND
BES22-204	4	August 23, 2022	0	32	168	ND	ND	ND	ND	ND	ND	ND	120
BES22-205	4	August 23, 2022	0	58	62	ND	ND	ND	ND	ND	ND	ND	63
BES22-206	4	August 23, 2022	0	121	0	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &gt;100 feet bgs

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					
						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)								
BES22-207	4	August 23, 2022	0	38	460	ND	ND	ND	ND	ND	ND	ND	390
BES22-208	4	August 23, 2022	0	44	502	ND	ND	ND	ND	ND	ND	ND	420
BES22-209	4	August 29, 2022	-	83	1,232	ND	ND	ND	ND	ND	ND	ND	460
BES22-210	4	August 29, 2022	-	81	1,063	ND	ND	ND	ND	ND	ND	ND	450
BES22-211	4	August 29, 2022	-	81	815	ND	ND	ND	ND	ND	ND	ND	500
BES22-212	4	August 29, 2022	-	59	482	ND	ND	ND	ND	ND	ND	ND	710
BES22-213	4	August 29, 2022	-	75	727	ND	ND	ND	ND	ND	ND	ND	500
BES22-214	4	August 29, 2022	-	86	802	ND	ND	ND	ND	ND	ND	ND	470
BES22-215	4	August 29, 2022	-	74	783	ND	ND	ND	ND	ND	ND	ND	760
WES22-01	6-10	August 1, 2022	-	120	232	ND	ND	ND	ND	ND	ND	ND	150
WES22-02	0-4	August 9, 2022	-	51	405	ND	ND	ND	ND	ND	ND	ND	270
WES22-03	0-4	August 5, 2022	-	24	392	ND	ND	ND	ND	ND	ND	ND	350
WES22-03	4-7	August 23, 2022	0	0	20	ND	ND	ND	ND	ND	ND	ND	ND
WES22-04	0-4	August 9, 2022	-	90	421	ND	ND	ND	ND	ND	ND	ND	280
WES22-05	0-4	August 16, 2022	-	35	601	ND	ND	ND	ND	ND	ND	ND	690
WES22-05	0-4	September 19, 2022	-	49	530	ND	ND	ND	ND	ND	ND	ND	600
WES22-06	0-4	August 9, 2022	-	55	414	ND	ND	ND	ND	ND	ND	ND	250
WES22-07	0-4	August 19, 2022	-	-	490	ND	ND	ND	ND	ND	ND	ND	190
WES22-08	0-4	August 5, 2022	-	79	12	ND	ND	ND	ND	ND	ND	ND	ND
WES22-09	0-4	August 5, 2022	-	38	323	ND	ND	ND	ND	ND	ND	ND	360
WES22-10	0-4	August 5, 2022	-	31	437	ND	ND	ND	ND	ND	ND	ND	400
WES22-10	4-9	August 17, 2022	-	1,117	57	ND	ND	ND	ND	ND	ND	ND	740
WES22-11	0-4	August 8, 2022	-	65	47	ND	ND	ND	ND	ND	ND	ND	ND
WES22-11	4-6	August 22, 2022	0	-	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-12	0-4	August 8, 2022	-	37	41	ND	ND	ND	ND	ND	ND	ND	ND
WES22-12	4-6	August 22, 2022	0	-	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-13	0-4	August 8, 2022	-	88	363	ND	ND	ND	ND	ND	ND	ND	340
WES22-13	4-6	August 22, 2022	0	-	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-14	0-4	August 8, 2022	-	112	525	ND	ND	ND	ND	ND	ND	ND	ND
WES22-17	4-9	August 17, 2022	-	2,680	50	ND	ND	ND	ND	ND	ND	ND	1900
WES22-18	4-9	August 17, 2022	-	1,098	76	ND	ND	ND	ND	ND	ND	ND	650
WES22-19	0-4	August 19, 2022	0	-	335	ND	ND	ND	ND	ND	ND	ND	200
WES22-20	0-4	August 23, 2022	0	16	233	ND	ND	ND	ND	ND	ND	ND	80
WES22-21	0-4	August 29, 2022	-	80	615	ND	ND	ND	ND	ND	ND	ND	470
WES22-22	0-4	August 23, 2022	0	24	498	ND	ND	ND	ND	ND	ND	ND	350
WES22-23	0-4	August 19, 2022	0	-	488	ND	ND	ND	ND	ND	ND	ND	280
WES22-24	4-10	August 22, 2022	0	-	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-25	6-10	August 22, 2022	0	-	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-26	4-9	August 22, 2022	0	-	23	ND	ND	ND	ND	ND	ND	ND	80
WES22-27	4-7	August 22, 2022	0	-	49	ND	ND	ND	ND	ND	ND	ND	ND
WES22-28	4-7	August 23, 2022	0	55	0	ND	ND	ND	ND	ND	ND	ND	ND
WES22-29	4-7	August 23, 2022	0	28	28	ND	ND	ND	ND	ND	ND	ND	ND
WES22-30	4-10	August 23, 2022	0	29	106	ND	ND	ND	ND	ND	ND	ND	200
WES22-31	4-6	August 29, 2022	-	31	379	ND	ND	ND	ND	ND	ND	ND	200
WES22-32	4-7	August 29, 2022	-	36	499	ND	ND	ND	ND	ND	ND	ND	180
WES22-33	4-7	August 29, 2022	-	35	532	ND	ND	ND	ND	ND	ND	ND	250
WES22-34	4-7	August 29, 2022	-	34	204	ND	ND	ND	ND	ND	ND	ND	120

Site Name: Routh Deep SWD #2

NMOCD Tracking #: nAPP2218654480

Project #: 22E-00716-10

Lab Reports: 2207E17, 2207F05, 2207F70, 2208151, 2208249, 2208347, 2208418, 2208F02, 2208E18, 2208B92, 2208I06, 2208C66, 2208A99, 2208879, 2208818, 2208698, 2208490, 2208578, 2209A31

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &gt;100 feet bgs

Table 3. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater >100 feet bgs													
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					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			Chloride Concentration										
				(ppm)	(ppm)								(ppm)
WES22-35	4-9	August 29, 2022	-	71	150	ND	ND	ND	ND	ND	ND	ND	80
WES22-36	4-6	August 29, 2022	-	87	24	ND	ND	ND	ND	ND	ND	ND	120
WES22-37	6-7	August 29, 2022	-	43	571	ND	ND	ND	ND	ND	ND	ND	870
WES22-38	6-7	August 29, 2022	-	39	686	ND	ND	ND	ND	ND	ND	ND	390
WES22-39	6-7	August 29, 2022	-	70	928	ND	ND	ND	ND	ND	ND	ND	130

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

**Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria**

## **ATTACHMENT 3**



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	nAPP2218654480
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	EOG Resources, Inc.	OGRID	7377
Contact Name	Chase Settle	Contact Telephone	575-748-1471
Contact email	chase_settle@eogresources.com	Incident #	nAPP2218654480
Contact mailing address	104 S. 4th Street Artesia, NM 88210		

Location of Release Source

Latitude 32.66643 Longitude -104.55615  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Routh Deep SWD #2	Site Type	SWD
Date Release Discovered	6/30/2022	API# (if applicable)	30-015-23585

Unit Letter	Section	Township	Range	County
B	14	19S	24E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) Unknown	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" 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

During decommission activities, historical contamination was discovered within the containment area around the produced water tanks. Based on the area footprint, it was determined by a third party environmental consultant that the volume most likely crossed the reportable threshold.

Incident ID	nAPP2218654480
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 checked="" 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 checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Chase Settle</u>	Title: <u>Rep Safety &amp; Environmental Sr</u>
Signature: <u>Chase Settle</u>	Date: <u>07/05/2022</u>
email: <u>Chase_Settle@eogresources.com</u>	Telephone: <u>575-748-1471</u>
<b><u>OCD Only</u></b>	
Received by: <u>Jocelyn Harimon</u>	Date: <u>07/06/2022</u>

**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 122867

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 122867
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141	7/6/2022

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

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

Incident ID	nAPP2218654480
District RP	
Facility ID	
Application ID	

## Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Chase Settle Title: Rep Safety and Environmental  
Signature: Chase Settle Date: 01/18/2023  
email: chase\_settle@eogresources.com Telephone: 575-748-4171

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

## **ATTACHMENT 4**



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	6/15/2022
Site Location Name:	Routh Deep SWD #2	Report Run Date:	6/15/2022 11:31 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

### Summary of Times

Arrived at Site 6/15/2022 9:55 AM

Departed Site 6/15/2022 4:35 PM

### Field Notes

**9:56** Arrived at site and met with Standard Safety personnel. Filled out safety paperwork.

**9:57** Crews are continuing excavation of the site. Materials are still being stockpiled at northeast corner

**16:26** Done for the day, will bring out trucks to haul off possible contaminated materials.

### Next Steps & Recommendations

**1** Haul off possible contaminated soil to disposal

# Daily Site Visit Report



## Site Photos

Viewing Direction: Northwest



Southwest corner of site

Viewing Direction: Northeast



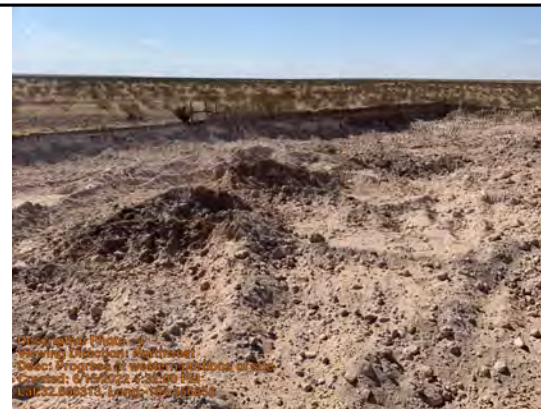
Stockpile at northeast corner

Viewing Direction: Southwest



Progress at western portions of site

Viewing Direction: Northwest



Progress at western portions of site





## Daily Site Visit Report

Viewing Direction: West



Progress at southern perimeter



## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Fernando Rodriguez

**Signature:**   
Signature



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	7/13/2022
Site Location Name:	Routh Deep SWD #2	Report Run Date:	7/13/2022 10:38 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

### Summary of Times

Arrived at Site	7/13/2022 8:15 AM
Departed Site	7/13/2022 3:15 PM

### Field Notes

- 8:41** Loaded the first round of 8 trucks, completed safety meeting, and ran magnetic locator.
- 10:15** Samples came back clean except under truck loading area. Will reassess once we are loading trucks elsewhere.
- 10:38** Potholing into pasture to complete delineation of hot walls
- 10:41** Collecting BH22-08 with auger to avoid tearing up pasture with trackhoe
- 14:38** Backfilling all excavated boreholes

### Next Steps & Recommendations

- 1 Continue excavation

## Daily Site Visit Report



## Site Photos

Viewing Direction: West



Sampling area from this morning

Viewing Direction: Southeast



Loading trucks from pile

Viewing Direction: West



BH22-09 15' south of the gas line

Viewing Direction: North



BH22-10



## Daily Site Visit Report

<p><b>Viewing Direction: South</b></p>  <p>Descriptive Photo - 6 Viewing Direction: South Desc: BH22-11 Created: 7/13/2022 1:49:52 PM Lat:32.568341, Long:-104.568228</p> <p>BH22-11</p>	<p><b>Viewing Direction: Southwest</b></p>  <p>Descriptive Photo - 5 Viewing Direction: Southwest Desc: Excavation Created: 7/13/2022 1:46:25 PM Lat:32.568377, Long:-104.568228</p> <p>Excavation</p>
<p><b>Viewing Direction: Southwest</b></p>  <p>Descriptive Photo - 7 Viewing Direction: Southwest Desc: Holes backfilled Created: 7/13/2022 3:13:39 PM Lat:32.568377, Long:-104.568228</p> <p>Holes backfilled</p>	<p><b>Viewing Direction: Northwest</b></p>  <p>Descriptive Photo - 8 Viewing Direction: Northwest Desc: Dirt mountain Created: 7/13/2022 3:14:14 PM Lat:32.568227, Long:-104.568416</p> <p>Dirt mountain</p>



## Daily Site Visit Report



## Daily Site Visit Report



Daily Site Visit Signature

Inspector: Sally Carttar

Signature:

  
Signature



## Daily Site Visit Report

Client:	EOG Resources Inc.	Inspection Date:	9/19/2022
Site Location Name:	Routh Deep SWD #2	Report Run Date:	9/19/2022 10:25 PM
Client Contact Name:	Chase Settle	API #:	
Client Contact Phone #:	575-703-6537		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

### Summary of Times

Arrived at Site	9/19/2022 9:15 AM
Departed Site	9/19/2022 3:30 PM

### Field Notes

**9:22** Discussing excavation plan to remove contaminated soils from base and wall of excavation

**10:47** Completed safety meeting and discussed excavation plan with operators. Ran magnetic locator in excavation areas

**11:30** Sent the truck to landfill

### Next Steps & Recommendations

- 1 Apply for site closure once DTGW is confirmed
- 2 Continue with backfill



## Daily Site Visit Report



## Site Photos

Viewing Direction: Southeast



4' excavation into lease road east of pad

Viewing Direction: Southwest



Today's excavation

Viewing Direction: Southwest



Excavation from near dry hole marker

Viewing Direction: Northwest



Toward pit area from dry hole marker





## Daily Site Visit Report

Viewing Direction: Northeast



Remaining pad

Viewing Direction: East



Pad and excavation toward direction of cattle guard

Viewing Direction: South



Excavation

Viewing Direction: Northeast



Walls against remaining pad



## Daily Site Visit Report

<p><b>Viewing Direction: Northwest</b></p>  <p>Descriptive Photo - 17 Viewing Direction: Northwest Desc: Toward pit north of pad Created: 9/19/2022 3:18:08 PM Lat:22.585536, Long:-104.555775</p>	<p><b>Viewing Direction: Southeast</b></p>  <p>Descriptive Photo - 18 Viewing Direction: Southeast Desc: Excavation with today's addition Created: 9/19/2022 3:18:08 PM Lat:22.585536, Long:-104.555775</p>
Toward pit north of pad	Excavation with today's addition
<p><b>Viewing Direction: Northeast</b></p>  <p>Descriptive Photo - 19 Viewing Direction: Northeast Desc: Bam line Created: 9/19/2022 3:20:14 PM Lat:22.585536, Long:-104.555775</p>	<p><b>Viewing Direction: Southwest</b></p>  <p>Descriptive Photo - 2 Viewing Direction: Southwest Desc: Pad excavation Created: 9/19/2022 10:51:22 AM Lat:22.585536, Long:-104.555775</p>
Bam line	Pad excavation



## Daily Site Visit Report

Viewing Direction: Southeast



Bam line, today's wall excavation, and ramps

Viewing Direction: Southwest



Planning to excavate BES22-133 and 134 down 6"

Viewing Direction: Southwest



Scraping the base

Viewing Direction: Southwest



Excavated area





## Daily Site Visit Report

Viewing Direction: West



Taking out the ramp to resample the wall

Viewing Direction: West



Toward pad

Viewing Direction: Northwest



Excavation east of pad

Viewing Direction: South



Toward battery

## Daily Site Visit Report



Daily Site Visit Signature

Inspector: Sally Carttar

Signature:

A handwritten signature in black ink, appearing to be 'Sally Carttar', written over a horizontal line. Below the line, the word 'Signature' is printed in a small font.

## **ATTACHMENT 5**



Ranger Environmental Services, LLC  
P.O. Box 201179,  
Austin, Texas 78720  
Phone: (512)335-1785  
Fax: (512)335-0527

**BORING NUMBER SB-1**  
PAGE 1 OF 1

CLIENT EOG Resources, Inc.

PROJECT NAME Federal CM-1

PROJECT NUMBER 5375

PROJECT LOCATION Eddy County, New Mexico

DATE STARTED 9/26/22

COMPLETED 9/26/22

**GROUND WATER LEVELS:**

DRILLING CONTRACTOR HCI

AT TIME OF DRILLING --- Dry

DRILLING METHOD Air Rotary

AFTER DRILLING --- Dry

LOGGED BY William Kennedy

CHECKED BY P. Finn

BTOC = Below Top Of Casing

GB = Grab Sample

GPS COORDINATES 32.66546743°, -104.55115675°

GEO = Geotech Sample

DEPTH (ft)	SOIL SAMPLE ANALYSIS	GROUNDWATER LEVELS (BTOC)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Type: 2" Diameter Temp. Well
5				(GM) Silty Gravel, brown to tan, firm to stiff	
10				(ML) Clayey Silt, white to tan, stiff to very stiff	
15					
20					
25					
30				(ML) Clayey Sandy Silt, reddish-brown to maroon, very soft to firm	
35					
40					
45					
50					
55					
60					
65				(ML) Clayey Sandy Silt, tan to pink, soft to very soft	
70				(ML) Clayey Sandy Silt, dark red, soft to very soft	
75					
80					
85				(ML) Clayey Sandy Silt, reddish-brown, soft to very soft to firm	
90				(ML) Clayey Sandy Silt, dark red, very soft to firm/some stiff	
95					
100					
105					
108.0				(ML) Clayey Sandy Silt, light brown to light red, very soft to firm	Temporary Well Screen

Bottom of borehole at 108.0 feet- Dry upon completion.

NOTE: 72 hours after completion Ranger personnel evaluated the temporary well for the presence of water utilizing a Heron Instruments electronic water meter. No water was detected in the temporary well. Following completion of the investigation, the temporary well/soil boring was plugged and abandoned.

ENVIRONMENTAL BH - GINT STD US.GDT - 9/29/22 08:47 - R:\DRAFTING FILES\GINT LOGS\5375 - FEDERAL CM-1 - BORING LOGS.GPJ



## Federal CM-1 DTGW Borehole

Routh SWD Deep #2 is located within a 0.50 mile radius (0.33 miles)  
DTGW > 100 feet (19.15.29.12)

### Legend

- DTGW Borehole (108 ft BGS)





Routh SWD



6/27/2022, 12:29:45 PM

GIS WATERS PODs

● Pending

□ OSE District Boundary

Water Right Regulations

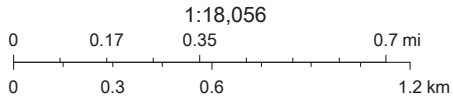
□ Closure Area

■ New Mexico State Trust Lands

■ Subsurface Estate

■ Both Estates

□ SiteBoundaries



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

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

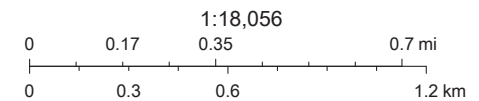


# Routh SWD



6/27/2022, 12:37:16 PM

- |                 |                         |                                |
|-----------------|-------------------------|--------------------------------|
| — Override 1    | □ OSE District Boundary | ■ New Mexico State Trust Lands |
| GIS WATERS PODs | Water Right Regulations | ■ Both Estates                 |
| ● Pending       | □ Closure Area          | ■ SiteBoundaries               |



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

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



# New Mexico Office of the State Engineer

## Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
RA	06436	3	1	4	12	19S	24E	543083	3615122*

x

**Driller License:** 406      **Driller Company:** TIDWELL, CLYDE J.

**Driller Name:**

<b>Drill Start Date:</b> 01/30/1979	<b>Drill Finish Date:</b> 02/04/1979	<b>Plug Date:</b>
<b>Log File Date:</b> 02/04/1979	<b>PCW Rcv Date:</b>	<b>Source:</b> Shallow
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b>
<b>Casing Size:</b>	<b>Depth Well:</b>	<b>Depth Water:</b> 300 feet

x

<b>Meter Number:</b> 4261	<b>Meter Make:</b> MCCROMETER
<b>Meter Serial Number:</b> 14-01823	<b>Meter Multiplier:</b> 100.0000
<b>Number of Dials:</b> 6	<b>Meter Type:</b> Diversion
<b>Unit of Measure:</b> Gallons	<b>Return Flow Percent:</b>
<b>Usage Multiplier:</b>	<b>Reading Frequency:</b> Quarterly

### Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
01/11/2000	2000	0	A	RPT		0	
07/11/2000	2000	0	A	RPT		0	
10/11/2000	2000	0	A	RPT		0	
01/03/2001	2000	0	A	RPT		0	
04/09/2001	2001	0	A	RPT		0	
07/09/2001	2001	0	A	RPT	not water used this quater	0	
01/23/2002	2001	16020	A	RPT		0	
04/04/2002	2002	16020	A	RPT		0	
07/06/2002	2002	23670	A	RPT		0.023	
10/09/2002	2002	26528	A	RPT		0.009	
01/14/2003	2002	32468	A	RPT		0.018	
04/16/2003	2003	35292	A	RPT		0.009	
08/18/2003	2003	53990	A	tw		0.057	
10/28/2003	2003	57574	A	tw		0.011	
01/08/2004	2004	57574	A	tw		0	
04/15/2004	2004	61694	A	sj		0.013	
07/06/2004	2004	61694	A	sj		0	
10/02/2004	2004	92200	A	sj		0.094	
01/10/2005	2004	108867	A	sj		0.051	
04/11/2005	2005	109923	A	RPT		0.003	
07/09/2005	2005	112043	A	RPT		0.007	
10/04/2005	2005	116328	A	RPT		0.013	
12/31/2005	2005	129760	A	ch		0.041	
02/27/2006	2006	140575	A	ch		0.033	
03/01/2006	2006	0	A	RPT	Initial reading	0	

07/07/2006	2006	29996	A	RPT	9.205
10/02/2006	2006	44829	A	RPT	4.552
04/10/2007	2007	52670	A	RPT	2.406
07/09/2007	2007	55001	A	RPT	0.715
10/10/2007	2007	55501	A	RPT	0.153
01/08/2008	2007	57425	A	RPT	0.590
04/08/2008	2008	58751	A	RPT	0.407
07/08/2008	2008	61160	A	RPT	0.739
10/09/2008	2008	61589	A	RPT	0.132
01/08/2009	2008	62400	A	RPT	0.249
01/01/2010	2009	65837	A	RPT	1.055
10/05/2011	2011	20693	A	RPT Final reading/Temp Meter	6.350
10/05/2011	2011	0	A	RPT Initial reading/Temp meter	0
10/05/2011	2011	70831	A	RPT	1.533
07/09/2012	2012	6707	A	RPT Temp Meter/Final Reading	1.329
07/09/2012	2012	2376	A	RPT Temp Meter/Initial Reading	0
05/08/2013	2013	84373	A	RPT	4.156
05/08/2013	2013	70831	A	RPT Old Meter Reinstalled/New read	0
07/10/2013	2013	84727	A	RPT	0.109
10/01/2013	2013	85221	A	RPT	0.152
01/01/2014	2013	243320	R	RPT Corrected reading	48.519
04/01/2014	2014	244217	A	RPT Corrected reading	0.275
07/01/2014	2014	271687	A	RPT	8.430
10/01/2014	2014	304194	A	RPT	9.976
07/01/2015	2015	344217	A	RPT	12.283
10/08/2015	2015	344217	A	RPT	0
01/01/2016	2016	344217	A	ap	0
04/01/2016	2016	344217	A	ap	0
07/01/2016	2016	344217	A	ap	0
10/01/2016	2016	344217	A	ap	0
01/01/2017	2017	344217	A	ap	0
04/04/2017	2017	181180	A	ap newmeterstartedw/181180	0
07/06/2017	2017	236029	A	ap	16.833
10/06/2017	2017	257069	A	ap	6.457
01/03/2018	2018	289625	A	ap	9.991
04/01/2018	2018	289625	A	ap	0
07/01/2018	2018	289625	A	ap	0
10/01/2018	2018	289625	A	RPT	0
01/01/2019	2019	289625	A	RPT	0
04/01/2019	2019	289625	A	RPT	0
07/01/2019	2019	289625	A	RPT	0
10/01/2019	2019	289734	A	RPT	0.033
01/01/2020	2020	289734	A	RPT	0
10/01/2020	2020	323186	A	RPT	10.266
01/01/2021	2020	323186	A	RPT	0
07/01/2021	2021	337019	A	WEB	4.245 X
09/01/2021	2021	337019	A	WEB	0 X
01/01/2022	2022	341063	A	WEB	1.241 X
01/22/2022	2022	27158	A	RPT First Reading Replaced Meter	0

01/22/2022	2022	341077	A	RPT	Last reading for meter	0.004
04/01/2022	2022	30695	A	RPT		1.085

**YTD Meter Amounts:			Year	Amount
			2000	0
			2001	0
			2002	0.050
			2003	0.077
			2004	0.158
			2005	0.064
			2006	13.790
			2007	3.864
			2008	1.527
			2009	1.055
			2010	0
			2011	7.883
			2012	1.329
			2013	52.936
			2014	18.681
			2015	12.283
			2016	0
			2017	23.290
			2018	9.991
			2019	0.033
			2020	10.266
			2021	4.245
			2022	2.330

\*UTM location was derived from PLSS - see Help

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# New Mexico Office of the State Engineer

## Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RA 06436		3	1	4	12	19S	24E	543083	3615122*

x

**Driller License:** 406 **Driller Company:** TIDWELL, CLYDE J.

**Driller Name:**

<b>Drill Start Date:</b> 01/30/1979	<b>Drill Finish Date:</b> 02/04/1979	<b>Plug Date:</b>
<b>Log File Date:</b> 02/04/1979	<b>PCW Rcv Date:</b>	<b>Source:</b> Shallow
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b>
<b>Casing Size:</b>	<b>Depth Well:</b>	<b>Depth Water:</b> 300 feet

x

<b>Meter Number:</b> 4261	<b>Meter Make:</b> MCCROMETER
<b>Meter Serial Number:</b> 14-01823	<b>Meter Multiplier:</b> 100.0000
<b>Number of Dials:</b> 6	<b>Meter Type:</b> Diversion
<b>Unit of Measure:</b> Gallons	<b>Return Flow Percent:</b>
<b>Usage Multiplier:</b>	<b>Reading Frequency:</b> Quarterly

x

### Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
01/11/2000	2000	0	A	RPT		0	
07/11/2000	2000	0	A	RPT		0	
10/11/2000	2000	0	A	RPT		0	
01/03/2001	2000	0	A	RPT		0	
04/09/2001	2001	0	A	RPT		0	
07/09/2001	2001	0	A	RPT	not water used this quater	0	
01/23/2002	2001	16020	A	RPT		0	
04/04/2002	2002	16020	A	RPT		0	
07/06/2002	2002	23670	A	RPT		0.023	
10/09/2002	2002	26528	A	RPT		0.009	
01/14/2003	2002	32468	A	RPT		0.018	
04/16/2003	2003	35292	A	RPT		0.009	
08/18/2003	2003	53990	A	tw		0.057	
10/28/2003	2003	57574	A	tw		0.011	
01/08/2004	2004	57574	A	tw		0	
04/15/2004	2004	61694	A	sj		0.013	
07/06/2004	2004	61694	A	sj		0	
10/02/2004	2004	92200	A	sj		0.094	
01/10/2005	2004	108867	A	sj		0.051	
04/11/2005	2005	109923	A	RPT		0.003	
07/09/2005	2005	112043	A	RPT		0.007	
10/04/2005	2005	116328	A	RPT		0.013	
12/31/2005	2005	129760	A	ch		0.041	
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10/10/2007	2007	55501	A	RPT	0.153
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04/01/2014	2014	244217	A	RPT Corrected reading	0.275
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10/01/2014	2014	304194	A	RPT	9.976
07/01/2015	2015	344217	A	RPT	12.283
10/08/2015	2015	344217	A	RPT	0
01/01/2016	2016	344217	A	ap	0
04/01/2016	2016	344217	A	ap	0
07/01/2016	2016	344217	A	ap	0
10/01/2016	2016	344217	A	ap	0
01/01/2017	2017	344217	A	ap	0
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01/03/2018	2018	289625	A	ap	9.991
04/01/2018	2018	289625	A	ap	0
07/01/2018	2018	289625	A	ap	0
10/01/2018	2018	289625	A	RPT	0
01/01/2019	2019	289625	A	RPT	0
04/01/2019	2019	289625	A	RPT	0
07/01/2019	2019	289625	A	RPT	0
10/01/2019	2019	289734	A	RPT	0.033
01/01/2020	2020	289734	A	RPT	0
10/01/2020	2020	323186	A	RPT	10.266
01/01/2021	2020	323186	A	RPT	0
07/01/2021	2021	337019	A	WEB	4.245 X
09/01/2021	2021	337019	A	WEB	0 X
01/01/2022	2022	341063	A	WEB	1.241 X
01/22/2022	2022	27158	A	RPT First Reading Replaced Meter	0

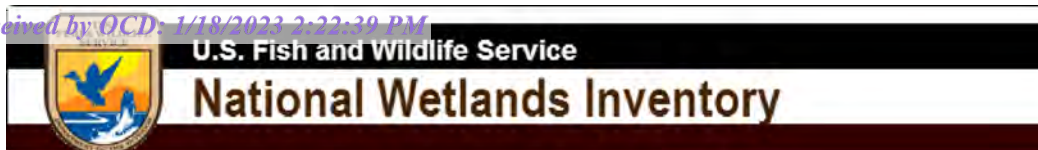


01/22/2022	2022	341077	A	RPT	Last reading for meter	0.004
04/01/2022	2022	30695	A	RPT		1.085

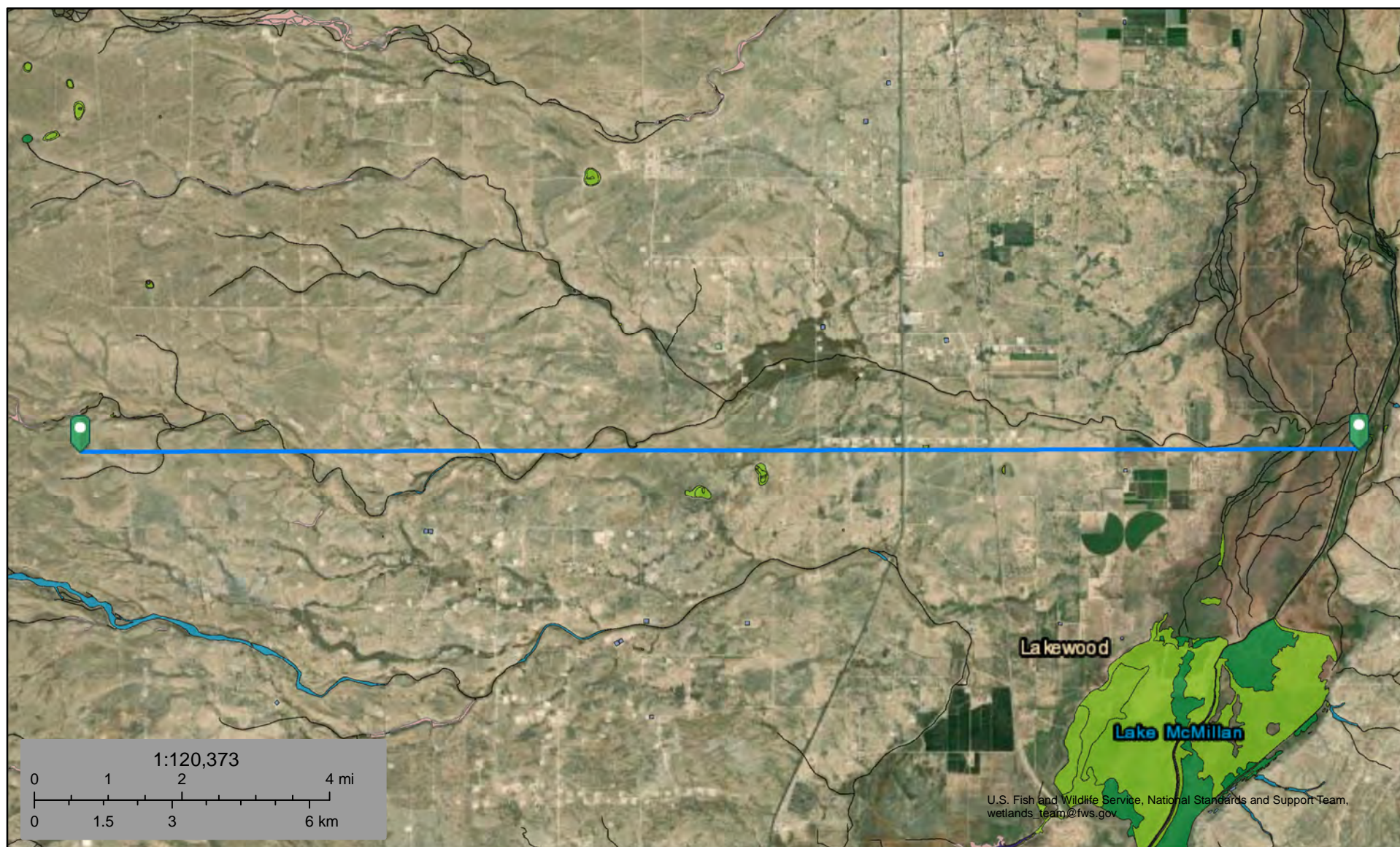
**YTD Meter Amounts:			Year	Amount
			2000	0
			2001	0
			2002	0.050
			2003	0.077
			2004	0.158
			2005	0.064
			2006	13.790
			2007	3.864
			2008	1.527
			2009	1.055
			2010	0
			2011	7.883
			2012	1.329
			2013	52.936
			2014	18.681
			2015	12.283
			2016	0
			2017	23.290
			2018	9.991
			2019	0.033
			2020	10.266
			2021	4.245
			2022	2.330

\*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.



## Routh SWD



June 27, 2022

**Wetlands**

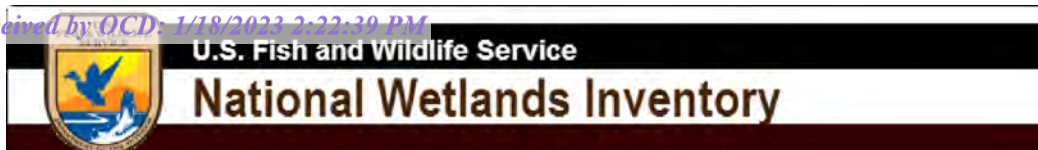
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine

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





## Routh SWD



June 27, 2022

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
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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.

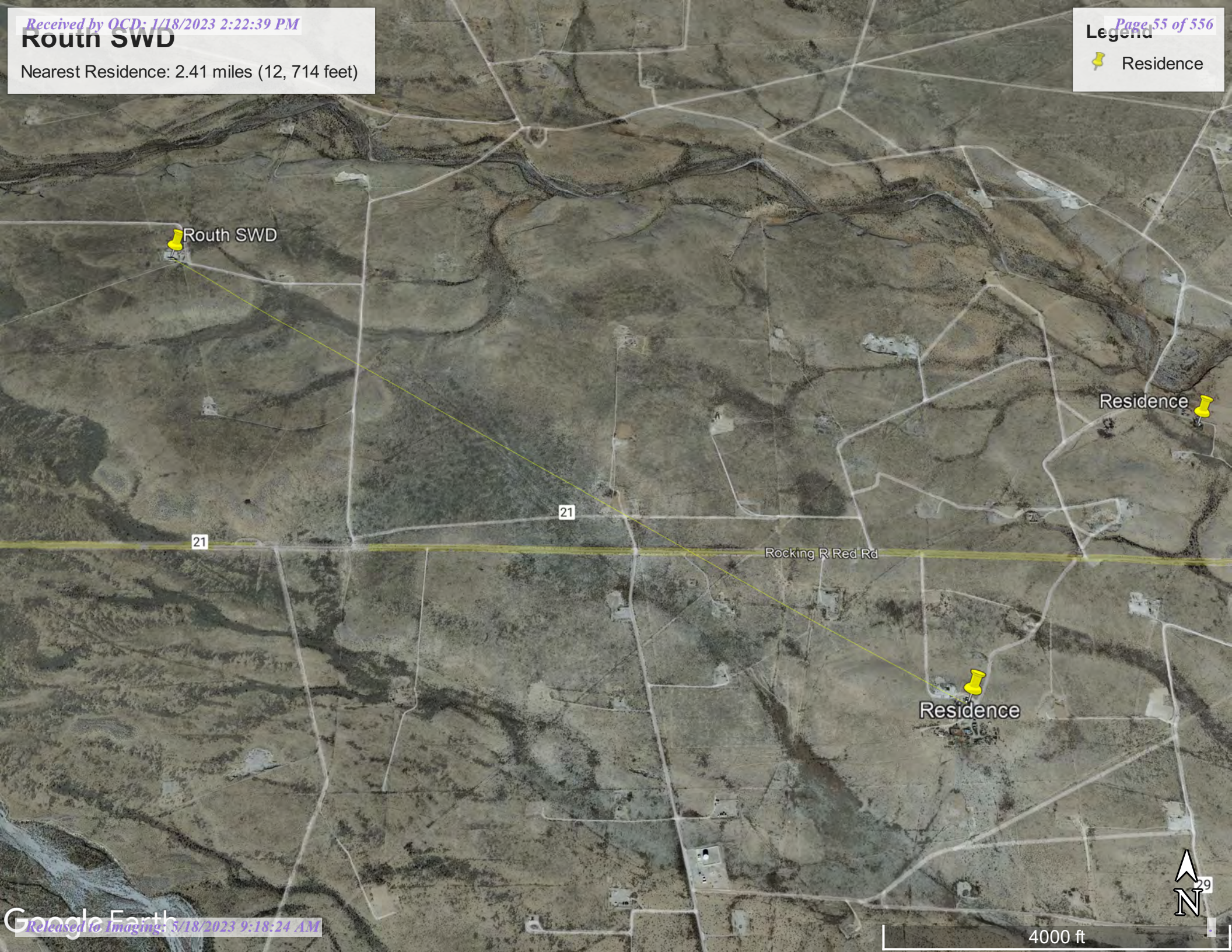


# Routh SWD

Nearest Residence: 2.41 miles (12, 714 feet)

## Legend

 Residence








# New Mexico Office of the State Engineer

## Water Right Summary

[get image list](#)

WR File Number:

RA 06436

Subbasin:

RA

Cross Reference:

-

Primary Purpose:

STK 72-12-1 LIVESTOCK WATERING

Primary Status:

DCL DECLARATION

Total Acres:

0

Subfile:

-

Header:

-

Total Diversion:

43.5

Cause/Case:

-



Owner:

JAMES H & BETTY R HOWELL REVOCABLE TRUST

Contact:


ALAN HOWELL

Documents on File

			Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
Trn #	Doc	File/Act	1	2		To				
 <a href="#">get images</a>	<a href="#">534919</a>	<a href="#">COWNF 2013-09-30</a>	CHG	PRC	RA 06436	T			0	
	<a href="#">207182</a>	<a href="#">COWNF 2001-02-28</a>	CHG	PRC	RA 06436	T			3	
	<a href="#">247678</a>	<a href="#">DCL 1995-09-19</a>	DCL	PRC	RA 06436	T		0	40.5	
	<a href="#">252693</a>	<a href="#">72121 1995-05-03</a>	PMT	MTR	RA 06436	T			3	
 <a href="#">get images</a>	<a href="#">207180</a>	<a href="#">72121 1979-01-25</a>	PMT	APR	RA 06436	T			3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q				X	Y	Other Location Desc
			64	Q16	Q4	Sec			
<a href="#">RA 06436</a>		Shallow	3	1	4	12	19S 24E	543083 3615122*	

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

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	
12/31/1929	DCL	0	43.5	<a href="#">RA 06436</a>	Shallow

Place of Use

Q Q		Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
256	64 Q16 Q4							
	Sec Tw				STK		DCL	NO PLACE OF USE GIVEN

Source

Acres	Diversion	CU	Use	Priority	Source Description
0	40.5		STK	12/31/1929	GW SHALLOW


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.

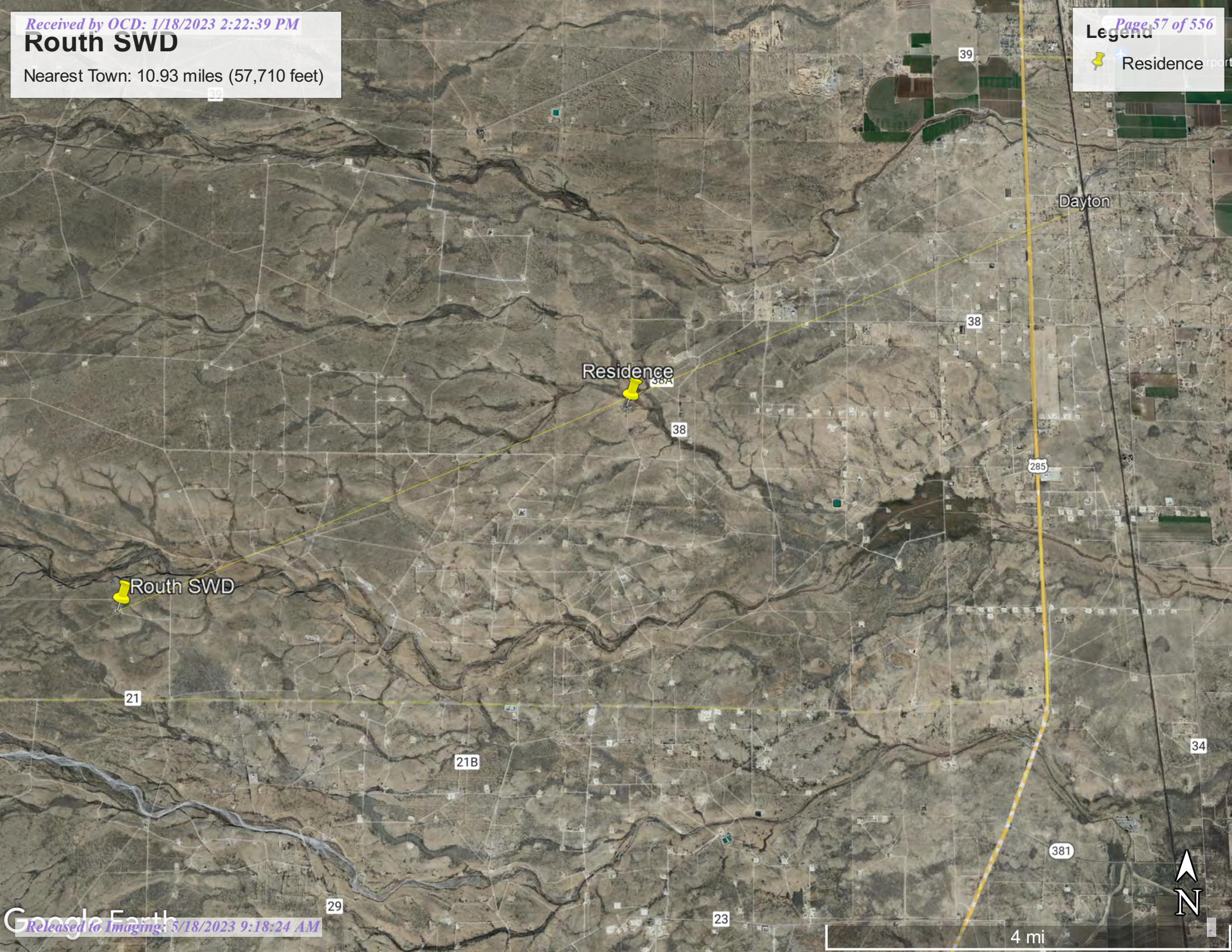


# Routh SWD

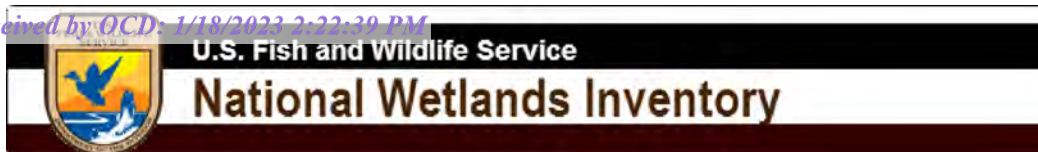
Nearest Town: 10.93 miles (57,710 feet)

## Legend

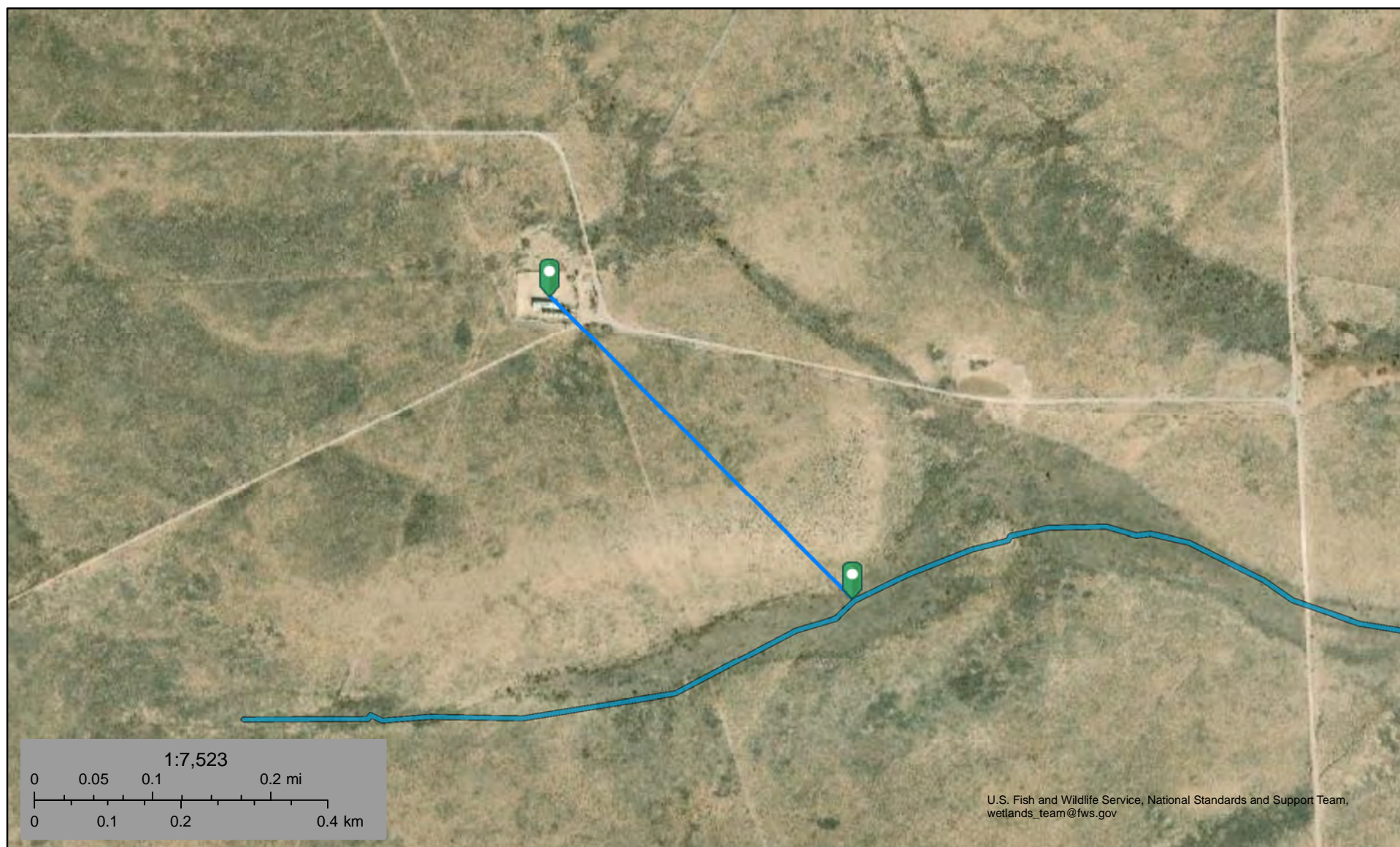
 Residence report







## Routh SWD



June 27, 2022

**Wetlands**

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

- Lake
- Other
- Riverine

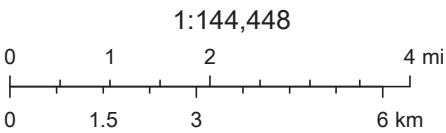
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# Routh SWD

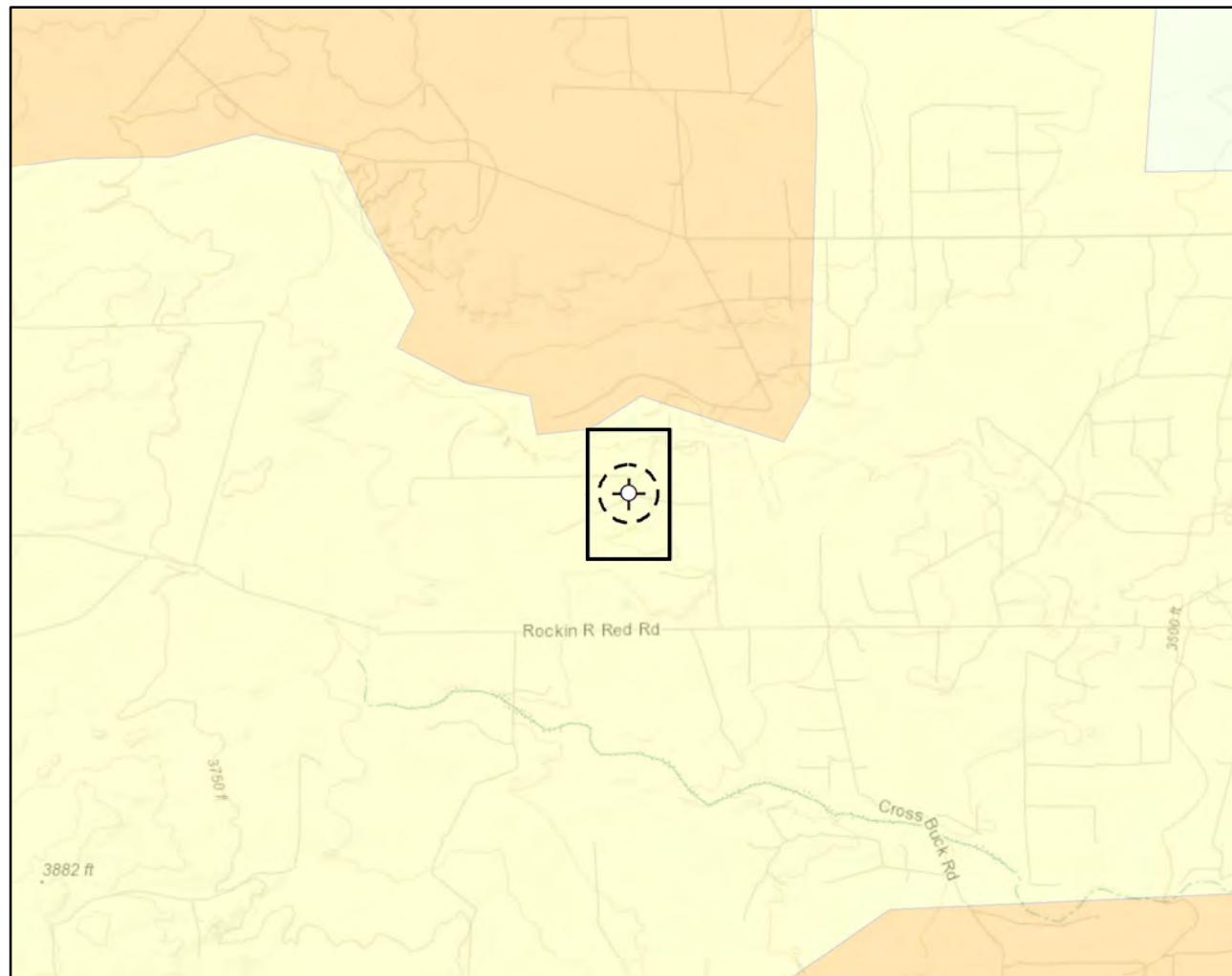


6/27/2022, 1:03:20 PM





National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Document Path: G:\Projects\US PROJECTS\EOG Resources Inc\22E-00716\Routh SWD Tank Battery\Figure X Routh SWD Tank Battery.mxd



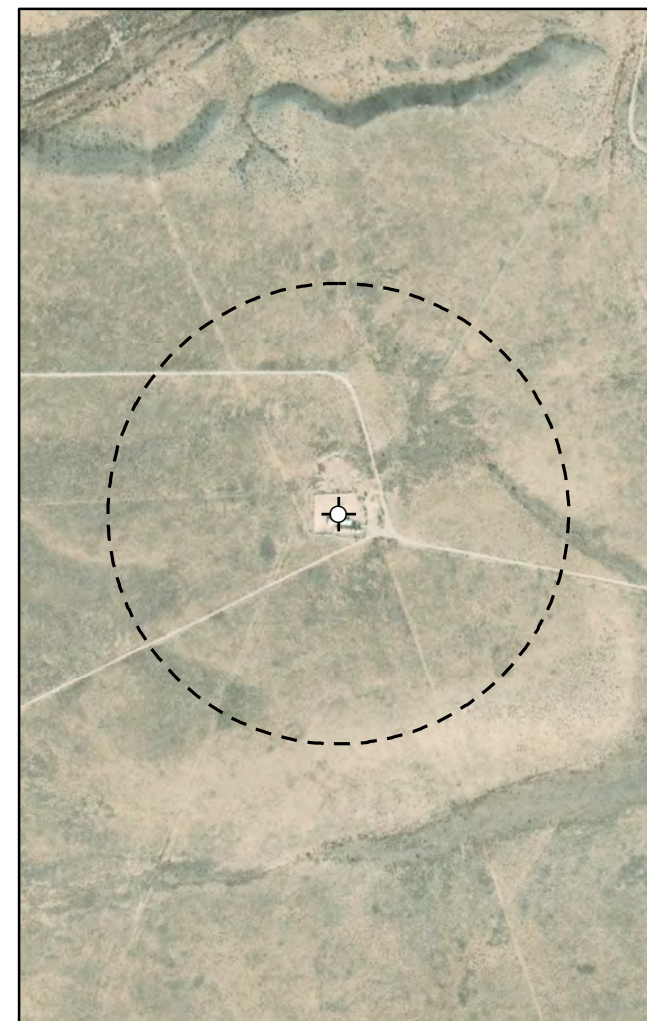
#### Karst Potential

- Critical
- High
- Medium
- Low

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

#### Overview Map

0 0.25 0.5 1 mi



#### Detail Map

0 150 300 600 ft.



Map Center:  
Lat/Long: 32.666419, -104.556698

NAD 1983 UTM Zone 13N  
Date: Jun 29/22



#### Karst Potential Schematic Routh SWD Tank Battery

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 2018; 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.



# National Flood Hazard Layer FIRMette



104°33'43"W 32°40'14"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000 104°33'5"W 32°39'44"N

Released to Imaging: 5/18/2023 9:18:24 AM

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/27/2022 at 2:50 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico



Natural Resources  
Conservation Service


Web Soil Survey  
National Cooperative Soil Survey

6/27/2022  
Page 1 of 3

## Soil Map—Eddy Area, New Mexico

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)

## Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

## Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

## Water Features



Streams and Canals

## Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

## Background



Aerial Photography

## MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 17, Sep 12, 2021

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

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

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



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UR	Upton-Reagan complex, 0 to 9 percent slopes	3.7	100.0%
Totals for Area of Interest		3.7	100.0%

Map Unit Description: Upton-Reagan complex, 0 to 9 percent slopes---Eddy Area, New Mexico

---

## Eddy Area, New Mexico

### UR—Upton-Reagan complex, 0 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1w65

*Elevation:* 1,100 to 5,400 feet

*Mean annual precipitation:* 6 to 15 inches

*Mean annual air temperature:* 60 to 70 degrees F

*Frost-free period:* 180 to 240 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Upton and similar soils:* 55 percent

*Reagan and similar soils:* 35 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Upton

##### Setting

*Landform:* Ridges, fans

*Landform position (three-dimensional):* Side slope, rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from limestone

##### Typical profile

*H1 - 0 to 9 inches:* gravelly loam

*H2 - 9 to 13 inches:* gravelly loam

*H3 - 13 to 21 inches:* cemented

*H4 - 21 to 60 inches:* very gravelly loam

##### Properties and qualities

*Slope:* 0 to 9 percent

*Depth to restrictive feature:* 7 to 20 inches to petrocalcic

*Drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high (0.01 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 75 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified



Map Unit Description: Upton-Reagan complex, 0 to 9 percent slopes---Eddy Area, New Mexico

---

*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: R042XC025NM - Shallow*  
*Hydric soil rating: No*

## Description of Reagan

### Setting

*Landform: Fan remnants, alluvial fans*  
*Landform position (three-dimensional): Rise*  
*Down-slope shape: Convex, linear*  
*Across-slope shape: Linear*  
*Parent material: Alluvium and/or eolian deposits*

### Typical profile

*H1 - 0 to 8 inches: loam*  
*H2 - 8 to 60 inches: loam*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Runoff class: Low*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 40 percent*  
*Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)*  
*Sodium adsorption ratio, maximum: 1.0*  
*Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)*

### Interpretive groups

*Land capability classification (irrigated): 2e*  
*Land capability classification (nonirrigated): 6e*  
*Hydrologic Soil Group: B*  
*Ecological site: R042XC007NM - Loamy*  
*Hydric soil rating: No*

## Minor Components

### Reagan

*Percent of map unit: 5 percent*  
*Ecological site: R042XC007NM - Loamy*  
*Hydric soil rating: No*

### Pima

*Percent of map unit: 5 percent*  
*Ecological site: R042XC017NM - Bottomland*

Map Unit Description: Upton-Reagan complex, 0 to 9 percent slopes---Eddy Area, New Mexico

---

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 17, Sep 12, 2021

## Ecological Reference Worksheet

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

**Contact for lead author :** 505-761-4488

**Reference site used? Yes/No**

No

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**14. Average percent litter cover ( \_\_\_\_\_ % ) and depth ( \_\_\_\_\_ inches).**

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

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

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

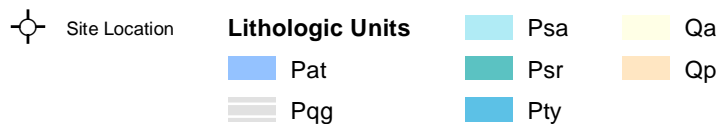
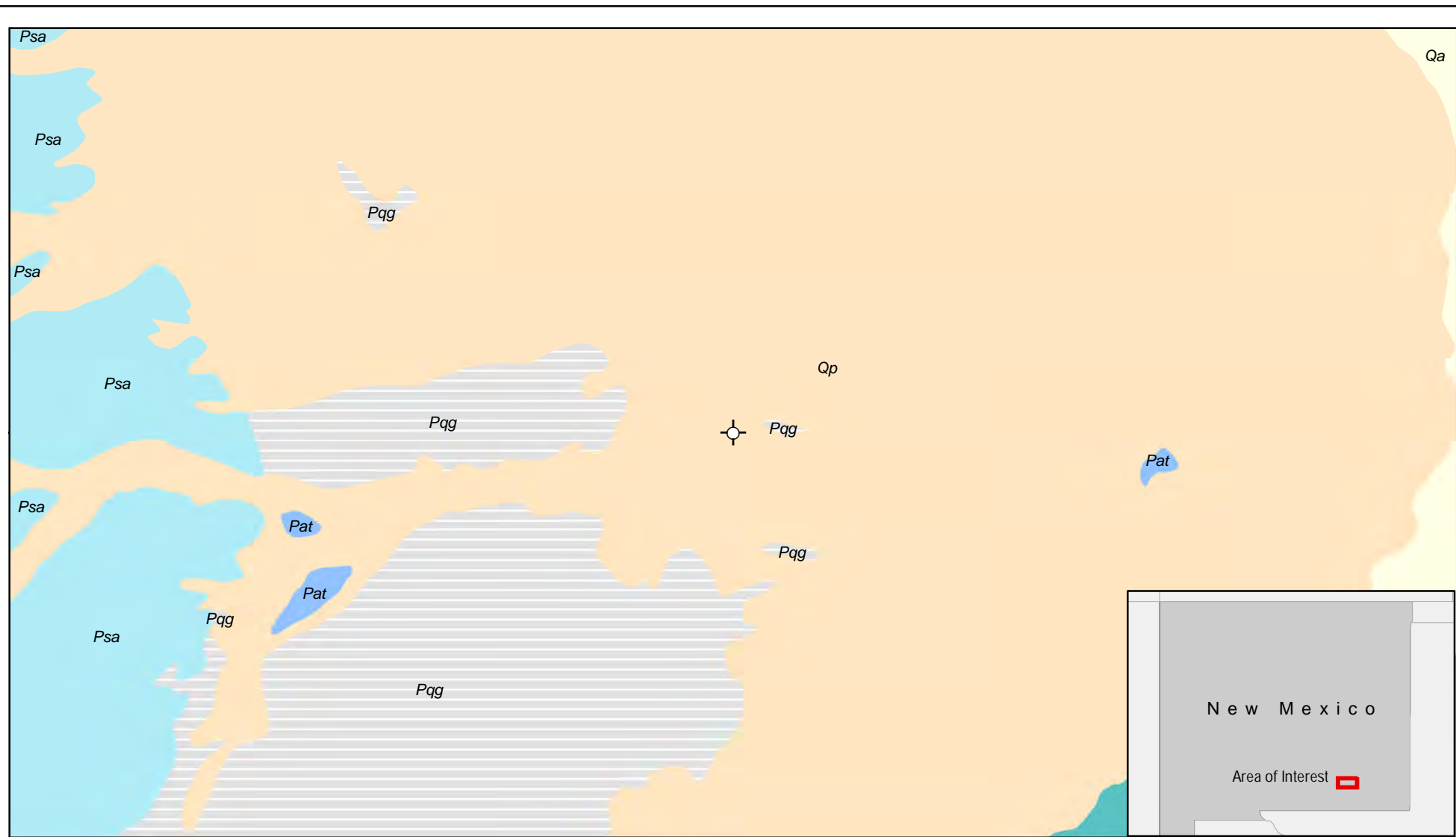
**16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do, continue to increase regardless of the management of the site and may eventually dominate**

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

**17. Perennial plant reproductive capability :**

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

Document Path: G:\Projects\US PROJECTS\EOG Resources Inc\22E-00716Routh SWD Tank Battery\Figure G Geology Routh SWD Tank Battery.mxd



0 1.5 3 Miles

Map Center:  
Lat/Long: 34.326031, -105.904176

Date: Jun 30/22



## New Mexico Geology Routh Deep SWD #2

FIGURE:

G



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

Note: Geology data sourced from New Mexico Bureau of Geology & Mineral Resources, Bureau of Land Management.

VERSATILITY. EXPERTISE.



## **ATTACHMENT 6**

## Monica Peppin

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** Thursday, July 21, 2022 10:23 AM  
**To:** Monica Peppin  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, July 21, 2022 10:16 AM  
**To:** Alan & Cheryl <ahowell@pvt.net>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 8:00 a.m. on Tuesday, July 26, 2022 and continue through Friday, July 29, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

## Monica Peppin

---

**From:** Yvette Moore <Yvette\_Moore@eogresources.com>  
**Sent:** Friday, July 29, 2022 11:40 AM  
**To:** Monica Peppin  
**Subject:** FW: Routh Deep SWD #2 (nAPP2218654480) Sampling notification

---

**Subject:** Routh Deep SWD #2 (nAPP2218654480) Sampling notification

Good Afternoon,

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

Routh Deep SWD #2  
14-19S-24E; Eddy County, NM  
nAPP2218654480

Sampling will begin at 7:00 a.m. on Monday, August 1, 2022 and continue through Friday, August 5, 2022.

Thank you,

*Miriam Morales*

## Monica Peppin

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** Thursday, August 4, 2022 1:17 PM  
**To:** Monica Peppin  
**Cc:** Michael Moffitt  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, August 4, 2022 1:12 PM  
**To:** Alan & Cheryl <ahowell@pvt.nm.us>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
B-14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 1:30 p.m. on Monday, August 8, 2022 and continue through Friday, August 12, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

## Monica Peppin

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** August 15, 2022 12:18 PM  
**To:** Monica Peppin; Michael Moffitt  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, August 11, 2022 8:38 AM  
**To:** Alan & Cheryl <ahowell@pvt.n.net>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
B-14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 8:00 a.m. on Monday, August 15, 2022 and continue through Friday, August 19, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*





**From:** [Chase Settle](#)  
**To:** [Michael Moffitt](#); [Monica Peppin](#)  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification  
**Date:** August 26, 2022 9:18:35 AM  
**Attachments:** [image001.png](#)

---

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, August 25, 2022 7:25 AM  
**To:** Alan & Cheryl <ahowell@pvt.n.net>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
B-14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 8:00 a.m. on Monday, August 29, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**From:** [Chase Settle](#)  
**To:** [Michael Moffitt](#); [Monica Peppin](#)  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification  
**Date:** September 19, 2022 11:32:39 AM  
**Attachments:** [image001.png](#)

---

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, August 18, 2022 10:43 AM  
**To:** Alan & Cheryl <ahowell@pvt.n.net>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 9:30 a.m. on Monday, August 22, 2022 and continue through Tuesday, August 23, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

## Monica Peppin

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** September 15, 2022 8:31 AM  
**To:** Michael Moffitt  
**Cc:** Monica Peppin  
**Subject:** FW: Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, September 15, 2022 8:09 AM  
**To:** Alan & Cheryl <ahowell@pvt.n.net>; Austin Weyant <austin@atkinseng.com>; Jennifer Nobui <Jennifer.Nobui@state.nm.us>; Jocelyn Harimon <Jocelyn.Harimon@state.nm.us>; Mike Bratcher <mike.bratcher@state.nm.us>; Robert Hamlet <Robert.Hamlet@state.nm.us>  
**Cc:** Andrea Felix <Andrea\_Felix@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Michael Yemm <Michael\_Yemm@eogresources.com>; Terrence Gant <Terry\_Gant@eogresources.com>  
**Subject:** Routh Deep SWD 2 (nAPP2218654480) Sampling Notification

Good Morning,

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

Routh Deep SWD 2  
B-14-19S-24E  
Eddy County, NM  
nAPP2218654480

Sampling will begin at 8:00 a.m. on Monday, September 19, 2022 and continue through Friday, September 23, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



## **ATTACHMENT 7**





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

July 19, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2207414

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/12/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2207414

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-07

Project: Routh SWD Tank Battery

Collection Date: 7/8/2022 8:30:00 AM

Lab ID: 2207414-001

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/14/2022 11:18:41 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/14/2022 11:18:41 PM
Surr: DNOP	88.4	51.1-141		%Rec	1	7/14/2022 11:18:41 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/15/2022 4:10:19 AM
Surr: BFB	96.9	37.7-212		%Rec	1	7/15/2022 4:10:19 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/15/2022 4:10:19 AM
Toluene	ND	0.049		mg/Kg	1	7/15/2022 4:10:19 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/15/2022 4:10:19 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/15/2022 4:10:19 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/15/2022 4:10:19 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	360	60		mg/Kg	20	7/16/2022 12:49:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 1 of 9

## Analytical Report

Lab Order 2207414

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-08

Project: Routh SWD Tank Battery

Collection Date: 7/8/2022 9:00:00 AM

Lab ID: 2207414-002

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/14/2022 11:32:54 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/14/2022 11:32:54 PM
Surr: DNOP	81.2	51.1-141		%Rec	1	7/14/2022 11:32:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/15/2022 4:33:58 AM
Surr: BFB	96.0	37.7-212		%Rec	1	7/15/2022 4:33:58 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/15/2022 4:33:58 AM
Toluene	ND	0.049		mg/Kg	1	7/15/2022 4:33:58 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/15/2022 4:33:58 AM
Xylenes, Total	ND	0.098		mg/Kg	1	7/15/2022 4:33:58 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/15/2022 4:33:58 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	350	60		mg/Kg	20	7/16/2022 1:26:40 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207414

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-09

Project: Routh SWD Tank Battery

Collection Date: 7/8/2022 9:15:00 AM

Lab ID: 2207414-003

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/14/2022 11:47:10 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/14/2022 11:47:10 PM
Surr: DNOP	81.6	51.1-141		%Rec	1	7/14/2022 11:47:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2022 2:24:55 AM
Surr: BFB	98.8	37.7-212		%Rec	1	7/16/2022 2:24:55 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2022 2:24:55 AM
Toluene	ND	0.048		mg/Kg	1	7/16/2022 2:24:55 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2022 2:24:55 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/16/2022 2:24:55 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/16/2022 2:24:55 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	310	59		mg/Kg	20	7/16/2022 1:39:04 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2207414

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-10

Project: Routh SWD Tank Battery

Collection Date: 7/8/2022 9:30:00 AM

Lab ID: 2207414-004

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/15/2022 12:01:24 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/15/2022 12:01:24 AM
Surr: DNOP	115	51.1-141		%Rec	1	7/15/2022 12:01:24 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/16/2022 2:48:32 AM
Surr: BFB	95.5	37.7-212		%Rec	1	7/16/2022 2:48:32 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	7/16/2022 2:48:32 AM
Toluene	ND	0.046		mg/Kg	1	7/16/2022 2:48:32 AM
Ethylbenzene	ND	0.046		mg/Kg	1	7/16/2022 2:48:32 AM
Xylenes, Total	ND	0.093		mg/Kg	1	7/16/2022 2:48:32 AM
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	7/16/2022 2:48:32 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	180	60		mg/Kg	20	7/16/2022 1:51:29 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 4 of 9

## Analytical Report

Lab Order 2207414

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-11

Project: Routh SWD Tank Battery

Collection Date: 7/8/2022 9:45:00 AM

Lab ID: 2207414-005

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/15/2022 12:15:39 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/15/2022 12:15:39 AM
Surr: DNOP	98.6	51.1-141		%Rec	1	7/15/2022 12:15:39 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2022 3:59:23 AM
Surr: BFB	96.4	37.7-212		%Rec	1	7/16/2022 3:59:23 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/16/2022 3:59:23 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2022 3:59:23 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2022 3:59:23 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/16/2022 3:59:23 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/16/2022 3:59:23 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	430	60		mg/Kg	20	7/16/2022 5:38:08 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2207414

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-68826</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68826</b>		RunNo: <b>89565</b>							
Prep Date: <b>7/16/2022</b>	Analysis Date: <b>7/16/2022</b>		SeqNo: <b>3188064</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-68826</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68826</b>		RunNo: <b>89565</b>							
Prep Date: <b>7/16/2022</b>	Analysis Date: <b>7/16/2022</b>		SeqNo: <b>3188065</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			

Sample ID: <b>MB-68821</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68821</b>		RunNo: <b>89568</b>							
Prep Date: <b>7/15/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3188216</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-68821</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68821</b>		RunNo: <b>89568</b>							
Prep Date: <b>7/15/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3188217</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			

**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 range due to dilution or matrix interference

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

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

WO#: 2207414

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-68751</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68751</b>		RunNo: <b>89486</b>							
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3186456</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		83.3	51.1	141			

Sample ID: <b>LCS-68751</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68751</b>		RunNo: <b>89486</b>							
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3186457</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	15	50.00	0	81.7	64.4	127			
Surr: DNOP	3.8		5.000		76.0	51.1	141			

**Qualifiers:**

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



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

WO#: 2207414

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-68721</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3184960</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1800		1000		180	37.7	212			

Sample ID: <b>mb-68721</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3184961</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	820		1000		82.4	37.7	212			

Sample ID: <b>lcs-68726</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3184981</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	87.9	72.3	137			
Surr: BFB	1800		1000		180	37.7	212			

Sample ID: <b>mb-68726</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3184982</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	830		1000		83.2	37.7	212			

**Qualifiers:**

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

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

WO#: 2207414

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-68721</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3185011</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.83		1.000		83.5	70	130			

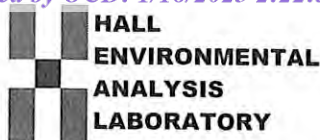
Sample ID: <b>mb-68721</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3185012</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.82		1.000		81.9	70	130			

Sample ID: <b>ics-68726</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3185032</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.3	80	120			
Toluene	0.92	0.050	1.000	0	91.8	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.5	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.9	80	120			
Surr: 4-Bromofluorobenzene	0.83		1.000		83.2	70	130			

Sample ID: <b>mb-68726</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3185033</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	0.83		1.000		82.7	70	130			

**Qualifiers:**

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



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: 2207414

RcptNo: 1

Received By: Cheyenne Cason 7/12/2022 7:20:00 AM

Completed By: Sean Livingston 7/12/2022 8:17:32 AM

Reviewed By: JN 7/12/22

*Handwritten signatures: Cason, Sean Livingston*

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: KPL 7.12.22

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good				
2	0.9	Good				
3	2.5	Good				



22/11/22	1900	Arriving
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373-1  
 373-2  
 373-3

Chase Settle

Chester 7/12/22 0720

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.

22/11/22	1900	Arriving
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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.

Chester 7/12/22 0720

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





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

July 19, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2207416

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/12/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-01 6-10'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 1:35:00 PM

Lab ID: 2207416-001

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/15/2022 12:29:47 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/15/2022 12:29:47 AM
Surr: DNOP	85.4	51.1-141		%Rec	1	7/15/2022 12:29:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/16/2022 4:23:02 AM
Surr: BFB	96.3	37.7-212		%Rec	1	7/16/2022 4:23:02 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	7/16/2022 4:23:02 AM
Toluene	ND	0.047		mg/Kg	1	7/16/2022 4:23:02 AM
Ethylbenzene	ND	0.047		mg/Kg	1	7/16/2022 4:23:02 AM
Xylenes, Total	ND	0.094		mg/Kg	1	7/16/2022 4:23:02 AM
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	7/16/2022 4:23:02 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	190	59		mg/Kg	20	7/16/2022 6:15:09 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-02 5-10'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 9:40:00 AM

Lab ID: 2207416-002

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/15/2022 12:43:55 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/15/2022 12:43:55 AM
Surr: DNOP	80.4	51.1-141		%Rec	1	7/15/2022 12:43:55 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/16/2022 4:46:38 AM
Surr: BFB	95.4	37.7-212		%Rec	1	7/16/2022 4:46:38 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2022 4:46:38 AM
Toluene	ND	0.048		mg/Kg	1	7/16/2022 4:46:38 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/16/2022 4:46:38 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/16/2022 4:46:38 AM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	7/16/2022 4:46:38 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	230	60		mg/Kg	20	7/16/2022 6:27:29 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-03 5-10'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 9:45:00 AM

Lab ID: 2207416-003

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/15/2022 12:58:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/15/2022 12:58:07 AM
Surr: DNOP	82.0	51.1-141		%Rec	1	7/15/2022 12:58:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/16/2022 5:10:11 AM
Surr: BFB	96.6	37.7-212		%Rec	1	7/16/2022 5:10:11 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	7/16/2022 5:10:11 AM
Toluene	ND	0.047		mg/Kg	1	7/16/2022 5:10:11 AM
Ethylbenzene	ND	0.047		mg/Kg	1	7/16/2022 5:10:11 AM
Xylenes, Total	ND	0.094		mg/Kg	1	7/16/2022 5:10:11 AM
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	7/16/2022 5:10:11 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	580	60		mg/Kg	20	7/16/2022 7:29:11 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-04 6'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 1:30:00 PM

Lab ID: 2207416-004

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	22	15		mg/Kg	1	7/15/2022 1:12:09 AM
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	7/15/2022 1:12:09 AM
Surr: DNOP	79.1	51.1-141		%Rec	1	7/15/2022 1:12:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/16/2022 5:33:45 AM
Surr: BFB	99.0	37.7-212		%Rec	1	7/16/2022 5:33:45 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	7/16/2022 5:33:45 AM
Toluene	ND	0.046		mg/Kg	1	7/16/2022 5:33:45 AM
Ethylbenzene	ND	0.046		mg/Kg	1	7/16/2022 5:33:45 AM
Xylenes, Total	ND	0.091		mg/Kg	1	7/16/2022 5:33:45 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/16/2022 5:33:45 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	200	60		mg/Kg	20	7/16/2022 7:41:32 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-05 10'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 9:30:00 AM

Lab ID: 2207416-005

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/15/2022 1:26:23 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/15/2022 1:26:23 AM
Surr: DNOP	78.8	51.1-141		%Rec	1	7/15/2022 1:26:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2022 5:57:25 AM
Surr: BFB	97.8	37.7-212		%Rec	1	7/16/2022 5:57:25 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/16/2022 5:57:25 AM
Toluene	ND	0.049		mg/Kg	1	7/16/2022 5:57:25 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2022 5:57:25 AM
Xylenes, Total	ND	0.099		mg/Kg	1	7/16/2022 5:57:25 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/16/2022 5:57:25 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	180	60		mg/Kg	20	7/16/2022 7:53:52 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207416

Date Reported: 7/19/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-06 10'

Project: Routh SWD Tank Battery

Collection Date: 7/7/2022 9:35:00 AM

Lab ID: 2207416-006

Matrix: SOIL

Received Date: 7/12/2022 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/15/2022 8:09:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/15/2022 8:09:21 PM
Surr: DNOP	73.3	51.1-141		%Rec	1	7/15/2022 8:09:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/15/2022 11:29:00 AM
Surr: BFB	86.3	37.7-212		%Rec	1	7/15/2022 11:29:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	7/15/2022 11:29:00 AM
Toluene	ND	0.049		mg/Kg	1	7/15/2022 11:29:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/15/2022 11:29:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	7/15/2022 11:29:00 AM
Surr: 4-Bromofluorobenzene	83.9	70-130		%Rec	1	7/15/2022 11:29:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	170	60		mg/Kg	20	7/16/2022 8:06:14 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207416

19-Jul-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: MB-68832	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 68832	RunNo: 89565								
Prep Date: 7/16/2022	Analysis Date: 7/16/2022	SeqNo: 3188094 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-68832	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 68832	RunNo: 89565								
Prep Date: 7/16/2022	Analysis Date: 7/16/2022	SeqNo: 3188095 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



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

WO#: 2207416

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-68752</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>68752</b>	RunNo: <b>89486</b>								
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>	SeqNo: <b>3186430</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		80.8	51.1	141			

Sample ID: <b>LCS-68752</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>68752</b>	RunNo: <b>89486</b>								
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>	SeqNo: <b>3186431</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	50.00	0	88.3	64.4	127			
Surr: DNOP	3.8		5.000		76.1	51.1	141			

Sample ID: <b>MB-68751</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>68751</b>	RunNo: <b>89486</b>								
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>	SeqNo: <b>3186456</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		83.3	51.1	141			

Sample ID: <b>LCS-68751</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>68751</b>	RunNo: <b>89486</b>								
Prep Date: <b>7/13/2022</b>	Analysis Date: <b>7/14/2022</b>	SeqNo: <b>3186457</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	15	50.00	0	81.7	64.4	127			
Surr: DNOP	3.8		5.000		76.0	51.1	141			

**Qualifiers:**

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

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

WO#: 2207416

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-68721</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>68721</b>				RunNo: <b>89504</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>				SeqNo: <b>3184960</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1800		1000		180	37.7	212			

Sample ID: <b>mb-68721</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>68721</b>				RunNo: <b>89504</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>				SeqNo: <b>3184961</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	820		1000		82.4	37.7	212			

Sample ID: <b>lcs-68726</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>68726</b>				RunNo: <b>89504</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>				SeqNo: <b>3184981</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	87.9	72.3	137			
Surr: BFB	1800		1000		180	37.7	212			

Sample ID: <b>mb-68726</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>68726</b>				RunNo: <b>89504</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>				SeqNo: <b>3184982</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	830		1000		83.2	37.7	212			

Sample ID: <b>mb-68728</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>68728</b>				RunNo: <b>89532</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>				SeqNo: <b>3186586</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	830		1000		83.0	37.7	212			

Sample ID: <b>2207416-006ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>TP22-06 10'</b>	Batch ID: <b>68728</b>				RunNo: <b>89532</b>					
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>				SeqNo: <b>3186588</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.7	23.56	0	80.4	70	130			
Surr: BFB	1600		942.5		173	37.7	212			

**Qualifiers:**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207416

19-Jul-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: 2207416-006amsd		SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range					
Client ID: TP22-06 10'		Batch ID: 68728			RunNo: 89532					
Prep Date: 7/12/2022		Analysis Date: 7/15/2022			SeqNo: 3186589		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.7	23.65	0	84.8	70	130	5.80	20	
Surr: BFB	1800		946.1		186	37.7	212	0	0	

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 10 of 12

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

WO#: 2207416

19-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-68721</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3185011</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.83		1.000		83.5	70	130			

Sample ID: <b>mb-68721</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68721</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/14/2022</b>		SeqNo: <b>3185012</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.82		1.000		81.9	70	130			

Sample ID: <b>ics-68726</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3185032</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.3	80	120			
Toluene	0.92	0.050	1.000	0	91.8	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.5	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.9	80	120			
Surr: 4-Bromofluorobenzene	0.83		1.000		83.2	70	130			

Sample ID: <b>mb-68726</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68726</b>		RunNo: <b>89504</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3185033</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	0.83		1.000		82.7	70	130			

Sample ID: <b>mb-68728</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>68728</b>		RunNo: <b>89532</b>							
Prep Date: <b>7/12/2022</b>	Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3186634</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								

**Qualifiers:**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207416  
19-Jul-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: <b>mb-68728</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>		Batch ID: <b>68728</b>		RunNo: <b>89532</b>						
Prep Date: <b>7/12/2022</b>		Analysis Date: <b>7/15/2022</b>		SeqNo: <b>3186634</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.85		1.000		84.7	70	130			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

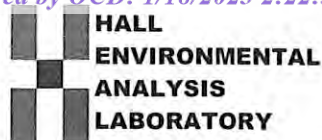
E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit





Hall Environmental Analysis Laboratory  
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: 2207416

RcptNo: 1

Received By: Cheyenne Cason 7/12/2022 7:20:00 AM

Completed By: Sean Livingston 7/12/2022 8:26:38 AM

Reviewed By: JR 7/12/22

*Handwritten signature*

*Handwritten signature*

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *KRC 7.12.22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good				
2	0.9	Good				
3	2.5	Good				

## Chain-of-Custody Record

Client: Vertex (EOG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 day

Project Name:

Routh S&W Tank Battery

Project #:

22E-00716-10

Project Manager:

Monica PeppinSampler: Zach EnglebertOn Ice: ☒ Yes ☐ No# of Coolers: 3 0.0-0.0=0.6Cooler Temp (including CF): 0.9-0.0=0.9 (°C)

Container Type and #

Preservative Type

HEAL No.

14oz jar ice

001

002

003

004

005

006

Date: 7/7 Time: 4:30Relinquished by: Sally CarterDate: 7/7 Time: 10:00Relinquished by: MonicaDate: 7/11/23 Time: 13:30Date: 7/12/23 Time: 07:20Received by: Monica Via: carReceived by: Monica Via: car

Remarks:

direct bill EOG

## Analysis Request

TPH:8015D(GRO / DRO / MRO)

BTX: MTBE / TMBs (8021)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl<sup>-</sup>, Br<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)



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

July 25, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2207745

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/15/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2207745

Date Reported: 7/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-11 0'

Project: Routh SWD Tank Battery

Collection Date: 7/13/2022 11:20:00 AM

Lab ID: 2207745-001

Matrix: SOIL

Received Date: 7/15/2022 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/19/2022 7:33:45 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/19/2022 7:33:45 PM
Surr: DNOP	53.0	51.1-141		%Rec	1	7/19/2022 7:33:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/19/2022 6:09:00 PM
Surr: BFB	96.6	37.7-212		%Rec	1	7/19/2022 6:09:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	7/19/2022 6:09:00 PM
Toluene	ND	0.049		mg/Kg	1	7/19/2022 6:09:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/19/2022 6:09:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	7/19/2022 6:09:00 PM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	7/19/2022 6:09:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	290	60		mg/Kg	20	7/20/2022 12:49:16 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207745

25-Jul-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: MB-68909	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 68909	RunNo: 89636								
Prep Date: 7/20/2022	Analysis Date: 7/20/2022	SeqNo: 3192269	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-68909	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 68909	RunNo: 89636								
Prep Date: 7/20/2022	Analysis Date: 7/20/2022	SeqNo: 3192270	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



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

WO#: 2207745

25-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-68872</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>68872</b>	RunNo: <b>89602</b>								
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>	SeqNo: <b>3191316</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.2		10.00		81.9	51.1	141			

Sample ID: <b>LCS-68872</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>68872</b>	RunNo: <b>89602</b>								
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>	SeqNo: <b>3191317</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	15	50.00	0	84.5	64.4	127			
Surr: DNOP	3.3		5.000		66.6	51.1	141			

Sample ID: <b>MB-68860</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>68860</b>	RunNo: <b>89602</b>								
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>	SeqNo: <b>3191354</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.6		10.00		55.9	51.1	141			

Sample ID: <b>LCS-68860</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>68860</b>	RunNo: <b>89642</b>								
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/20/2022</b>	SeqNo: <b>3192049</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	51.1	141			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2207745

25-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-68856</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>68856</b>			RunNo: <b>89616</b>						
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>			SeqNo: <b>3190178</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	95.5	72.3	137			
Surr: BFB	2000		1000		197	37.7	212			

Sample ID: <b>mb-68856</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>68856</b>			RunNo: <b>89616</b>						
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>			SeqNo: <b>3190179</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		99.8	37.7	212			

**Qualifiers:**

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

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

WO#: 2207745

25-Jul-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

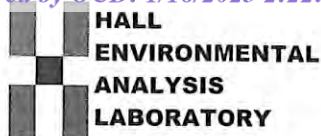
Sample ID: <b>ics-68856</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>68856</b>			RunNo: <b>89616</b>						
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>			SeqNo: <b>3190226</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.9	80	120			
Toluene	0.96	0.050	1.000	0	95.6	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.5	70	130			

Sample ID: <b>mb-68856</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>68856</b>			RunNo: <b>89616</b>						
Prep Date: <b>7/18/2022</b>	Analysis Date: <b>7/19/2022</b>			SeqNo: <b>3190227</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		96.0	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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



Hall Environmental Analysis Laboratory  
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: **2207745**

RcptNo: 1

Received By: **Juan Rojas**

7/15/2022 7:45:00 AM

*Juan Rojas*

Completed By: **Cheyenne Cason**

7/15/2022 9:28:33 AM

*Cheyenne Cason*

Reviewed By: *KPC*

7.15.22

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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:

JO

7/15/22

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			









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

August 04, 2022

Monica Peppin

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2207E17

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 7 sample(s) on 7/28/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-02

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:10:00 PM

Lab ID: 2207E17-001

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	340	60		mg/Kg	20	8/1/2022 9:37:01 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	15	15		mg/Kg	1	8/1/2022 3:29:19 PM	69157
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2022 3:29:19 PM	69157
Surr: DNOP	73.4	21-129		%Rec	1	8/1/2022 3:29:19 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 12:59:08 PM	69132
Surr: BFB	102	37.7-212		%Rec	1	7/29/2022 12:59:08 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	7/29/2022 12:59:08 PM	69132
Toluene	ND	0.049		mg/Kg	1	7/29/2022 12:59:08 PM	69132
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 12:59:08 PM	69132
Xylenes, Total	ND	0.098		mg/Kg	1	7/29/2022 12:59:08 PM	69132
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	7/29/2022 12:59:08 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-03

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:30:00 PM

Lab ID: 2207E17-002

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	210	60		mg/Kg	20	8/1/2022 9:49:22 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/1/2022 3:53:50 PM	69157
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2022 3:53:50 PM	69157
Surr: DNOP	51.1	21-129		%Rec	1	8/1/2022 3:53:50 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 1:22:47 PM	69132
Surr: BFB	101	37.7-212		%Rec	1	7/29/2022 1:22:47 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/29/2022 1:22:47 PM	69132
Toluene	ND	0.050		mg/Kg	1	7/29/2022 1:22:47 PM	69132
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 1:22:47 PM	69132
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 1:22:47 PM	69132
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	7/29/2022 1:22:47 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-04

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:15:00 PM

Lab ID: 2207E17-003

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	170	60		mg/Kg	20	8/1/2022 10:01:43 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/1/2022 4:18:16 PM	69157
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2022 4:18:16 PM	69157
Surr: DNOP	43.1	21-129		%Rec	1	8/1/2022 4:18:16 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 1:46:22 PM	69132
Surr: BFB	105	37.7-212		%Rec	1	7/29/2022 1:46:22 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/29/2022 1:46:22 PM	69132
Toluene	ND	0.049		mg/Kg	1	7/29/2022 1:46:22 PM	69132
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 1:46:22 PM	69132
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 1:46:22 PM	69132
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	7/29/2022 1:46:22 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-05

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:00:00 PM

Lab ID: 2207E17-004

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	120	60		mg/Kg	20	8/1/2022 10:14:05 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/1/2022 5:07:01 PM	69157
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/1/2022 5:07:01 PM	69157
Surr: DNOP	60.6	21-129		%Rec	1	8/1/2022 5:07:01 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 2:10:01 PM	69132
Surr: BFB	103	37.7-212		%Rec	1	7/29/2022 2:10:01 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/29/2022 2:10:01 PM	69132
Toluene	ND	0.050		mg/Kg	1	7/29/2022 2:10:01 PM	69132
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 2:10:01 PM	69132
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 2:10:01 PM	69132
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	7/29/2022 2:10:01 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-09

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:20:00 PM

Lab ID: 2207E17-005

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	650	60		mg/Kg	20	8/1/2022 10:26:26 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	44	15		mg/Kg	1	8/1/2022 5:31:31 PM	69157
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2022 5:31:31 PM	69157
Surr: DNOP	62.6	21-129		%Rec	1	8/1/2022 5:31:31 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 3:21:05 PM	69132
Surr: BFB	104	37.7-212		%Rec	1	7/29/2022 3:21:05 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/29/2022 3:21:05 PM	69132
Toluene	ND	0.049		mg/Kg	1	7/29/2022 3:21:05 PM	69132
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 3:21:05 PM	69132
Xylenes, Total	ND	0.098		mg/Kg	1	7/29/2022 3:21:05 PM	69132
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	7/29/2022 3:21:05 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-11

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:25:00 PM

Lab ID: 2207E17-006

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	600	60		mg/Kg	20	8/1/2022 10:38:46 PM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/1/2022 5:56:00 PM	69157
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2022 5:56:00 PM	69157
Surr: DNOP	59.8	21-129		%Rec	1	8/1/2022 5:56:00 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 3:44:51 PM	69132
Surr: BFB	105	37.7-212		%Rec	1	7/29/2022 3:44:51 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	7/29/2022 3:44:51 PM	69132
Toluene	ND	0.049		mg/Kg	1	7/29/2022 3:44:51 PM	69132
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 3:44:51 PM	69132
Xylenes, Total	ND	0.098		mg/Kg	1	7/29/2022 3:44:51 PM	69132
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	7/29/2022 3:44:51 PM	69132

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

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

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## Analytical Report

Lab Order 2207E17

Date Reported: 8/4/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES-01

Project: Routh SWD Tank Battery

Collection Date: 7/26/2022 2:05:00 PM

Lab ID: 2207E17-007

Matrix: SOIL

Received Date: 7/28/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	360	60		mg/Kg	20	8/2/2022 9:25:12 AM	69186
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	20	15		mg/Kg	1	8/1/2022 6:20:39 PM	69157
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2022 6:20:39 PM	69157
Surr: DNOP	71.3	21-129		%Rec	1	8/1/2022 6:20:39 PM	69157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 4:08:30 PM	69132
Surr: BFB	103	37.7-212		%Rec	1	7/29/2022 4:08:30 PM	69132
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	7/29/2022 4:08:30 PM	69132
Toluene	ND	0.050		mg/Kg	1	7/29/2022 4:08:30 PM	69132
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 4:08:30 PM	69132
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 4:08:30 PM	69132
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	7/29/2022 4:08:30 PM	69132

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207E17  
04-Aug-22

Client: EOG  
Project: Routh SWD Tank Battery

Sample ID: MB-69186		SampType: mblk		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 69186		RunNo: 89935						
Prep Date: 8/1/2022		Analysis Date: 8/1/2022		SeqNo: 3204018		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69186		SampType: lcs		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 69186		RunNo: 89935						
Prep Date: 8/1/2022		Analysis Date: 8/1/2022		SeqNo: 3204020		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.4	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2207E17

04-Aug-22

Client: EOG

Project: Routh SWD Tank Battery

Sample ID: <b>LCS-69157</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69157</b>	RunNo: <b>89930</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203710</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	15	50.00	0	84.0	64.4	127			
Surr: DNOP	3.6		5.000		73.0	21	129			

Sample ID: <b>MB-69157</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69157</b>	RunNo: <b>89930</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203711</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.0		10.00		80.4	21	129			

### Qualifiers:

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

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

WO#: 2207E17

04-Aug-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69132</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69132</b>		RunNo: <b>89888</b>							
Prep Date: <b>7/28/2022</b>	Analysis Date: <b>7/29/2022</b>		SeqNo: <b>3203001</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		102	37.7	212			

Sample ID: <b>lcs-69132</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69132</b>		RunNo: <b>89888</b>							
Prep Date: <b>7/28/2022</b>	Analysis Date: <b>7/29/2022</b>		SeqNo: <b>3203002</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	100	72.3	137			
Surr: BFB	2000		1000		196	37.7	212			

**Qualifiers:**

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

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

WO#: 2207E17

04-Aug-22

**Client:** EOG**Project:** Routh SWD Tank Battery

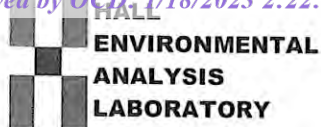
Sample ID: <b>mb-69132</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69132</b>	RunNo: <b>89888</b>								
Prep Date: <b>7/28/2022</b>	Analysis Date: <b>7/29/2022</b>	SeqNo: <b>3203043</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	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		95.2	70	130			

Sample ID: <b>LCS-69132</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69132</b>	RunNo: <b>89888</b>								
Prep Date: <b>7/28/2022</b>	Analysis Date: <b>7/29/2022</b>	SeqNo: <b>3203044</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	102	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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



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

## Sample Log-In Check List

Client Name: EOG

Work Order Number: 2207E17

RcptNo: 1

Received By: Juan Rojas

7/28/2022 7:30:00 AM

*Juan Rojas*

Completed By: Cheyenne Cason

7/28/2022 7:49:27 AM

*Cason*

Reviewed By:

*jr 7/28/22*Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *KPG 7-27-22*

*KPG 7-28-22*

*7-28-22*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Not Present			







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

August 09, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD

OrderNo.: 2207F05

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 16 sample(s) on 7/29/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-18 6'

Project: Routh SWD

Collection Date: 7/27/2022 10:40:00 AM

Lab ID: 2207F05-001

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/3/2022 4:36:08 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 4:36:08 PM
Surr: DNOP	111	21-129		%Rec	1	8/3/2022 4:36:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2022 2:23:48 PM
Surr: BFB	103	37.7-212		%Rec	1	8/1/2022 2:23:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/1/2022 2:23:48 PM
Toluene	ND	0.050		mg/Kg	1	8/1/2022 2:23:48 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2022 2:23:48 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2022 2:23:48 PM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	8/1/2022 2:23:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	350	61		mg/Kg	20	8/2/2022 3:47:57 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-19 6'

Project: Routh SWD

Collection Date: 7/27/2022 10:45:00 AM

Lab ID: 2207F05-002

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 6:54:29 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/2/2022 6:54:29 PM
Surr: DNOP	105	21-129		%Rec	1	8/2/2022 6:54:29 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2022 3:35:38 PM
Surr: BFB	105	37.7-212		%Rec	1	8/1/2022 3:35:38 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/1/2022 3:35:38 PM
Toluene	ND	0.049		mg/Kg	1	8/1/2022 3:35:38 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2022 3:35:38 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/1/2022 3:35:38 PM
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	8/1/2022 3:35:38 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 4:00:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-20 6'

Project: Routh SWD

Collection Date: 7/27/2022 10:50:00 AM

Lab ID: 2207F05-003

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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)	58	13		mg/Kg	1	8/2/2022 7:19:14 PM
Motor Oil Range Organics (MRO)	95	42		mg/Kg	1	8/2/2022 7:19:14 PM
Surr: DNOP	101	21-129		%Rec	1	8/2/2022 7:19:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/1/2022 4:47:13 PM
Surr: BFB	100	37.7-212		%Rec	1	8/1/2022 4:47:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/1/2022 4:47:13 PM
Toluene	ND	0.049		mg/Kg	1	8/1/2022 4:47:13 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/1/2022 4:47:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2022 4:47:13 PM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	8/1/2022 4:47:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	730	60		mg/Kg	20	8/2/2022 4:37:21 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-21 6'

Project: Routh SWD

Collection Date: 7/27/2022 10:55:00 AM

Lab ID: 2207F05-004

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	15		mg/Kg	1	8/2/2022 8:08:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/2/2022 8:08:27 PM
Surr: DNOP	96.2	21-129		%Rec	1	8/2/2022 8:08:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2022 5:11:01 PM
Surr: BFB	106	37.7-212		%Rec	1	8/1/2022 5:11:01 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/1/2022 5:11:01 PM
Toluene	ND	0.050		mg/Kg	1	8/1/2022 5:11:01 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2022 5:11:01 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2022 5:11:01 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	8/1/2022 5:11:01 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 4:49:41 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-22 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:00:00 AM

Lab ID: 2207F05-005

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 8:32:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/2/2022 8:32:53 PM
Surr: DNOP	112	21-129		%Rec	1	8/2/2022 8:32:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2022 5:34:52 PM
Surr: BFB	103	37.7-212		%Rec	1	8/1/2022 5:34:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/1/2022 5:34:52 PM
Toluene	ND	0.050		mg/Kg	1	8/1/2022 5:34:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2022 5:34:52 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/1/2022 5:34:52 PM
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	1	8/1/2022 5:34:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	150	60		mg/Kg	20	8/2/2022 5:02:01 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-23 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:05:00 AM

Lab ID: 2207F05-006

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 9:22:05 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/2/2022 9:22:05 PM
Surr: DNOP	101	21-129		%Rec	1	8/2/2022 9:22:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2022 7:09:56 PM
Surr: BFB	101	37.7-212		%Rec	1	8/1/2022 7:09:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/1/2022 7:09:56 PM
Toluene	ND	0.048		mg/Kg	1	8/1/2022 7:09:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2022 7:09:56 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/1/2022 7:09:56 PM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	8/1/2022 7:09:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 5:14:22 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-24 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:10:00 AM

Lab ID: 2207F05-007

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	15		mg/Kg	1	8/2/2022 9:46:37 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/2/2022 9:46:37 PM
Surr: DNOP	95.8	21-129		%Rec	1	8/2/2022 9:46:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2022 7:33:48 PM
Surr: BFB	104	37.7-212		%Rec	1	8/1/2022 7:33:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 7:33:48 PM
Toluene	ND	0.046		mg/Kg	1	8/1/2022 7:33:48 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2022 7:33:48 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/1/2022 7:33:48 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	8/1/2022 7:33:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 5:51:26 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-25 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:15:00 AM

Lab ID: 2207F05-008

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 10:11:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/2/2022 10:11:10 PM
Surr: DNOP	81.5	21-129		%Rec	1	8/2/2022 10:11:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/1/2022 7:57:33 PM
Surr: BFB	102	37.7-212		%Rec	1	8/1/2022 7:57:33 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 7:57:33 PM
Toluene	ND	0.047		mg/Kg	1	8/1/2022 7:57:33 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/1/2022 7:57:33 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/1/2022 7:57:33 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	8/1/2022 7:57:33 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	59		mg/Kg	20	8/2/2022 6:03:46 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-26 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:20:00 AM

Lab ID: 2207F05-009

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 10:35:50 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/2/2022 10:35:50 PM
Surr: DNOP	56.3	21-129		%Rec	1	8/2/2022 10:35:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2022 8:21:13 PM
Surr: BFB	98.2	37.7-212		%Rec	1	8/1/2022 8:21:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 8:21:13 PM
Toluene	ND	0.046		mg/Kg	1	8/1/2022 8:21:13 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2022 8:21:13 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/1/2022 8:21:13 PM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	8/1/2022 8:21:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	1100	60		mg/Kg	20	8/2/2022 6:16:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-27 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:25:00 AM

Lab ID: 2207F05-010

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/2/2022 11:00:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/2/2022 11:00:19 PM
Surr: DNOP	77.3	21-129		%Rec	1	8/2/2022 11:00:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2022 8:44:55 PM
Surr: BFB	100	37.7-212		%Rec	1	8/1/2022 8:44:55 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/1/2022 8:44:55 PM
Toluene	ND	0.048		mg/Kg	1	8/1/2022 8:44:55 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2022 8:44:55 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/1/2022 8:44:55 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	8/1/2022 8:44:55 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	220	60		mg/Kg	20	8/2/2022 6:28:29 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-28 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:30:00 AM

Lab ID: 2207F05-011

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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)	320	29		mg/Kg	2	8/3/2022 5:49:56 PM
Motor Oil Range Organics (MRO)	380	96		mg/Kg	2	8/3/2022 5:49:56 PM
Surr: DNOP	106	21-129		%Rec	2	8/3/2022 5:49:56 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/1/2022 9:08:35 PM
Surr: BFB	101	37.7-212		%Rec	1	8/1/2022 9:08:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 9:08:35 PM
Toluene	ND	0.047		mg/Kg	1	8/1/2022 9:08:35 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/1/2022 9:08:35 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/1/2022 9:08:35 PM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	8/1/2022 9:08:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	270	60		mg/Kg	20	8/2/2022 7:05:31 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-29 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:35:00 AM

Lab ID: 2207F05-012

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	13		mg/Kg	1	8/3/2022 6:38:59 PM
Motor Oil Range Organics (MRO)	58	45		mg/Kg	1	8/3/2022 6:38:59 PM
Surr: DNOP	92.8	21-129		%Rec	1	8/3/2022 6:38:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/1/2022 9:56:01 PM
Surr: BFB	97.9	37.7-212		%Rec	1	8/1/2022 9:56:01 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 9:56:01 PM
Toluene	ND	0.047		mg/Kg	1	8/1/2022 9:56:01 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/1/2022 9:56:01 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/1/2022 9:56:01 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	8/1/2022 9:56:01 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	240	60		mg/Kg	20	8/2/2022 7:17:52 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-30 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:40:00 AM

Lab ID: 2207F05-013

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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)	510	270		mg/Kg	20	8/3/2022 12:14:02 AM
Motor Oil Range Organics (MRO)	1200	900		mg/Kg	20	8/3/2022 12:14:02 AM
Surr: DNOP	0	21-129	S	%Rec	20	8/3/2022 12:14:02 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/1/2022 10:43:21 PM
Surr: BFB	94.4	37.7-212		%Rec	1	8/1/2022 10:43:21 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/1/2022 10:43:21 PM
Toluene	ND	0.048		mg/Kg	1	8/1/2022 10:43:21 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/1/2022 10:43:21 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/1/2022 10:43:21 PM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	8/1/2022 10:43:21 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	650	60		mg/Kg	20	8/2/2022 7:30:12 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-31 6'

Project: Routh SWD

Collection Date: 7/27/2022 11:45:00 AM

Lab ID: 2207F05-014

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	15		mg/Kg	1	8/3/2022 12:38:30 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2022 12:38:30 AM
Surr: DNOP	88.8	21-129		%Rec	1	8/3/2022 12:38:30 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2022 11:30:35 PM
Surr: BFB	96.6	37.7-212		%Rec	1	8/1/2022 11:30:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/1/2022 11:30:35 PM
Toluene	ND	0.050		mg/Kg	1	8/1/2022 11:30:35 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2022 11:30:35 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2022 11:30:35 PM
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	8/1/2022 11:30:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 7:42:34 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-32 6'

Project: Routh SWD

Collection Date: 7/27/2022 2:00:00 PM

Lab ID: 2207F05-015

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/3/2022 1:03:14 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 1:03:14 AM
Surr: DNOP	93.4	21-129		%Rec	1	8/3/2022 1:03:14 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/1/2022 11:54:10 PM
Surr: BFB	95.8	37.7-212		%Rec	1	8/1/2022 11:54:10 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/1/2022 11:54:10 PM
Toluene	ND	0.046		mg/Kg	1	8/1/2022 11:54:10 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/1/2022 11:54:10 PM
Xylenes, Total	ND	0.091		mg/Kg	1	8/1/2022 11:54:10 PM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	1	8/1/2022 11:54:10 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	110	60		mg/Kg	20	8/2/2022 7:54:55 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2207F05

Date Reported: 8/9/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-33 6'

Project: Routh SWD

Collection Date: 7/27/2022 2:05:00 PM

Lab ID: 2207F05-016

Matrix: SOIL

Received Date: 7/29/2022 7:20:00 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	14		mg/Kg	1	8/3/2022 1:27:47 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 1:27:47 AM
Surr: DNOP	97.8	21-129		%Rec	1	8/3/2022 1:27:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2022 12:41:19 AM
Surr: BFB	100	37.7-212		%Rec	1	8/2/2022 12:41:19 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 12:41:19 AM
Toluene	ND	0.047		mg/Kg	1	8/2/2022 12:41:19 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2022 12:41:19 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/2/2022 12:41:19 AM
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	8/2/2022 12:41:19 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	8/2/2022 8:07:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2207F05

09-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>MB-69202</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69202</b>		RunNo: <b>89954</b>							
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206533</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-69202</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69202</b>		RunNo: <b>89954</b>							
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206534</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	96.0	90	110			

Sample ID: <b>MB-69209</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69209</b>		RunNo: <b>89954</b>							
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206565</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-69209</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69209</b>		RunNo: <b>89954</b>							
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206566</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	96.8	90	110			

**Qualifiers:**

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

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

WO#: 2207F05

09-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>LCS-69190</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69190</b>		RunNo: <b>89958</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206471</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.5	64.4	127			
Surr: DNOP	4.8		5.000		95.3	21	129			

Sample ID: <b>MB-69190</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69190</b>		RunNo: <b>89958</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3206472</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	21	129			

Sample ID: <b>2207F05-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-18 6'</b>	Batch ID: <b>69190</b>		RunNo: <b>90023</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207967</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	14	45.25	0	127	36.1	154			
Surr: DNOP	4.6		4.525		102	21	129			

Sample ID: <b>2207F05-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-18 6'</b>	Batch ID: <b>69190</b>		RunNo: <b>90023</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207968</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	13	44.48	0	113	36.1	154	13.3	33.9	
Surr: DNOP	3.8		4.448		86.1	21	129	0	0	

**Qualifiers:**

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

Page 18 of 20

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

WO#: 2207F05

09-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>mb-69167</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69167</b>		RunNo: <b>89924</b>							
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3203746</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	37.7	212			

Sample ID: <b>lcs-69167</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69167</b>		RunNo: <b>89924</b>							
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3203747</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	106	72.3	137			
Surr: BFB	2000		1000		203	37.7	212			

Sample ID: <b>2207f05-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BES22-18 6'</b>	Batch ID: <b>69167</b>		RunNo: <b>89924</b>							
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3203749</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	24.63	0	103	70	130			
Surr: BFB	2000		985.2		205	37.7	212			

Sample ID: <b>2207f05-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BES22-18 6'</b>	Batch ID: <b>69167</b>		RunNo: <b>89924</b>							
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3203750</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	24.75	0	102	70	130	0.0129	20	
Surr: BFB	2100		990.1		208	37.7	212	0	0	

**Qualifiers:**

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

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

WO#: 2207F05

09-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>mb-69167</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69167</b>	RunNo: <b>89924</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203780</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		95.8	70	130			

Sample ID: <b>LCS-69167</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69167</b>	RunNo: <b>89924</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203781</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	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.1	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	70	130			

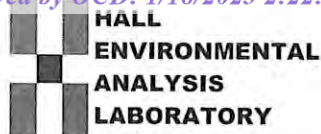
Sample ID: <b>2207f05-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-19 6'</b>	Batch ID: <b>69167</b>	RunNo: <b>89924</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203784</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	0.9814	0	86.7	68.8	120			
Toluene	0.89	0.049	0.9814	0	91.2	73.6	124			
Ethylbenzene	0.90	0.049	0.9814	0	91.6	72.7	129			
Xylenes, Total	2.7	0.098	2.944	0	92.5	75.7	126			
Surr: 4-Bromofluorobenzene	0.98		0.9814		100	70	130			

Sample ID: <b>2207f05-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-19 6'</b>	Batch ID: <b>69167</b>	RunNo: <b>89924</b>								
Prep Date: <b>7/29/2022</b>	Analysis Date: <b>8/1/2022</b>	SeqNo: <b>3203785</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9794	0	89.5	68.8	120	2.96	20	
Toluene	0.92	0.049	0.9794	0	94.0	73.6	124	2.88	20	
Ethylbenzene	0.93	0.049	0.9794	0	94.7	72.7	129	3.08	20	
Xylenes, Total	2.8	0.098	2.938	0	94.8	75.7	126	2.24	20	
Surr: 4-Bromofluorobenzene	0.98		0.9794		99.8	70	130	0	0	

**Qualifiers:**

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





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: 2207F05

RcptNo: 1

Received By: Juan Rojas

7/29/2022 7:20:00 AM

*Juan Rojas*

Completed By: Cheyenne Cason

7/29/2022 7:44:44 AM

*Cason*

Reviewed By: *Cmc*

7/29/22

Chain of Custody

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

Log In

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

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *in 7/29/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

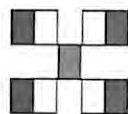
16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Not Present			

## Chain-of-Custody Record

Client: <u>5061 Vertex</u>		Turn-Around Time: <u>5- Day</u>				
Mailing Address: <u>On File</u>		<input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush Project Name: <u>Routh SLD</u>				
Phone #: _____		Project #: <u>22 E-00716-10</u>				
email or Fax#: _____		Project Manager: <u>Maria Puddin</u>				
QA/QC Package: _____		Sampler: <u>CD</u>				
<input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation) <input type="checkbox"/> NELAC <input type="checkbox"/> Az Compliance <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD (Type) _____		On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No # of Coolers: <u>1</u> Cooler Temp (including CF): <u>3.3+0.2=3.5 (°C)</u>				
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/27	10:40	5011	BES22-18 6'	402	ICE	2207F05
	10:45		BES22-19 6'			001
	10:50		BES22-20 6'			002
	10:55		BES22-21 6'			003
	11:00		BES22-22 6'			004
	11:05		BES22-23 6'			005
	11:10		BES22-24 6'			006
	11:15		BES22-25 6'			007
	11:20		BES22-26 6'			008
	11:25		BES22-27 6'			009
	11:30		BES22-28 6'			010
	11:35		BES22-29 6'			011
Date:	Time:	Relinquished by:		Via:	Date	Time
		[Signature]				
Date:	Time:	Relinquished by:		Via:	Date	Time
		[Signature]				



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

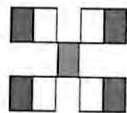
BTEX / MTBE / TMB's (8021)	✓
TPH:8015D(GRO / DRO / MRO)	✓
8081 Pesticides/8082 PCB's	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	✓
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Remarks: CC: Chance DixonDirect Bill EOG



## Chain-of-Custody Record

Turn-Around Time: 5-Day		<input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush	
Project Name:		Routh SMD	
Project #:		22E-00716-10	
Project Manager:		Monica Perrin	
Sampler: CD			
On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
# of Coolers: 1			
Cooler Temp (including CF): 3.5 to 2 = 3.5 (°C)			
Container Type and #	Preservative Type	HEAL No.	
402	ICE	2207F05	
		013	
		014	
		015	
		016	
Date	Time	Matrix	Sample Name
7/27	11:40	SOI	BE522-30 6'
	11:45		BE522-31 6'
	2:00		BE522-32 6'
	2:05		BE522-33 6'
Date	Time	Relinquished by:	
7/27/20	1900		
Date	Time	Relinquished by:	
7/27/20	1900		



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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

Remarks: CC: Chance Dixon

Direct Bill EOG

Received by: Via: Date Time

Received by: Via: Date Time  
 7/27/20 1900

Received by: Via: Date Time

Received by: Via: Date Time  
 7/27/20 1900



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August 10, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD

OrderNo.: 2207F70

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 21 sample(s) on 7/30/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-34 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:30:00 AM

Lab ID: 2207F70-001

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/2/2022 11:47:57 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/2/2022 11:47:57 PM
Surr: DNOP	59.6	21-129		%Rec	1	8/2/2022 11:47:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/1/2022 11:52:00 PM
Surr: BFB	91.6	37.7-212		%Rec	1	8/1/2022 11:52:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/1/2022 11:52:00 PM
Toluene	ND	0.050		mg/Kg	1	8/1/2022 11:52:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/1/2022 11:52:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/1/2022 11:52:00 PM
Surr: 4-Bromofluorobenzene	86.1	70-130		%Rec	1	8/1/2022 11:52:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	ND	60		mg/Kg	20	8/3/2022 2:05:08 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-38 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:35:00 AM

Lab ID: 2207F70-002

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 12:01:55 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/3/2022 12:01:55 AM
Surr: DNOP	74.8	21-129		%Rec	1	8/3/2022 12:01:55 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 12:11:00 AM
Surr: BFB	94.6	37.7-212		%Rec	1	8/2/2022 12:11:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/2/2022 12:11:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 12:11:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 12:11:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 12:11:00 AM
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	8/2/2022 12:11:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	140	60		mg/Kg	20	8/3/2022 3:06:51 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-40 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:40:00 AM

Lab ID: 2207F70-003

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	8/3/2022 12:15:43 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/3/2022 12:15:43 AM
Surr: DNOP	57.4	21-129		%Rec	1	8/3/2022 12:15:43 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 12:31:00 AM
Surr: BFB	95.2	37.7-212		%Rec	1	8/2/2022 12:31:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 12:31:00 AM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 12:31:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 12:31:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2022 12:31:00 AM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	8/2/2022 12:31:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	540	60		mg/Kg	20	8/3/2022 3:19:13 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-41 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:45:00 AM

Lab ID: 2207F70-004

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 12:29:39 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 12:29:39 AM
Surr: DNOP	64.3	21-129		%Rec	1	8/3/2022 12:29:39 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 1:10:00 AM
Surr: BFB	91.1	37.7-212		%Rec	1	8/2/2022 1:10:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/2/2022 1:10:00 AM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 1:10:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 1:10:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/2/2022 1:10:00 AM
Surr: 4-Bromofluorobenzene	86.3	70-130		%Rec	1	8/2/2022 1:10:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	390	60		mg/Kg	20	8/3/2022 3:31:33 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-42 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:50:00 AM

Lab ID: 2207F70-005

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 12:43:29 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 12:43:29 AM
Surr: DNOP	74.8	21-129		%Rec	1	8/3/2022 12:43:29 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 1:30:00 AM
Surr: BFB	89.8	37.7-212		%Rec	1	8/2/2022 1:30:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 1:30:00 AM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 1:30:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 1:30:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	8/2/2022 1:30:00 AM
Surr: 4-Bromofluorobenzene	86.1	70-130		%Rec	1	8/2/2022 1:30:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	160	60		mg/Kg	20	8/3/2022 3:43:55 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-43 6'

Project: Routh SWD

Collection Date: 7/28/2022 9:55:00 AM

Lab ID: 2207F70-006

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 12:57:12 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 12:57:12 AM
Surr: DNOP	61.6	21-129		%Rec	1	8/3/2022 12:57:12 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 1:50:00 AM
Surr: BFB	96.3	37.7-212		%Rec	1	8/2/2022 1:50:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/2/2022 1:50:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 1:50:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 1:50:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/2/2022 1:50:00 AM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	8/2/2022 1:50:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	170	60		mg/Kg	20	8/3/2022 5:47:24 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-44 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:00:00 AM

Lab ID: 2207F70-007

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/3/2022 1:11:04 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2022 1:11:04 AM
Surr: DNOP	76.2	21-129		%Rec	1	8/3/2022 1:11:04 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 2:09:00 AM
Surr: BFB	91.8	37.7-212		%Rec	1	8/2/2022 2:09:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/2/2022 2:09:00 AM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 2:09:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 2:09:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2022 2:09:00 AM
Surr: 4-Bromofluorobenzene	86.5	70-130		%Rec	1	8/2/2022 2:09:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	280	60		mg/Kg	20	8/3/2022 5:59:44 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-45 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:05:00 AM

Lab ID: 2207F70-008

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/3/2022 1:24:59 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2022 1:24:59 AM
Surr: DNOP	55.9	21-129		%Rec	1	8/3/2022 1:24:59 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 2:29:00 AM
Surr: BFB	93.4	37.7-212		%Rec	1	8/2/2022 2:29:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 2:29:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 2:29:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 2:29:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 2:29:00 AM
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	8/2/2022 2:29:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	570	60		mg/Kg	20	8/3/2022 6:12:05 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-48 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:10:00 AM

Lab ID: 2207F70-009

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 1:38:53 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 1:38:53 AM
Surr: DNOP	75.4	21-129		%Rec	1	8/3/2022 1:38:53 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 2:49:00 AM
Surr: BFB	91.9	37.7-212		%Rec	1	8/2/2022 2:49:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 2:49:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 2:49:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 2:49:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 2:49:00 AM
Surr: 4-Bromofluorobenzene	86.7	70-130		%Rec	1	8/2/2022 2:49:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	420	60		mg/Kg	20	8/3/2022 6:24:25 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-49 6'

Project: Routh SWD

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

Lab ID: 2207F70-010

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/3/2022 1:52:47 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2022 1:52:47 AM
Surr: DNOP	62.2	21-129		%Rec	1	8/3/2022 1:52:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 3:08:00 AM
Surr: BFB	95.2	37.7-212		%Rec	1	8/2/2022 3:08:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 3:08:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 3:08:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 3:08:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 3:08:00 AM
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	8/2/2022 3:08:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	320	60		mg/Kg	20	8/3/2022 6:36:46 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-50 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:20:00 AM

Lab ID: 2207F70-011

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 2:06:36 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/3/2022 2:06:36 AM
Surr: DNOP	59.4	21-129		%Rec	1	8/3/2022 2:06:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 3:28:00 AM
Surr: BFB	92.0	37.7-212		%Rec	1	8/2/2022 3:28:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/2/2022 3:28:00 AM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 3:28:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 3:28:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 3:28:00 AM
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	1	8/2/2022 3:28:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	310	60		mg/Kg	20	8/3/2022 6:49:07 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-51 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:25:00 AM

Lab ID: 2207F70-012

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/3/2022 2:20:36 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 2:20:36 AM
Surr: DNOP	66.3	21-129		%Rec	1	8/3/2022 2:20:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 3:48:00 AM
Surr: BFB	93.1	37.7-212		%Rec	1	8/2/2022 3:48:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 3:48:00 AM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 3:48:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 3:48:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2022 3:48:00 AM
Surr: 4-Bromofluorobenzene	86.7	70-130		%Rec	1	8/2/2022 3:48:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	240	61		mg/Kg	20	8/3/2022 7:01:28 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-52 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:30:00 AM

Lab ID: 2207F70-013

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/3/2022 2:34:21 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2022 2:34:21 AM
Surr: DNOP	58.2	21-129		%Rec	1	8/3/2022 2:34:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 4:07:00 AM
Surr: BFB	96.2	37.7-212		%Rec	1	8/2/2022 4:07:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/2/2022 4:07:00 AM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 4:07:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 4:07:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2022 4:07:00 AM
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	1	8/2/2022 4:07:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	260	60		mg/Kg	20	8/3/2022 7:38:31 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-53 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:35:00 AM

Lab ID: 2207F70-014

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	15		mg/Kg	1	8/3/2022 11:14:23 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2022 11:14:23 AM
Surr: DNOP	106	21-129		%Rec	1	8/3/2022 11:14:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 11:38:01 AM
Surr: BFB	95.3	37.7-212		%Rec	1	8/2/2022 11:38:01 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 11:38:01 AM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 11:38:01 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 11:38:01 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2022 11:38:01 AM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	8/2/2022 11:38:01 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	370	60		mg/Kg	20	8/3/2022 7:50:52 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-54 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:40:00 AM

Lab ID: 2207F70-015

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	15		mg/Kg	1	8/3/2022 12:27:18 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/3/2022 12:27:18 PM
Surr: DNOP	109	21-129		%Rec	1	8/3/2022 12:27:18 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 12:48:56 PM
Surr: BFB	109	37.7-212		%Rec	1	8/2/2022 12:48:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 12:48:56 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 12:48:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 12:48:56 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/2/2022 12:48:56 PM
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	8/2/2022 12:48:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	460	60		mg/Kg	20	8/3/2022 8:03:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-55 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:45:00 AM

Lab ID: 2207F70-016

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	14		mg/Kg	1	8/3/2022 12:51:49 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/3/2022 12:51:49 PM
Surr: DNOP	105	21-129		%Rec	1	8/3/2022 12:51:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/2/2022 2:00:09 PM
Surr: BFB	95.9	37.7-212		%Rec	1	8/2/2022 2:00:09 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/2/2022 2:00:09 PM
Toluene	ND	0.049		mg/Kg	1	8/2/2022 2:00:09 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/2/2022 2:00:09 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/2/2022 2:00:09 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	8/2/2022 2:00:09 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	660	60		mg/Kg	20	8/3/2022 8:15:33 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-56 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:50:00 AM

Lab ID: 2207F70-017

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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)	53	13		mg/Kg	1	8/5/2022 2:17:13 PM
Motor Oil Range Organics (MRO)	93	43		mg/Kg	1	8/5/2022 2:17:13 PM
Surr: DNOP	90.3	21-129		%Rec	1	8/5/2022 2:17:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 3:11:27 PM
Surr: BFB	97.1	37.7-212		%Rec	1	8/2/2022 3:11:27 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/2/2022 3:11:27 PM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 3:11:27 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 3:11:27 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/2/2022 3:11:27 PM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	8/2/2022 3:11:27 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	350	60		mg/Kg	20	8/3/2022 8:27:54 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-57 6'

Project: Routh SWD

Collection Date: 7/28/2022 10:55:00 AM

Lab ID: 2207F70-018

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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)	26	15		mg/Kg	1	8/3/2022 1:40:46 PM
Motor Oil Range Organics (MRO)	68	49		mg/Kg	1	8/3/2022 1:40:46 PM
Surr: DNOP	99.7	21-129		%Rec	1	8/3/2022 1:40:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/2/2022 3:35:16 PM
Surr: BFB	100	37.7-212		%Rec	1	8/2/2022 3:35:16 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 3:35:16 PM
Toluene	ND	0.047		mg/Kg	1	8/2/2022 3:35:16 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/2/2022 3:35:16 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/2/2022 3:35:16 PM
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	8/2/2022 3:35:16 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	64	60		mg/Kg	20	8/3/2022 8:40:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-58 6'

Project: Routh SWD

Collection Date: 7/28/2022 11:00:00 AM

Lab ID: 2207F70-019

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	14		mg/Kg	1	8/3/2022 2:05:09 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 2:05:09 PM
Surr: DNOP	102	21-129		%Rec	1	8/3/2022 2:05:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 3:59:08 PM
Surr: BFB	93.4	37.7-212		%Rec	1	8/2/2022 3:59:08 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 3:59:08 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 3:59:08 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 3:59:08 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/2/2022 3:59:08 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	8/2/2022 3:59:08 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	160	60		mg/Kg	20	8/3/2022 8:52:37 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-59 6'

Project: Routh SWD

Collection Date: 7/28/2022 11:05:00 AM

Lab ID: 2207F70-020

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	14		mg/Kg	1	8/3/2022 2:29:37 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 2:29:37 PM
Surr: DNOP	78.1	21-129		%Rec	1	8/3/2022 2:29:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/2/2022 4:22:57 PM
Surr: BFB	107	37.7-212		%Rec	1	8/2/2022 4:22:57 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/2/2022 4:22:57 PM
Toluene	ND	0.050		mg/Kg	1	8/2/2022 4:22:57 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/2/2022 4:22:57 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/2/2022 4:22:57 PM
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	8/2/2022 4:22:57 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	350	60		mg/Kg	20	8/3/2022 9:04:57 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2207F70

Date Reported: 8/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-60 6'

Project: Routh SWD

Collection Date: 7/28/2022 11:10:00 AM

Lab ID: 2207F70-021

Matrix: SOIL

Received Date: 7/30/2022 9:30:00 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	15		mg/Kg	1	8/3/2022 2:54:00 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/3/2022 2:54:00 PM
Surr: DNOP	86.7	21-129		%Rec	1	8/3/2022 2:54:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/2/2022 4:46:46 PM
Surr: BFB	98.8	37.7-212		%Rec	1	8/2/2022 4:46:46 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/2/2022 4:46:46 PM
Toluene	ND	0.048		mg/Kg	1	8/2/2022 4:46:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/2/2022 4:46:46 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/2/2022 4:46:46 PM
Surr: 4-Bromofluorobenzene	99.1	70-130		%Rec	1	8/2/2022 4:46:46 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	570	60		mg/Kg	20	8/3/2022 9:17:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2207F70

10-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>MB-69226</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69226</b>		RunNo: <b>90012</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207667</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-69226</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69226</b>		RunNo: <b>90012</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207668</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			

Sample ID: <b>MB-69243</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69243</b>		RunNo: <b>90012</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207703</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-69243</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69243</b>		RunNo: <b>90012</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/3/2022</b>		SeqNo: <b>3207704</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	97.8	90	110			

**Qualifiers:**

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

Page 22 of 28

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

WO#: 2207F70

10-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>MB-69181</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69181</b>	RunNo: <b>89947</b>								
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>	SeqNo: <b>3205582</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.1		10.00		71.2	21	129			

Sample ID: <b>LCS-69181</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69181</b>	RunNo: <b>89947</b>								
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>	SeqNo: <b>3205583</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	15	50.00	0	100	64.4	127			
Surr: DNOP	3.7		5.000		74.5	21	129			

Sample ID: <b>2207F70-014AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-53 6'</b>	Batch ID: <b>69221</b>	RunNo: <b>90023</b>								
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/3/2022</b>	SeqNo: <b>3207972</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	15	49.16	0	104	36.1	154			
Surr: DNOP	4.4		4.916		90.0	21	129			

Sample ID: <b>2207F70-014AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-53 6'</b>	Batch ID: <b>69221</b>	RunNo: <b>90023</b>								
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/3/2022</b>	SeqNo: <b>3207973</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	49.02	0	94.6	36.1	154	10.2	33.9	
Surr: DNOP	3.7		4.902		74.8	21	129	0	0	

Sample ID: <b>LCS-69221</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69221</b>	RunNo: <b>90023</b>								
Prep Date: <b>8/2/2022</b>	Analysis Date: <b>8/3/2022</b>	SeqNo: <b>3207986</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	15	50.00	0	109	64.4	127			
Surr: DNOP	5.3		5.000		106	21	129			

**Qualifiers:**

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

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2207F70  
10-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD

Sample ID: MB-69221	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69221	RunNo: 90023								
Prep Date: 8/2/2022	Analysis Date: 8/3/2022	SeqNo: 3207987 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		119	21	129			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.
  - D Sample Diluted Due to Matrix
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quantitative Limit
  - S % Recovery outside of range due to dilution or matrix interference

- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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

WO#: 2207F70

10-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>ics-69172</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69172</b>				RunNo: <b>89940</b>					
Prep Date: <b>7/31/2022</b>	Analysis Date: <b>8/1/2022</b>				SeqNo: <b>3204393</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	100	72.3	137			
Surr: BFB	2100		1000		207	37.7	212			

Sample ID: <b>mb-69172</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69172</b>				RunNo: <b>89940</b>					
Prep Date: <b>7/31/2022</b>	Analysis Date: <b>8/1/2022</b>				SeqNo: <b>3204394</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	37.7	212			

Sample ID: <b>mb-69188</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69188</b>				RunNo: <b>89951</b>					
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>				SeqNo: <b>3205867</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		95.2	37.7	212			

Sample ID: <b>ics-69188</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69188</b>				RunNo: <b>89951</b>					
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>				SeqNo: <b>3205868</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	94.2	72.3	137			
Surr: BFB	1900		1000		191	37.7	212			

Sample ID: <b>2207f70-014ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>BES22-53 6'</b>	Batch ID: <b>69188</b>				RunNo: <b>89951</b>					
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>				SeqNo: <b>3205871</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	24.75	0	116	70	130			
Surr: BFB	2100		990.1		209	37.7	212			

Sample ID: <b>2207f70-014amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>BES22-53 6'</b>	Batch ID: <b>69188</b>				RunNo: <b>89951</b>					
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>				SeqNo: <b>3205872</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2207F70  
10-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD

Sample ID: 2207f70-014amsd		SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range					
Client ID: BES22-53 6'		Batch ID: 69188			RunNo: 89951					
Prep Date: 8/1/2022		Analysis Date: 8/2/2022			SeqNo: 3205872		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.9	24.44	0	119	70	130	1.62	20	
Surr: BFB	2100		977.5		216	37.7	212	0	0	S

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 range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit



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

WO#: 2207F70

10-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: <b>lcs-69172</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69172</b>		RunNo: <b>89940</b>							
Prep Date: <b>7/31/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3204447</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.8	80	120			
Toluene	0.89	0.050	1.000	0	89.0	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.2	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	0.87		1.000		87.0	70	130			

Sample ID: <b>mb-69172</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69172</b>		RunNo: <b>89940</b>							
Prep Date: <b>7/31/2022</b>	Analysis Date: <b>8/1/2022</b>		SeqNo: <b>3204448</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	70	130			

Sample ID: <b>mb-69188</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69188</b>		RunNo: <b>89951</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3205888</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	0.93		1.000		93.1	70	130			

Sample ID: <b>LCS-69188</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69188</b>		RunNo: <b>89951</b>							
Prep Date: <b>8/1/2022</b>	Analysis Date: <b>8/2/2022</b>		SeqNo: <b>3205889</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.0	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.4	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.5	70	130			

**Qualifiers:**

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

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

WO#: 2207F70

10-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD

Sample ID: 2207f70-015ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BES22-54 6'	Batch ID: 69188	RunNo: 89951								
Prep Date: 8/1/2022	Analysis Date: 8/2/2022	SeqNo: 3205893 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9881	0	103	68.8	120			
Toluene	1.1	0.049	0.9881	0.01261	108	73.6	124			
Ethylbenzene	1.1	0.049	0.9881	0	112	72.7	129			
Xylenes, Total	3.3	0.099	2.964	0	112	75.7	126			
Surr: 4-Bromofluorobenzene	0.97		0.9881		98.1	70	130			

Sample ID: 2207f70-015amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BES22-54 6'	Batch ID: 69188	RunNo: 89951								
Prep Date: 8/1/2022	Analysis Date: 8/2/2022	SeqNo: 3205894 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.024	0.9747	0	102	68.8	120	2.55	20	
Toluene	1.1	0.049	0.9747	0.01261	108	73.6	124	2.09	20	
Ethylbenzene	1.1	0.049	0.9747	0	110	72.7	129	2.94	20	
Xylenes, Total	3.2	0.097	2.924	0	110	75.7	126	3.05	20	
Surr: 4-Bromofluorobenzene	0.97		0.9747		99.6	70	130	0	0	

**Qualifiers:**

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



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: 2207F70

RcptNo: 1

Received By: Tracy Casarrubias 7/30/2022 9:30:00 AM

Completed By: Tracy Casarrubias 7/30/2022 10:29:55 AM

Reviewed By: *7/30/2022*

Chain of Custody

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

Log In

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

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

Adjusted? \_\_\_\_\_

Checked by: *TMC 7/30/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.5	Good	Yes			







[illegible]





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

August 30, 2022

Monica Peppin

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: 10 Routh SWD Tank Battery

OrderNo.: 2208A99

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/18/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208A99

Date Reported: 8/30/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-05 0-4'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/16/2022 8:50:00 AM

Lab ID: 2208A99-001

Matrix: SOIL

Received Date: 8/18/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	690	59		mg/Kg	20	8/24/2022 6:11:11 PM	69724
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/26/2022 3:59:05 PM	69630
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 3:59:05 PM	69630
Surr: DNOP	103	21-129		%Rec	1	8/26/2022 3:59:05 PM	69630
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/20/2022 3:57:25 AM	69611
Surr: BFB	103	37.7-212		%Rec	1	8/20/2022 3:57:25 AM	69611
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/20/2022 3:57:25 AM	69611
Toluene	ND	0.049		mg/Kg	1	8/20/2022 3:57:25 AM	69611
Ethylbenzene	ND	0.049		mg/Kg	1	8/20/2022 3:57:25 AM	69611
Xylenes, Total	ND	0.098		mg/Kg	1	8/20/2022 3:57:25 AM	69611
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	8/20/2022 3:57:25 AM	69611

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 1 of 5

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208A99

30-Aug-22

Client: EOG

Project: 10 Routh SWD Tank Battery

Sample ID: MB-69724	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69724	RunNo: 90534								
Prep Date: 8/24/2022	Analysis Date: 8/24/2022	SeqNo: 3234917	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69724	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69724	RunNo: 90534								
Prep Date: 8/24/2022	Analysis Date: 8/24/2022	SeqNo: 3234918	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 2 of 5

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

WO#: 2208A99

30-Aug-22

**Client:** EOG**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>MB-69630</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69630</b>		RunNo: <b>90468</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3231105</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.8		10.00		77.8	21	129			

Sample ID: <b>LCS-69630</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69630</b>		RunNo: <b>90468</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3231106</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	15	50.00	0	96.2	64.4	127			
Surr: DNOP	4.1		5.000		81.2	21	129			

**Qualifiers:**

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

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

WO#: 2208A99

30-Aug-22

**Client:** EOG**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>mb-69611</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69611</b>		RunNo: <b>90417</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3227682</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		102	37.7	212			

Sample ID: <b>lcs-69611</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69611</b>		RunNo: <b>90417</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3227683</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	72.3	137			
Surr: BFB	2100		1000		209	37.7	212			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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



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

WO#: 2208A99

30-Aug-22

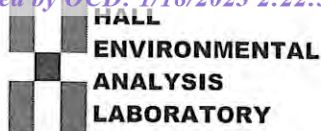
**Client:** EOG**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>mb-69611</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69611</b>	RunNo: <b>90417</b>								
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3227728</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		95.5	70	130			

Sample ID: <b>LCS-69611</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69611</b>	RunNo: <b>90417</b>								
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3227729</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	95.5	80	120			
Toluene	0.99	0.050	1.000	0	99.2	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.9	70	130			

**Qualifiers:**

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



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: 2208A99

RcptNo: 1

Received By: Tracy Casarrubias 8/18/2022 7:15:00 AM

Completed By: Tracy Casarrubias 8/18/2022 9:13:28 AM

Reviewed By: *ms/18/22*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *MP 8-18-22*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

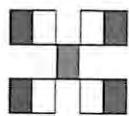
16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Yes			

## Chain-of-Custody Record

Turn-Around Time:		<input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush 5 Days	
Project Name:		10-Routh SWD Tank Battery	
Project #:		22E-00716	
Project Manager:		Sally Carter / Monica Peplin	
Sampler:		S. Reta	
On Ice:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
# of Coolers:		1	
Cooler Temp (including CF):		5.3 - 0.1 - 5.2 (°C)	
Container Type and #		Preservative Type	
4oz Jar		Ice	
Date		Time	
8/16/22		08:50	
Sample Name		WES22-05 0-4'	
Matrix		Soil	
Time		Date	
16:47		8/16/22	
Relinquished by:		S. Reta	
Time		Date	
1900		8/17/22	
Relinquished by:		aamunip	
Time		Date	
1900		8/17/22	



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

☒ BTEX / MTBE / TMB's (8021)  
☒ TPH8015D (GRO / DRO / MRO)  
☒ 8081 Pesticides/8082 PCB's  
☐ EDB (Method 504.1)  
☐ PAHs by 8310 or 8270SIMS  
☐ RCRA 8 Metals  
☒ Cl<sup>-</sup>, F<sup>-</sup>, Br<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>  
☐ 8260 (VOA)  
☐ 8270 (Semi-VOA)  
☐ Total Coliform (Present/Absent)

Remarks:

Direct Bill to EOG Resources Inc.  
Chase Seltzer

Received by: *aamunip* Date: 8/17/22 Time: 7:15  
 Received by: *aamunip* Date: 8/17/22 Time: 7:15





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

August 26, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: 10 Routh SWD Tank Battery

OrderNo.: 2208B92

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/19/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-17 4-9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 11:00:00 AM

Lab ID: 2208B92-001

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	14		mg/Kg	1	8/24/2022 12:36:18 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/24/2022 12:36:18 AM
Surr: DNOP	73.9	21-129		%Rec	1	8/24/2022 12:36:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/22/2022 7:02:52 PM
Surr: BFB	111	37.7-212		%Rec	1	8/22/2022 7:02:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 7:02:52 PM
Toluene	ND	0.050		mg/Kg	1	8/22/2022 7:02:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/22/2022 7:02:52 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/22/2022 7:02:52 PM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	8/22/2022 7:02:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	1900	60		mg/Kg	20	8/24/2022 6:48:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 1 of 14



## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-10 4-9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 11:10:00 AM

Lab ID: 2208B92-002

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	15		mg/Kg	1	8/24/2022 1:09:37 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2022 1:09:37 AM
Surr: DNOP	95.9	21-129		%Rec	1	8/24/2022 1:09:37 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/22/2022 8:13:48 PM
Surr: BFB	109	37.7-212		%Rec	1	8/22/2022 8:13:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 8:13:48 PM
Toluene	ND	0.050		mg/Kg	1	8/22/2022 8:13:48 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/22/2022 8:13:48 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/22/2022 8:13:48 PM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	8/22/2022 8:13:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	740	60		mg/Kg	20	8/24/2022 5:36:20 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 2 of 14

## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-18 4-9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 11:05:00 AM

Lab ID: 2208B92-003

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	14		mg/Kg	1	8/24/2022 1:20:57 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/24/2022 1:20:57 AM
Surr: DNOP	69.6	21-129		%Rec	1	8/24/2022 1:20:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 9:24:35 PM
Surr: BFB	112	37.7-212		%Rec	1	8/22/2022 9:24:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 9:24:35 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 9:24:35 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 9:24:35 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/22/2022 9:24:35 PM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	8/22/2022 9:24:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	650	60		mg/Kg	20	8/24/2022 5:48:45 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-73 6'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:00:00 PM

Lab ID: 2208B92-004

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	13		mg/Kg	1	8/24/2022 1:32:11 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/24/2022 1:32:11 AM
Surr: DNOP	71.1	21-129		%Rec	1	8/24/2022 1:32:11 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 9:48:22 PM
Surr: BFB	109	37.7-212		%Rec	1	8/22/2022 9:48:22 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 9:48:22 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 9:48:22 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 9:48:22 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/22/2022 9:48:22 PM
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	8/22/2022 9:48:22 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	280	60		mg/Kg	20	8/24/2022 6:01:10 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-75 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:05:00 PM

Lab ID: 2208B92-005

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	14		mg/Kg	1	8/24/2022 1:43:27 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/24/2022 1:43:27 AM
Surr: DNOP	82.1	21-129		%Rec	1	8/24/2022 1:43:27 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 10:12:00 PM
Surr: BFB	112	37.7-212		%Rec	1	8/22/2022 10:12:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 10:12:00 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 10:12:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 10:12:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/22/2022 10:12:00 PM
Surr: 4-Bromofluorobenzene	95.0	70-130		%Rec	1	8/22/2022 10:12:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	180	60		mg/Kg	20	8/24/2022 6:13:35 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-76 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:10:00 PM

Lab ID: 2208B92-006

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	15		mg/Kg	1	8/24/2022 1:54:37 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2022 1:54:37 AM
Surr: DNOP	83.6	21-129		%Rec	1	8/24/2022 1:54:37 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 10:35:32 PM
Surr: BFB	110	37.7-212		%Rec	1	8/22/2022 10:35:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 10:35:32 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 10:35:32 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 10:35:32 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/22/2022 10:35:32 PM
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	8/22/2022 10:35:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	320	60		mg/Kg	20	8/24/2022 6:26:00 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-77 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:15:00 PM

Lab ID: 2208B92-007

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	13		mg/Kg	1	8/24/2022 2:05:47 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/24/2022 2:05:47 AM
Surr: DNOP	81.8	21-129		%Rec	1	8/24/2022 2:05:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 10:59:07 PM
Surr: BFB	109	37.7-212		%Rec	1	8/22/2022 10:59:07 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/22/2022 10:59:07 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 10:59:07 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 10:59:07 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/22/2022 10:59:07 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	8/22/2022 10:59:07 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	560	60		mg/Kg	20	8/24/2022 7:25:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-78 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:20:00 PM

Lab ID: 2208B92-008

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	15		mg/Kg	1	8/24/2022 2:16:59 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2022 2:16:59 AM
Surr: DNOP	80.6	21-129		%Rec	1	8/24/2022 2:16:59 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2022 11:22:37 PM
Surr: BFB	111	37.7-212		%Rec	1	8/22/2022 11:22:37 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/22/2022 11:22:37 PM
Toluene	ND	0.049		mg/Kg	1	8/22/2022 11:22:37 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2022 11:22:37 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/22/2022 11:22:37 PM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	8/22/2022 11:22:37 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	440	60		mg/Kg	20	8/24/2022 7:37:33 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-79 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:25:00 PM

Lab ID: 2208B92-009

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	14		mg/Kg	1	8/24/2022 2:28:10 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/24/2022 2:28:10 AM
Surr: DNOP	84.1	21-129		%Rec	1	8/24/2022 2:28:10 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/22/2022 11:46:13 PM
Surr: BFB	111	37.7-212		%Rec	1	8/22/2022 11:46:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/22/2022 11:46:13 PM
Toluene	ND	0.050		mg/Kg	1	8/22/2022 11:46:13 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/22/2022 11:46:13 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/22/2022 11:46:13 PM
Surr: 4-Bromofluorobenzene	94.3	70-130		%Rec	1	8/22/2022 11:46:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	400	60		mg/Kg	20	8/24/2022 7:49:54 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208B92

Date Reported: 8/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-80 9'

Project: 10 Routh SWD Tank Battery

Collection Date: 8/17/2022 1:30:00 PM

Lab ID: 2208B92-010

Matrix: SOIL

Received Date: 8/19/2022 7:10:00 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	15		mg/Kg	1	8/24/2022 2:39:22 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2022 2:39:22 AM
Surr: DNOP	112	21-129		%Rec	1	8/24/2022 2:39:22 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/23/2022 12:09:48 AM
Surr: BFB	112	37.7-212		%Rec	1	8/23/2022 12:09:48 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/23/2022 12:09:48 AM
Toluene	ND	0.050		mg/Kg	1	8/23/2022 12:09:48 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/23/2022 12:09:48 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/23/2022 12:09:48 AM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	8/23/2022 12:09:48 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	410	60		mg/Kg	20	8/24/2022 8:02:14 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208B92

26-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>MB-69724</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69724</b>		RunNo: <b>90534</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234917</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-69724</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69724</b>		RunNo: <b>90534</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234918</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	93.7	90	110			

Sample ID: <b>MB-69743</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69743</b>		RunNo: <b>90534</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234949</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-69743</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69743</b>		RunNo: <b>90534</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234950</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	93.9	90	110			

Sample ID: <b>MB-69727</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69727</b>		RunNo: <b>90554</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234983</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-69727</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69727</b>		RunNo: <b>90554</b>							
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234984</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	92.9	90	110			

**Qualifiers:**

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



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

WO#: 2208B92

26-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>LCS-69672</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69672</b>			RunNo: <b>90486</b>						
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>			SeqNo: <b>3231725</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	15	50.00	0	83.4	64.4	127			
Surr: DNOP	3.3		5.000		65.9	21	129			

Sample ID: <b>MB-69672</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69672</b>			RunNo: <b>90486</b>						
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>			SeqNo: <b>3231726</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.6		10.00		86.4	21	129			

Sample ID: <b>2208B92-001AMS</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>WES22-17 4-9'</b>	Batch ID: <b>69672</b>			RunNo: <b>90486</b>						
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/24/2022</b>			SeqNo: <b>3232463</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	31	14	45.29	0	68.5	36.1	154			
Surr: DNOP	2.3		4.529		50.5	21	129			

Sample ID: <b>2208B92-001AMSD</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>WES22-17 4-9'</b>	Batch ID: <b>69672</b>			RunNo: <b>90486</b>						
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/24/2022</b>			SeqNo: <b>3232464</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	14	46.90	0	77.2	36.1	154	15.5	33.9	
Surr: DNOP	2.5		4.690		52.7	21	129	0	0	

**Qualifiers:**

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

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

WO#: 2208B92

26-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>mb-69640</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69640</b>		RunNo: <b>90462</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3229714</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		110	37.7	212			

Sample ID: <b>lcs-69640</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69640</b>		RunNo: <b>90462</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3229715</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	72.3	137			
Surr: BFB	2100		1000		214	37.7	212			S

Sample ID: <b>2208b92-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WES22-17 4-9'</b>	Batch ID: <b>69640</b>		RunNo: <b>90462</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3229718</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	4.9	24.63	0	106	70	130			
Surr: BFB	2100		985.2		216	37.7	212			S

Sample ID: <b>2208b92-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>WES22-17 4-9'</b>	Batch ID: <b>69640</b>		RunNo: <b>90462</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>		SeqNo: <b>3229719</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	24.75	0	106	70	130	0.532	20	
Surr: BFB	2200		990.1		218	37.7	212	0	0	S

**Qualifiers:**

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

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

WO#: 2208B92

26-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** 10 Routh SWD Tank Battery

Sample ID: <b>mb-69640</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69640</b>	RunNo: <b>90462</b>								
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>	SeqNo: <b>3229752</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	0.94		1.000		94.1	70	130			

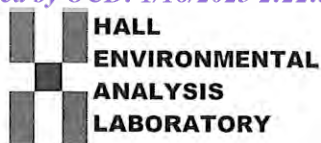
Sample ID: <b>LCS-69640</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69640</b>	RunNo: <b>90462</b>								
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>	SeqNo: <b>3229753</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	80	120			
Toluene	0.98	0.050	1.000	0	98.5	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.5	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.4	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	70	130			

Sample ID: <b>2208b92-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WES22-10 4-9'</b>	Batch ID: <b>69640</b>	RunNo: <b>90462</b>								
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>	SeqNo: <b>3229757</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	0.9823	0	93.7	68.8	120			
Toluene	0.97	0.049	0.9823	0	98.5	73.6	124			
Ethylbenzene	0.98	0.049	0.9823	0	99.5	72.7	129			
Xylenes, Total	2.9	0.098	2.947	0.01888	97.9	75.7	126			
Surr: 4-Bromofluorobenzene	0.96		0.9823		97.9	70	130			

Sample ID: <b>2208b92-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WES22-10 4-9'</b>	Batch ID: <b>69640</b>	RunNo: <b>90462</b>								
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/22/2022</b>	SeqNo: <b>3229758</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	0.9901	0	93.7	68.8	120	0.768	20	
Toluene	0.97	0.050	0.9901	0	97.8	73.6	124	0.0857	20	
Ethylbenzene	0.98	0.050	0.9901	0	98.7	72.7	129	0.0221	20	
Xylenes, Total	2.9	0.099	2.970	0.01888	97.3	75.7	126	0.144	20	
Surr: 4-Bromofluorobenzene	0.97		0.9901		97.7	70	130	0	0	

**Qualifiers:**

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



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: 2208B92

RcptNo: 1

Received By: Juan Rojas

8/19/2022 7:10:00 AM

*Juan Rojas*

Completed By: Tracy Casarrubias

8/19/2022 7:45:27 AM

Reviewed By: *JS 8-19-22*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *JS 8/19/22*

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Yes			



## Chain-of-Custody Record

Client: EOG Resources Inc / VertexMailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

10 - Rath SWD Tank Battery

Project #:

22E - 00716

Project Manager:

Monica PeppinSampler: S. Reta SPCOn Ice: ☒ Yes ☐ No

# of Coolers:

Cooler Temp (including CP): 0-3 to 2 = 0.5 (°C)

Container Type and #

Preservative Type

HEAL No.

2208B97001002003004005006007008009010

Date

8/17

Time

11:00

Sample Name

WES22-174-9'WES22-104-9'WES22-184-6'BES22-736'BES22-759'BES22-769'BES22-779'BES22-789'BES22-799'BES22-809'

Relinquished by:

S. Reta

Time:

8/17/22

Time:

10:37

Relinquished by:

Adam

Time:

8/18/22

Time:

1900

Received by:

Adam

Date

8/18/22

Time

800

Via:

air

Received by:

Adam

Date

8/19/22

Time

7:10

Remarks:

Direct Bill to EOG Resources Inc  
Chad Settle

## Analysis Request

Total Coliform (Present/Absent)

8270 (Semi-VOA)

8260 (VOA)

C, F, Br, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

RCRA 8 Metals

PAHs by 8310 or 8270SIMS

EDB (Method 504.1)

8081 Pesticides/8082 PCBs

TPH/8015D (GRO / DRO / MRO)

BTEX / MTBE / TMBs (8021)





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

August 31, 2022

Monica Peppin

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208C66

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/20/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-152 4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 11:00:00 AM

Lab ID: 2208C66-001

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	61	59		mg/Kg	20	8/26/2022 11:35:54 AM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/25/2022 2:02:30 PM	69697
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2022 2:02:30 PM	69697
Surr: DNOP	118	21-129		%Rec	1	8/25/2022 2:02:30 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/23/2022 9:42:13 PM	69669
Surr: BFB	108	37.7-212		%Rec	1	8/23/2022 9:42:13 PM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/23/2022 9:42:13 PM	69669
Toluene	ND	0.046		mg/Kg	1	8/23/2022 9:42:13 PM	69669
Ethylbenzene	ND	0.046		mg/Kg	1	8/23/2022 9:42:13 PM	69669
Xylenes, Total	ND	0.092		mg/Kg	1	8/23/2022 9:42:13 PM	69669
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	8/23/2022 9:42:13 PM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-153 4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 11:05:00 AM

Lab ID: 2208C66-002

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	100	60		mg/Kg	20	8/26/2022 11:48:18 AM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/25/2022 2:13:09 PM	69697
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2022 2:13:09 PM	69697
Surr: DNOP	98.5	21-129		%Rec	1	8/25/2022 2:13:09 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/23/2022 10:05:48 PM	69669
Surr: BFB	107	37.7-212		%Rec	1	8/23/2022 10:05:48 PM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/23/2022 10:05:48 PM	69669
Toluene	ND	0.047		mg/Kg	1	8/23/2022 10:05:48 PM	69669
Ethylbenzene	ND	0.047		mg/Kg	1	8/23/2022 10:05:48 PM	69669
Xylenes, Total	ND	0.095		mg/Kg	1	8/23/2022 10:05:48 PM	69669
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	8/23/2022 10:05:48 PM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-154 4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 11:10:00 AM

Lab ID: 2208C66-003

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	ND	60		mg/Kg	20	8/26/2022 12:00:42 PM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/25/2022 2:23:46 PM	69697
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2022 2:23:46 PM	69697
Surr: DNOP	125	21-129		%Rec	1	8/25/2022 2:23:46 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/23/2022 10:29:32 PM	69669
Surr: BFB	106	37.7-212		%Rec	1	8/23/2022 10:29:32 PM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/23/2022 10:29:32 PM	69669
Toluene	ND	0.048		mg/Kg	1	8/23/2022 10:29:32 PM	69669
Ethylbenzene	ND	0.048		mg/Kg	1	8/23/2022 10:29:32 PM	69669
Xylenes, Total	ND	0.095		mg/Kg	1	8/23/2022 10:29:32 PM	69669
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	8/23/2022 10:29:32 PM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-20 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 1:45:00 PM

Lab ID: 2208C66-004

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	390	60		mg/Kg	20	8/26/2022 12:13:06 PM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/25/2022 2:34:24 PM	69697
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2022 2:34:24 PM	69697
Surr: DNOP	75.7	21-129		%Rec	1	8/25/2022 2:34:24 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/23/2022 10:53:09 PM	69669
Surr: BFB	109	37.7-212		%Rec	1	8/23/2022 10:53:09 PM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/23/2022 10:53:09 PM	69669
Toluene	ND	0.050		mg/Kg	1	8/23/2022 10:53:09 PM	69669
Ethylbenzene	ND	0.050		mg/Kg	1	8/23/2022 10:53:09 PM	69669
Xylenes, Total	ND	0.099		mg/Kg	1	8/23/2022 10:53:09 PM	69669
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	8/23/2022 10:53:09 PM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-21 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 1:50:00 PM

Lab ID: 2208C66-005

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	610	60		mg/Kg	20	8/26/2022 12:25:30 PM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	37	15		mg/Kg	1	8/26/2022 4:53:56 PM	69697
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 4:53:56 PM	69697
Surr: DNOP	62.2	21-129		%Rec	1	8/26/2022 4:53:56 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/24/2022 12:03:57 AM	69669
Surr: BFB	107	37.7-212		%Rec	1	8/24/2022 12:03:57 AM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	8/24/2022 12:03:57 AM	69669
Toluene	ND	0.050		mg/Kg	1	8/24/2022 12:03:57 AM	69669
Ethylbenzene	ND	0.050		mg/Kg	1	8/24/2022 12:03:57 AM	69669
Xylenes, Total	ND	0.099		mg/Kg	1	8/24/2022 12:03:57 AM	69669
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	8/24/2022 12:03:57 AM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208C66

Date Reported: 8/31/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-22 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/18/2022 1:55:00 PM

Lab ID: 2208C66-006

Matrix: SOIL

Received Date: 8/20/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	280	60		mg/Kg	20	8/26/2022 12:37:54 PM	69783
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/25/2022 2:55:34 PM	69697
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2022 2:55:34 PM	69697
Surr: DNOP	59.1	21-129		%Rec	1	8/25/2022 2:55:34 PM	69697
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/24/2022 12:27:35 AM	69669
Surr: BFB	106	37.7-212		%Rec	1	8/24/2022 12:27:35 AM	69669
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	8/24/2022 12:27:35 AM	69669
Toluene	ND	0.047		mg/Kg	1	8/24/2022 12:27:35 AM	69669
Ethylbenzene	ND	0.047		mg/Kg	1	8/24/2022 12:27:35 AM	69669
Xylenes, Total	ND	0.094		mg/Kg	1	8/24/2022 12:27:35 AM	69669
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	8/24/2022 12:27:35 AM	69669

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208C66

31-Aug-22

Client: EOG

Project: Routh SWD Tank Battery

Sample ID: <b>MB-69783</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>PBS</b>	Batch ID: <b>69783</b>	RunNo: <b>90630</b>
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238422</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-69783</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>LCSS</b>	Batch ID: <b>69783</b>	RunNo: <b>90630</b>
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238423</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 93.3 90 110

### Qualifiers:

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

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

WO#: 2208C66

31-Aug-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69697</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69697</b>		RunNo: <b>90543</b>							
Prep Date: <b>8/23/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234619</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	34	15	50.00	0	68.5	64.4	127			
Surr: DNOP	3.5		5.000		70.7	21	129			

Sample ID: <b>MB-69697</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69697</b>		RunNo: <b>90543</b>							
Prep Date: <b>8/23/2022</b>	Analysis Date: <b>8/24/2022</b>		SeqNo: <b>3234620</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	21	129			

Sample ID: <b>MB-69780</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69780</b>		RunNo: <b>90637</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>		SeqNo: <b>3238809</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		90.0	21	129			

Sample ID: <b>LCS-69780</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69780</b>		RunNo: <b>90637</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>		SeqNo: <b>3238810</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.2	21	129			

**Qualifiers:**

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

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

WO#: 2208C66

31-Aug-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69669</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69669</b>		RunNo: <b>90483</b>							
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>		SeqNo: <b>3231929</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		110	37.7	212			

Sample ID: <b>lcs-69669</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69669</b>		RunNo: <b>90483</b>							
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>		SeqNo: <b>3231930</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	100	72.3	137			
Surr: BFB	2100		1000		212	37.7	212			S

**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 range due to dilution or matrix interference

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



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

WO#: 2208C66

31-Aug-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69669</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69669</b>		RunNo: <b>90483</b>							
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>		SeqNo: <b>3231977</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	0.94		1.000		94.4	70	130			

Sample ID: <b>LCS-69669</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69669</b>		RunNo: <b>90483</b>							
Prep Date: <b>8/22/2022</b>	Analysis Date: <b>8/23/2022</b>		SeqNo: <b>3231980</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.0	80	120			
Toluene	0.85	0.050	1.000	0	85.4	80	120			
Ethylbenzene	0.86	0.050	1.000	0	86.1	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.0	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	70	130			

**Qualifiers:**

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



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

## Sample Log-In Check List

Client Name: EOG

Work Order Number: 2208C66

RcptNo: 1

Received By: Tracy Casarrubias 8/20/2022 8:45:00 AM

Completed By: Sean Livingston 8/20/2022 9:46:30 AM

Reviewed By: Tmc

8/20/22

S. Lopez

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☐ No ☒ NA ☐
5. Sample(s) in proper container(s)? Samples were collected the same day and chilled. 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: S. Lopez

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.9	Good				

## Chain-of-Custody Record

Client: EOG Resources Inc (Vertex)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush

Project Name:

Routh SWD Tank Battery

Project #:

22E-00716

Project Manager:

Monica PeppinSampler: S. RetaOn Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 8.0-0.1 = 7.9 (°C)

Container Type and #

Preservative Type

HEAL No.

4oz Jar

Ice

220866

001

002

003

004

005

006

Date: 8/18/22Time: 17:27Relinquished by: S. RetaDate: 8/19/22Time: 1900Relinquished by: Monica

Received by:

Via:

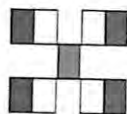
Date: 8/19/22Time: 900

Received by:

Via:

Date: 8/20/22Time: 8:45

Remarks:

Direct Bill to EOG Resources Inc
**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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





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

September 02, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208E18

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 47 sample(s) on 8/24/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-155 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:30:00 AM

Lab ID: 2208E18-001

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 6:31:20 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 6:31:20 PM
Surr: DNOP	83.7	21-129		%Rec	1	8/26/2022 6:31:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2022 1:20:22 PM
Surr: BFB	100	37.7-212		%Rec	1	8/25/2022 1:20:22 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 1:20:22 PM
Toluene	ND	0.047		mg/Kg	1	8/25/2022 1:20:22 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2022 1:20:22 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/25/2022 1:20:22 PM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	8/25/2022 1:20:22 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	230	60		mg/Kg	20	8/27/2022 12:07:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-156 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:35:00 AM

Lab ID: 2208E18-002

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 6:41:58 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 6:41:58 PM
Surr: DNOP	88.5	21-129		%Rec	1	8/26/2022 6:41:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2022 1:44:06 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 1:44:06 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 1:44:06 PM
Toluene	ND	0.047		mg/Kg	1	8/25/2022 1:44:06 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2022 1:44:06 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 1:44:06 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	8/25/2022 1:44:06 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	340	60		mg/Kg	20	8/27/2022 1:09:00 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-157 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:40:00 AM

Lab ID: 2208E18-003

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 6:52:39 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 6:52:39 PM
Surr: DNOP	111	21-129		%Rec	1	8/26/2022 6:52:39 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 2:07:53 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 2:07:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 2:07:53 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 2:07:53 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 2:07:53 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2022 2:07:53 PM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	8/25/2022 2:07:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	150	59		mg/Kg	20	8/27/2022 1:21:21 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-158 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:45:00 AM

Lab ID: 2208E18-004

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 7:03:24 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 7:03:24 PM
Surr: DNOP	93.1	21-129		%Rec	1	8/26/2022 7:03:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 2:31:35 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 2:31:35 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 2:31:35 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 2:31:35 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 2:31:35 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 2:31:35 PM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	8/25/2022 2:31:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	260	60		mg/Kg	20	8/27/2022 1:33:41 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-159 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:50:00 AM

Lab ID: 2208E18-005

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 7:14:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 7:14:10 PM
Surr: DNOP	89.5	21-129		%Rec	1	8/26/2022 7:14:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 3:42:49 PM
Surr: BFB	102	37.7-212		%Rec	1	8/25/2022 3:42:49 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 3:42:49 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 3:42:49 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 3:42:49 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/25/2022 3:42:49 PM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	8/25/2022 3:42:49 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	420	60		mg/Kg	20	8/27/2022 1:46:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-160 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:55:00 AM

Lab ID: 2208E18-006

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 7:24:59 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 7:24:59 PM
Surr: DNOP	91.6	21-129		%Rec	1	8/26/2022 7:24:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 4:06:32 PM
Surr: BFB	98.6	37.7-212		%Rec	1	8/25/2022 4:06:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 4:06:32 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 4:06:32 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 4:06:32 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/25/2022 4:06:32 PM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	8/25/2022 4:06:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	580	60		mg/Kg	20	8/27/2022 1:58:22 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-161 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:00:00 AM

Lab ID: 2208E18-007

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 7:35:49 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 7:35:49 PM
Surr: DNOP	121	21-129		%Rec	1	8/26/2022 7:35:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 4:30:14 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 4:30:14 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 4:30:14 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 4:30:14 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 4:30:14 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/25/2022 4:30:14 PM
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	8/25/2022 4:30:14 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	560	60		mg/Kg	20	8/27/2022 2:10:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-162 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:05:00 AM

Lab ID: 2208E18-008

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 7:46:50 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 7:46:50 PM
Surr: DNOP	95.9	21-129		%Rec	1	8/26/2022 7:46:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/25/2022 4:53:56 PM
Surr: BFB	103	37.7-212		%Rec	1	8/25/2022 4:53:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 4:53:56 PM
Toluene	ND	0.046		mg/Kg	1	8/25/2022 4:53:56 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/25/2022 4:53:56 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/25/2022 4:53:56 PM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	8/25/2022 4:53:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	290	60		mg/Kg	20	8/28/2022 4:07:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-163 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:10:00 AM

Lab ID: 2208E18-009

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 7:57:51 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/26/2022 7:57:51 PM
Surr: DNOP	104	21-129		%Rec	1	8/26/2022 7:57:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 5:17:34 PM
Surr: BFB	102	37.7-212		%Rec	1	8/25/2022 5:17:34 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 5:17:34 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 5:17:34 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 5:17:34 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 5:17:34 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	8/25/2022 5:17:34 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	710	60		mg/Kg	20	8/28/2022 4:44:16 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-164 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:15:00 AM

Lab ID: 2208E18-010

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 8:08:52 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/26/2022 8:08:52 PM
Surr: DNOP	73.2	21-129		%Rec	1	8/26/2022 8:08:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 5:41:19 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 5:41:19 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 5:41:19 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 5:41:19 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 5:41:19 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2022 5:41:19 PM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	8/25/2022 5:41:19 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	660	60		mg/Kg	20	8/28/2022 5:21:30 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-165 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:20:00 AM

Lab ID: 2208E18-011

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 8:19:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 8:19:53 PM
Surr: DNOP	77.1	21-129		%Rec	1	8/26/2022 8:19:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 6:05:02 PM
Surr: BFB	100	37.7-212		%Rec	1	8/25/2022 6:05:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 6:05:02 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 6:05:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 6:05:02 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 6:05:02 PM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	8/25/2022 6:05:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	680	59		mg/Kg	20	8/28/2022 5:33:56 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-166 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:25:00 AM

Lab ID: 2208E18-012

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 8:30:54 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 8:30:54 PM
Surr: DNOP	75.6	21-129		%Rec	1	8/26/2022 8:30:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 6:28:41 PM
Surr: BFB	100	37.7-212		%Rec	1	8/25/2022 6:28:41 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 6:28:41 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 6:28:41 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 6:28:41 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 6:28:41 PM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	8/25/2022 6:28:41 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	930	60		mg/Kg	20	8/28/2022 5:46:20 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-167

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:30:00 AM

Lab ID: 2208E18-013

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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)	25	14		mg/Kg	1	8/26/2022 8:41:55 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 8:41:55 PM
Surr: DNOP	82.1	21-129		%Rec	1	8/26/2022 8:41:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/25/2022 6:52:17 PM
Surr: BFB	100	37.7-212		%Rec	1	8/25/2022 6:52:17 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 6:52:17 PM
Toluene	ND	0.050		mg/Kg	1	8/25/2022 6:52:17 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/25/2022 6:52:17 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/25/2022 6:52:17 PM
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	8/25/2022 6:52:17 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	530	60		mg/Kg	20	8/28/2022 5:58:44 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-168

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:35:00 AM

Lab ID: 2208E18-014

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 8:52:56 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 8:52:56 PM
Surr: DNOP	75.3	21-129		%Rec	1	8/26/2022 8:52:56 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 7:15:56 PM
Surr: BFB	98.0	37.7-212		%Rec	1	8/25/2022 7:15:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 7:15:56 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 7:15:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 7:15:56 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/25/2022 7:15:56 PM
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	8/25/2022 7:15:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	490	60		mg/Kg	20	8/28/2022 6:11:09 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-169

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:40:00 AM

Lab ID: 2208E18-015

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/25/2022 11:01:54 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/25/2022 11:01:54 PM
Surr: DNOP	106	21-129		%Rec	1	8/25/2022 11:01:54 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	8/25/2022 9:50:00 AM
Surr: BFB	104	37.7-212		%Rec	5	8/25/2022 9:50:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	8/25/2022 9:50:00 AM
Toluene	ND	0.24		mg/Kg	5	8/25/2022 9:50:00 AM
Ethylbenzene	ND	0.24		mg/Kg	5	8/25/2022 9:50:00 AM
Xylenes, Total	ND	0.48		mg/Kg	5	8/25/2022 9:50:00 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	8/25/2022 9:50:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	770	60		mg/Kg	20	8/28/2022 6:23:34 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-170

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:45:00 AM

Lab ID: 2208E18-016

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/25/2022 11:45:38 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/25/2022 11:45:38 PM
Surr: DNOP	117	21-129		%Rec	1	8/25/2022 11:45:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 10:49:00 AM
Surr: BFB	109	37.7-212		%Rec	1	8/25/2022 10:49:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 10:49:00 AM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 10:49:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 10:49:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/25/2022 10:49:00 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/25/2022 10:49:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	680	60		mg/Kg	20	8/28/2022 6:35:59 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-171

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:50:00 AM

Lab ID: 2208E18-017

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/25/2022 11:56:37 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2022 11:56:37 PM
Surr: DNOP	121	21-129		%Rec	1	8/25/2022 11:56:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/25/2022 11:48:00 AM
Surr: BFB	104	37.7-212		%Rec	1	8/25/2022 11:48:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 11:48:00 AM
Toluene	ND	0.050		mg/Kg	1	8/25/2022 11:48:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/25/2022 11:48:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2022 11:48:00 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/25/2022 11:48:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	460	60		mg/Kg	20	8/28/2022 6:48:24 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-172

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 10:55:00 AM

Lab ID: 2208E18-018

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 10:23:45 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 10:23:45 AM
Surr: DNOP	82.5	21-129		%Rec	1	8/26/2022 10:23:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2022 12:08:00 PM
Surr: BFB	103	37.7-212		%Rec	1	8/25/2022 12:08:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 12:08:00 PM
Toluene	ND	0.047		mg/Kg	1	8/25/2022 12:08:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2022 12:08:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/25/2022 12:08:00 PM
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	8/25/2022 12:08:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	950	60		mg/Kg	20	8/28/2022 7:00:49 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-173

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:00:00 AM

Lab ID: 2208E18-019

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 10:34:26 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 10:34:26 AM
Surr: DNOP	68.3	21-129		%Rec	1	8/26/2022 10:34:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 12:28:00 PM
Surr: BFB	105	37.7-212		%Rec	1	8/25/2022 12:28:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 12:28:00 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 12:28:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 12:28:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 12:28:00 PM
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	8/25/2022 12:28:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	460	60		mg/Kg	20	8/28/2022 7:13:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-174

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:05:00 AM

Lab ID: 2208E18-020

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 10:45:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 10:45:16 AM
Surr: DNOP	108	21-129		%Rec	1	8/26/2022 10:45:16 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 12:48:00 PM
Surr: BFB	107	37.7-212		%Rec	1	8/25/2022 12:48:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 12:48:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 12:48:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 12:48:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 12:48:00 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/25/2022 12:48:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1100	60		mg/Kg	20	8/28/2022 7:50:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-175

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:10:00 AM

Lab ID: 2208E18-021

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 10:56:08 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 10:56:08 AM
Surr: DNOP	111	21-129		%Rec	1	8/26/2022 10:56:08 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 1:07:00 PM
Surr: BFB	105	37.7-212		%Rec	1	8/25/2022 1:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 1:07:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 1:07:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 1:07:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/25/2022 1:07:00 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/25/2022 1:07:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	860	60		mg/Kg	20	8/28/2022 8:02:52 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-176

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:15:00 AM

Lab ID: 2208E18-022

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 11:06:57 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 11:06:57 AM
Surr: DNOP	69.2	21-129		%Rec	1	8/26/2022 11:06:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 1:27:00 PM
Surr: BFB	106	37.7-212		%Rec	1	8/25/2022 1:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 1:27:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 1:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 1:27:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 1:27:00 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/25/2022 1:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	540	61		mg/Kg	20	8/29/2022 9:13:12 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-177

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:20:00 AM

Lab ID: 2208E18-023

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:17:45 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:17:45 AM
Surr: DNOP	91.8	21-129		%Rec	1	8/26/2022 11:17:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 1:47:00 PM
Surr: BFB	108	37.7-212		%Rec	1	8/25/2022 1:47:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 1:47:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 1:47:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 1:47:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/25/2022 1:47:00 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/25/2022 1:47:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1300	60		mg/Kg	20	8/29/2022 9:50:25 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-178

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:25:00 AM

Lab ID: 2208E18-024

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 11:28:32 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 11:28:32 AM
Surr: DNOP	97.1	21-129		%Rec	1	8/26/2022 11:28:32 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/25/2022 2:07:00 PM
Surr: BFB	107	37.7-212		%Rec	1	8/25/2022 2:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 2:07:00 PM
Toluene	ND	0.046		mg/Kg	1	8/25/2022 2:07:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/25/2022 2:07:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/25/2022 2:07:00 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/25/2022 2:07:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1200	60		mg/Kg	20	8/29/2022 11:04:53 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-179 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:30:00 AM

Lab ID: 2208E18-025

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:39:17 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/26/2022 11:39:17 AM
Surr: DNOP	89.6	21-129		%Rec	1	8/26/2022 11:39:17 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 2:46:00 PM
Surr: BFB	103	37.7-212		%Rec	1	8/25/2022 2:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 2:46:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 2:46:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 2:46:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 2:46:00 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	8/25/2022 2:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	540	60		mg/Kg	20	8/29/2022 11:17:17 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-180 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:35:00 AM

Lab ID: 2208E18-026

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:50:02 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:50:02 AM
Surr: DNOP	87.3	21-129		%Rec	1	8/26/2022 11:50:02 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 3:06:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/25/2022 3:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 3:06:00 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 3:06:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 3:06:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 3:06:00 PM
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	8/25/2022 3:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	230	60		mg/Kg	20	8/29/2022 11:29:41 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-181 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:40:00 AM

Lab ID: 2208E18-027

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 12:00:46 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 12:00:46 PM
Surr: DNOP	97.9	21-129		%Rec	1	8/26/2022 12:00:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/25/2022 3:26:00 PM
Surr: BFB	99.2	37.7-212		%Rec	1	8/25/2022 3:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 3:26:00 PM
Toluene	ND	0.046		mg/Kg	1	8/25/2022 3:26:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/25/2022 3:26:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/25/2022 3:26:00 PM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	8/25/2022 3:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	430	60		mg/Kg	20	8/29/2022 11:42:05 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-182 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:45:00 AM

Lab ID: 2208E18-028

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 12:11:27 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 12:11:27 PM
Surr: DNOP	89.7	21-129		%Rec	1	8/26/2022 12:11:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 3:46:00 PM
Surr: BFB	104	37.7-212		%Rec	1	8/25/2022 3:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 3:46:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 3:46:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 3:46:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/25/2022 3:46:00 PM
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	8/25/2022 3:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	600	60		mg/Kg	20	8/29/2022 11:54:30 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-183 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:50:00 AM

Lab ID: 2208E18-029

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 12:22:09 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 12:22:09 PM
Surr: DNOP	90.0	21-129		%Rec	1	8/26/2022 12:22:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 4:05:00 PM
Surr: BFB	106	37.7-212		%Rec	1	8/25/2022 4:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 4:05:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 4:05:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 4:05:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/25/2022 4:05:00 PM
Surr: 4-Bromofluorobenzene	98.9	70-130		%Rec	1	8/25/2022 4:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1100	60		mg/Kg	20	8/29/2022 12:06:54 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-184 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 11:55:00 AM

Lab ID: 2208E18-030

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 12:32:47 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 12:32:47 PM
Surr: DNOP	99.2	21-129		%Rec	1	8/26/2022 12:32:47 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 4:25:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/25/2022 4:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 4:25:00 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 4:25:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 4:25:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/25/2022 4:25:00 PM
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	8/25/2022 4:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1400	60		mg/Kg	20	8/29/2022 12:19:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-185 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:00:00 PM

Lab ID: 2208E18-031

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 12:43:24 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 12:43:24 PM
Surr: DNOP	73.5	21-129		%Rec	1	8/26/2022 12:43:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/25/2022 4:45:00 PM
Surr: BFB	106	37.7-212		%Rec	1	8/25/2022 4:45:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 4:45:00 PM
Toluene	ND	0.048		mg/Kg	1	8/25/2022 4:45:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/25/2022 4:45:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 4:45:00 PM
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	1	8/25/2022 4:45:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1300	60		mg/Kg	20	8/29/2022 12:31:43 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-186 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:05:00 PM

Lab ID: 2208E18-032

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 2:36:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 2:36:10 PM
Surr: DNOP	114	21-129		%Rec	1	8/26/2022 2:36:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2022 5:05:00 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 5:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/25/2022 5:05:00 PM
Toluene	ND	0.047		mg/Kg	1	8/25/2022 5:05:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2022 5:05:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/25/2022 5:05:00 PM
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	8/25/2022 5:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	850	60		mg/Kg	20	8/29/2022 12:44:08 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-187 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:15:00 PM

Lab ID: 2208E18-033

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 2:46:43 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 2:46:43 PM
Surr: DNOP	96.5	21-129		%Rec	1	8/26/2022 2:46:43 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/25/2022 5:25:00 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 5:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 5:25:00 PM
Toluene	ND	0.050		mg/Kg	1	8/25/2022 5:25:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/25/2022 5:25:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/25/2022 5:25:00 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/25/2022 5:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	930	60		mg/Kg	20	8/29/2022 1:21:23 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-188 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:20:00 PM

Lab ID: 2208E18-034

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 2:57:16 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 2:57:16 PM
Surr: DNOP	75.0	21-129		%Rec	1	8/26/2022 2:57:16 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2022 5:44:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/25/2022 5:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 5:44:00 PM
Toluene	ND	0.047		mg/Kg	1	8/25/2022 5:44:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2022 5:44:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/25/2022 5:44:00 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	8/25/2022 5:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	780	60		mg/Kg	20	8/29/2022 1:33:48 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-189 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:25:00 PM

Lab ID: 2208E18-035

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 9:36:18 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 9:36:18 PM
Surr: DNOP	79.9	21-129		%Rec	1	8/26/2022 9:36:18 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 9:37:39 PM
Surr: BFB	99.2	37.7-212		%Rec	1	8/25/2022 9:37:39 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 9:37:39 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 9:37:39 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 9:37:39 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2022 9:37:39 PM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	8/25/2022 9:37:39 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	340	60		mg/Kg	20	8/29/2022 1:46:12 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-190 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:30:00 PM

Lab ID: 2208E18-036

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 10:08:51 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 10:08:51 PM
Surr: DNOP	65.0	21-129		%Rec	1	8/26/2022 10:08:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/25/2022 10:48:21 PM
Surr: BFB	97.3	37.7-212		%Rec	1	8/25/2022 10:48:21 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/25/2022 10:48:21 PM
Toluene	ND	0.046		mg/Kg	1	8/25/2022 10:48:21 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/25/2022 10:48:21 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/25/2022 10:48:21 PM
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	8/25/2022 10:48:21 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1400	60		mg/Kg	20	8/29/2022 1:58:38 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-07 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:10:00 PM

Lab ID: 2208E18-037

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 10:19:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/26/2022 10:19:38 PM
Surr: DNOP	95.4	21-129		%Rec	1	8/26/2022 10:19:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/25/2022 11:58:59 PM
Surr: BFB	101	37.7-212		%Rec	1	8/25/2022 11:58:59 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/25/2022 11:58:59 PM
Toluene	ND	0.049		mg/Kg	1	8/25/2022 11:58:59 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/25/2022 11:58:59 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2022 11:58:59 PM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	8/25/2022 11:58:59 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	190	60		mg/Kg	20	8/29/2022 2:11:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-19 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:00:00 AM

Lab ID: 2208E18-038

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 10:30:26 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 10:30:26 PM
Surr: DNOP	56.9	21-129		%Rec	1	8/26/2022 10:30:26 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/26/2022 12:22:29 AM
Surr: BFB	97.0	37.7-212		%Rec	1	8/26/2022 12:22:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/26/2022 12:22:29 AM
Toluene	ND	0.047		mg/Kg	1	8/26/2022 12:22:29 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/26/2022 12:22:29 AM
Xylenes, Total	ND	0.094		mg/Kg	1	8/26/2022 12:22:29 AM
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	8/26/2022 12:22:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	200	60		mg/Kg	20	8/29/2022 2:23:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-23 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 9:05:00 AM

Lab ID: 2208E18-039

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 10:41:17 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/26/2022 10:41:17 PM
Surr: DNOP	60.2	21-129		%Rec	1	8/26/2022 10:41:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/26/2022 12:46:00 AM
Surr: BFB	98.2	37.7-212		%Rec	1	8/26/2022 12:46:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/26/2022 12:46:00 AM
Toluene	ND	0.046		mg/Kg	1	8/26/2022 12:46:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/26/2022 12:46:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	8/26/2022 12:46:00 AM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	8/26/2022 12:46:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	280	61		mg/Kg	20	8/29/2022 2:35:51 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-11 4-6'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 12:45:00 PM

Lab ID: 2208E18-040

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/27/2022 12:07:59 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/27/2022 12:07:59 AM
Surr: DNOP	82.2	21-129		%Rec	1	8/27/2022 12:07:59 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/26/2022 1:09:37 AM
Surr: BFB	94.8	37.7-212		%Rec	1	8/26/2022 1:09:37 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/26/2022 1:09:37 AM
Toluene	ND	0.048		mg/Kg	1	8/26/2022 1:09:37 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/26/2022 1:09:37 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/26/2022 1:09:37 AM
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	8/26/2022 1:09:37 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	8/29/2022 2:48:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-12 4-6'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 12:50:00 PM

Lab ID: 2208E18-041

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:02:59 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:02:59 PM
Surr: DNOP	74.1	21-129		%Rec	1	8/26/2022 11:02:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/26/2022 1:33:14 AM
Surr: BFB	96.6	37.7-212		%Rec	1	8/26/2022 1:33:14 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/26/2022 1:33:14 AM
Toluene	ND	0.048		mg/Kg	1	8/26/2022 1:33:14 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/26/2022 1:33:14 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/26/2022 1:33:14 AM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	8/26/2022 1:33:14 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/30/2022 10:58:48 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-13 4-6'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 12:55:00 PM

Lab ID: 2208E18-042

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 11:13:49 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 11:13:49 PM
Surr: DNOP	85.0	21-129		%Rec	1	8/26/2022 11:13:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 1:56:58 AM
Surr: BFB	94.3	37.7-212		%Rec	1	8/26/2022 1:56:58 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/26/2022 1:56:58 AM
Toluene	ND	0.049		mg/Kg	1	8/26/2022 1:56:58 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 1:56:58 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 1:56:58 AM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	8/26/2022 1:56:58 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/30/2022 11:11:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-24 4-10'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 1:00:00 PM

Lab ID: 2208E18-043

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:24:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:24:38 PM
Surr: DNOP	88.4	21-129		%Rec	1	8/26/2022 11:24:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 2:20:36 AM
Surr: BFB	95.7	37.7-212		%Rec	1	8/26/2022 2:20:36 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/26/2022 2:20:36 AM
Toluene	ND	0.049		mg/Kg	1	8/26/2022 2:20:36 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 2:20:36 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 2:20:36 AM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	8/26/2022 2:20:36 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/30/2022 11:23:37 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-25 6-10'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 1:05:00 PM

Lab ID: 2208E18-044

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:35:27 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:35:27 PM
Surr: DNOP	89.1	21-129		%Rec	1	8/26/2022 11:35:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/26/2022 2:44:10 AM
Surr: BFB	96.4	37.7-212		%Rec	1	8/26/2022 2:44:10 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	8/26/2022 2:44:10 AM
Toluene	ND	0.046		mg/Kg	1	8/26/2022 2:44:10 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/26/2022 2:44:10 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/26/2022 2:44:10 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	8/26/2022 2:44:10 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/30/2022 11:36:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-26 4-9'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 1:10:00 PM

Lab ID: 2208E18-045

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/26/2022 11:46:17 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/26/2022 11:46:17 PM
Surr: DNOP	85.3	21-129		%Rec	1	8/26/2022 11:46:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 3:31:17 AM
Surr: BFB	100	37.7-212		%Rec	1	8/26/2022 3:31:17 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/26/2022 3:31:17 AM
Toluene	ND	0.050		mg/Kg	1	8/26/2022 3:31:17 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 3:31:17 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 3:31:17 AM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	8/26/2022 3:31:17 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	80	60		mg/Kg	20	8/30/2022 12:13:16 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-27 4-7'

Project: Routh SWD Tank Battery

Collection Date: 8/22/2022 1:15:00 PM

Lab ID: 2208E18-046

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	15		mg/Kg	1	8/26/2022 11:57:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/26/2022 11:57:07 PM
Surr: DNOP	100	21-129		%Rec	1	8/26/2022 11:57:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/26/2022 3:54:49 AM
Surr: BFB	97.9	37.7-212		%Rec	1	8/26/2022 3:54:49 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/26/2022 3:54:49 AM
Toluene	ND	0.048		mg/Kg	1	8/26/2022 3:54:49 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/26/2022 3:54:49 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/26/2022 3:54:49 AM
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	8/26/2022 3:54:49 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/30/2022 12:25:41 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208E18

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-191 4'

Project: Routh SWD Tank Battery

Collection Date: 8/19/2022 12:35:00 PM

Lab ID: 2208E18-047

Matrix: SOIL

Received Date: 8/24/2022 7:15:00 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	14		mg/Kg	1	8/30/2022 3:44:51 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/30/2022 3:44:51 PM
Surr: DNOP	97.2	21-129		%Rec	1	8/30/2022 3:44:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 4:18:20 AM
Surr: BFB	95.9	37.7-212		%Rec	1	8/26/2022 4:18:20 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/26/2022 4:18:20 AM
Toluene	ND	0.049		mg/Kg	1	8/26/2022 4:18:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 4:18:20 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/26/2022 4:18:20 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	8/26/2022 4:18:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	1100	60		mg/Kg	20	8/30/2022 12:38:06 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69809</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69809</b>	RunNo: <b>90607</b>								
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238612</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-69809</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69809</b>	RunNo: <b>90607</b>								
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238613</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	95.5	90	110			

Sample ID: <b>MB-69810</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69810</b>	RunNo: <b>90633</b>								
Prep Date: <b>8/28/2022</b>	Analysis Date: <b>8/28/2022</b>	SeqNo: <b>3238679</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-69810</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69810</b>	RunNo: <b>90633</b>								
Prep Date: <b>8/28/2022</b>	Analysis Date: <b>8/28/2022</b>	SeqNo: <b>3238680</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	93.2	90	110			

Sample ID: <b>MB-69816</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69816</b>	RunNo: <b>90648</b>								
Prep Date: <b>8/29/2022</b>	Analysis Date: <b>8/29/2022</b>	SeqNo: <b>3239381</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-69816</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69816</b>	RunNo: <b>90648</b>								
Prep Date: <b>8/29/2022</b>	Analysis Date: <b>8/29/2022</b>	SeqNo: <b>3239382</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	95.6	90	110			

**Qualifiers:**

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

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69846</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69846</b>	RunNo: <b>90664</b>								
Prep Date: <b>8/30/2022</b>	Analysis Date: <b>8/30/2022</b>	SeqNo: <b>3241292</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-69846</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69846</b>	RunNo: <b>90664</b>								
Prep Date: <b>8/30/2022</b>	Analysis Date: <b>8/30/2022</b>	SeqNo: <b>3241294</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69750</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69750</b>			RunNo: <b>90576</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3237027</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	15	50.00	0	75.6	64.4	127			
Surr: DNOP	4.0		5.000		80.1	21	129			

Sample ID: <b>MB-69750</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69750</b>			RunNo: <b>90576</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3237029</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	21	129			

Sample ID: <b>2208E18-015AMS</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>BES22-169</b>	Batch ID: <b>69750</b>			RunNo: <b>90576</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3237278</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	150	13	43.67	0	343	36.1	154			S
Surr: DNOP	5.1		4.367		118	21	129			

Sample ID: <b>2208E18-015AMSD</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>BES22-169</b>	Batch ID: <b>69750</b>			RunNo: <b>90576</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3237279</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	15	50.05	0	122	36.1	154	84.4	33.9	R
Surr: DNOP	5.1		5.005		102	21	129	0	0	

Sample ID: <b>LCS-69741</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69741</b>			RunNo: <b>90606</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/26/2022</b>			SeqNo: <b>3237339</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	15	50.00	0	79.1	64.4	127			
Surr: DNOP	3.5		5.000		71.0	21	129			

**Qualifiers:**

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

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69741</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69741</b>	RunNo: <b>90606</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238732</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	6.5		10.00		64.7	21	129			

Sample ID: <b>LCS-69775</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69775</b>	RunNo: <b>90606</b>								
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238776</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.8	64.4	127			
Surr: DNOP	4.3		5.000		85.2	21	129			

Sample ID: <b>MB-69775</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69775</b>	RunNo: <b>90606</b>								
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238777</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		84.1	21	129			

Sample ID: <b>2208E18-035AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-189 4'</b>	Batch ID: <b>69775</b>	RunNo: <b>90606</b>								
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238778</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	14	46.86	0	88.5	36.1	154			
Surr: DNOP	3.3		4.686		71.3	21	129			

Sample ID: <b>2208E18-035AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-189 4'</b>	Batch ID: <b>69775</b>	RunNo: <b>90606</b>								
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>	SeqNo: <b>3238779</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	15	50.10	0	90.5	36.1	154	8.95	33.9	
Surr: DNOP	3.5		5.010		69.5	21	129	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69837</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69837</b>		RunNo: <b>90655</b>							
Prep Date: <b>8/29/2022</b>	Analysis Date: <b>8/30/2022</b>		SeqNo: <b>3239736</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.9	21	129			

Sample ID: <b>MB-69837</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69837</b>		RunNo: <b>90655</b>							
Prep Date: <b>8/29/2022</b>	Analysis Date: <b>8/30/2022</b>		SeqNo: <b>3239737</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	21	129			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69732</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69732</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235732</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	37.7	212			

Sample ID: <b>lcs-69732</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69732</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235733</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	93.8	72.3	137			
Surr: BFB	1900		1000		195	37.7	212			

Sample ID: <b>mb-69740</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69740</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235756</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		99.6	37.7	212			

Sample ID: <b>lcs-69740</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69740</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235757</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	99.4	72.3	137			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: <b>2208e18-035ams</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-189 4'</b>	Batch ID: <b>69740</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235759</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.78	0	109	70	130			
Surr: BFB	2000		991.1		205	37.7	212			

Sample ID: <b>2208e18-035amsd</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-189 4'</b>	Batch ID: <b>69740</b>			RunNo: <b>90581</b>						
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>			SeqNo: <b>3235760</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208e18-035amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-189 4'</b>	Batch ID: <b>69740</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235760</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.75	0	110	70	130	0.339	20	
Surr: BFB	2100		990.1		208	37.7	212	0	0	

Sample ID: <b>lcs-69739</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235854</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	72.3	137			
Surr: BFB	2300		1000		229	37.7	212			S

Sample ID: <b>mb-69739</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235855</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	37.7	212			

Sample ID: <b>2208e18-015ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-169</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235857</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	24	23.88	0	127	70	130			
Surr: BFB	6600		4776		138	37.7	212			

Sample ID: <b>2208e18-015amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-169</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235858</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	35	24	23.63	0	150	70	130	15.3	20	S
Surr: BFB	6500		4726		138	37.7	212	0	0	

**Qualifiers:**

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



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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69732</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69732</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235779</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	0.93		1.000		93.5	70	130			

Sample ID: <b>LCS-69732</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69732</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235780</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	85.1	80	120			
Toluene	0.90	0.050	1.000	0	90.5	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.0	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.8	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.7	70	130			

Sample ID: <b>mb-69740</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69740</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235803</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		94.7	70	130			

Sample ID: <b>LCS-69740</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69740</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235804</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	93.4	80	120			
Toluene	0.96	0.050	1.000	0	96.0	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.1	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	70	130			

**Qualifiers:**

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

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208e18-036ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-190 4'</b>	Batch ID: <b>69740</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235807</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9285	0	108	68.8	120			
Toluene	1.0	0.046	0.9285	0	112	73.6	124			
Ethylbenzene	1.1	0.046	0.9285	0	114	72.7	129			
Xylenes, Total	3.2	0.093	2.786	0.01766	113	75.7	126			
Surr: 4-Bromofluorobenzene	0.87		0.9285		93.5	70	130			

Sample ID: <b>2208e18-036amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-190 4'</b>	Batch ID: <b>69740</b>	RunNo: <b>90581</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235808</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.023	0.9268	0	107	68.8	120	1.35	20	
Toluene	1.0	0.046	0.9268	0	112	73.6	124	0.472	20	
Ethylbenzene	1.1	0.046	0.9268	0	114	72.7	129	0.122	20	
Xylenes, Total	3.2	0.093	2.780	0.01766	113	75.7	126	0.301	20	
Surr: 4-Bromofluorobenzene	0.87		0.9268		93.8	70	130	0	0	

Sample ID: <b>lcs-69739</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235884</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	90.0	80	120			
Toluene	0.92	0.050	1.000	0	92.5	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: <b>mb-69739</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235885</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	0.99		1.000		99.4	70	130			

**Qualifiers:**

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

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

WO#: 2208E18

02-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208e18-016ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-170</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235888</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9785	0	102	68.8	120			
Toluene	1.0	0.049	0.9785	0	106	73.6	124			
Ethylbenzene	1.1	0.049	0.9785	0	110	72.7	129			
Xylenes, Total	3.2	0.098	2.935	0	109	75.7	126			
Surr: 4-Bromofluorobenzene	0.97		0.9785		98.9	70	130			

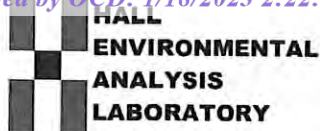
Sample ID: <b>2208e18-016amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BES22-170</b>	Batch ID: <b>69739</b>	RunNo: <b>90582</b>								
Prep Date: <b>8/24/2022</b>	Analysis Date: <b>8/25/2022</b>	SeqNo: <b>3235889</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	0.9881	0	101	68.8	120	0.339	20	
Toluene	1.0	0.049	0.9881	0	105	73.6	124	0.461	20	
Ethylbenzene	1.1	0.049	0.9881	0	108	72.7	129	0.388	20	
Xylenes, Total	3.2	0.099	2.964	0	108	75.7	126	0.490	20	
Surr: 4-Bromofluorobenzene	0.99		0.9881		101	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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

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

## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2208E18

RcptNo: 1

Received By: Juan Rojas

8/24/2022 7:15:00 AM

*[Signature]*

Completed By: Juan Rojas

8/24/2022 7:24:36 AM

*[Signature]*

Reviewed By: *[Signature]* 8-24-22

**Chain of Custody**

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

**Log In**

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *jr 8/24/22*

**Special Handling (if applicable)**

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

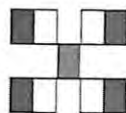
**17. Cooler Information**

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Not Present			



Chain-of-Custody Record							
<div style="display: flex; justify-content: space-between;"> <div>Client: <u>Vertex (EOG)</u></div> <div>Turn-Around Time: <input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>5 Day</u></div> </div>							
Project Name: <u>Rough SMD Tank Battery</u>							
Project #: <u>22E-00716</u>							
Project Manager: <u>Monica Peppin</u>							
Sampler: <u>SPC</u> On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No							
# of Coolers: <u>1</u>							
Cooler Temp (including CF): <u>16-0 = 1.6</u> (°C)							
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	
8/19	9:30	Soil	BES22-155 4'	1403 jar	Ice	2208E18	
	9:35		BES22-156 4'			-001	
	9:40		BES22-157 4'			-002	
	9:45		BES22-158 4'			-003	
	9:50		BES22-159 4'			-004	
	9:55		BES22-160 4'			-005	
	10:00		BES22-161 4'			-006	
	10:05		BES22-162 4'			-007	
	10:10		BES22-163 4'			-008	
	10:15		BES22-164 4'			-009	
	10:20		BES22-165 4'			-010	
	10:25		BES22-166 4'			-011	
						-012	
Relinquished by: <u>Sally Car-Har</u>				Received by: <u>Monica</u>		Date: <u>8/19/22</u> Time: <u>930</u>	
Date: <u>8/22</u> Time: <u>17:20</u>				Relinquished by: <u>[Signature]</u>		Date: <u>8/22/22</u> Time: <u>1700</u>	

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



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

BTX / MTBE / TMB's (8021)	✓	
TPH:8015D(GRO / DRO / MRO)	✓	
8081 Pesticides/8082 PCB's		
EDB (Method 504.1)		
PAHs by 8310 or 8270SIMS		
RCRA 8 Metals	✓	
(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)		

Remarks:

page 1/4

direct Bill Eoen

Received by:	Via:	Date	Time
<i>Alumino</i>		<i>8/18/11</i>	<i>030</i>

Received by: Wanda C. P. Wright Date: 1/19/11 Time: 1:30

24 June 1977







## Chain-of-Custody Record

Client: Vertex (EOG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush

Project Name:

Routh S&W truck Battery

Project #:

22E-007110

Project Manager:

Monica Peppin

Sampler:

SPC

On Ice:

☒ Yes ☐ No

# of Coolers:

Cooler Temp (including CF):

1.6-0-1.6 (°C)

Date

Time

Matrix

Sample Name

4'

Container Type and #

Preservative Type

HEAL No.

2208E18

BTEX / MTBE / TMBs (8021)

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

CNF, 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)

Date:

Time:

Relinquished by:

Sally Carttar

4'

Received by:

Via:

Date

Time

Remarks:

page 314

direct bill EOG

Date:

Time:

Relinquished by:

Sally Carttar

4'

Received by:

Via:

Date

Time

Remarks:

page 314

direct bill EOG



## Chain-of-Custody Record

Client: Vertex (E06)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Project Manager:

Monica Peppin

Sampler:

SPC

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 16.0 = 1.6 (°C)

Container Type and #

Preservative Type

HEAL No.

2208-18

ice

-037

-038

-039

-040

-041

-042

-043

-044

-045

-046

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

September 02, 2022

Monica Peppin

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Routh SWD Tank Battery

OrderNo.: 2208F02

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 26 sample(s) on 8/25/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-03 4-7'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:25:00 AM

Lab ID: 2208F02-001

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	60		mg/Kg	20	8/30/2022 10:04:39 PM	69866
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 7:13:19 PM	69807
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/29/2022 7:13:19 PM	69807
Surr: DNOP	98.0	21-129		%Rec	1	8/29/2022 7:13:19 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/26/2022 3:07:00 PM	69768
Surr: BFB	105	37.7-212		%Rec	1	8/26/2022 3:07:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/26/2022 3:07:00 PM	69768
Toluene	ND	0.048		mg/Kg	1	8/26/2022 3:07:00 PM	69768
Ethylbenzene	ND	0.048		mg/Kg	1	8/26/2022 3:07:00 PM	69768
Xylenes, Total	ND	0.097		mg/Kg	1	8/26/2022 3:07:00 PM	69768
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/26/2022 3:07:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-20 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:30:00 AM

Lab ID: 2208F02-002

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	89	60		mg/Kg	20	8/30/2022 10:41:41 PM	69866
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 7:24:10 PM	69807
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 7:24:10 PM	69807
Surr: DNOP	117	21-129		%Rec	1	8/29/2022 7:24:10 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 3:27:00 PM	69768
Surr: BFB	104	37.7-212		%Rec	1	8/26/2022 3:27:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 3:27:00 PM	69768
Toluene	ND	0.050		mg/Kg	1	8/26/2022 3:27:00 PM	69768
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 3:27:00 PM	69768
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 3:27:00 PM	69768
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	8/26/2022 3:27:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-22 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:35:00 AM

Lab ID: 2208F02-003

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	350	60		mg/Kg	20	8/30/2022 10:54:01 PM	69866
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 7:35:00 PM	69807
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 7:35:00 PM	69807
Surr: DNOP	115	21-129		%Rec	1	8/29/2022 7:35:00 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/26/2022 3:46:00 PM	69768
Surr: BFB	106	37.7-212		%Rec	1	8/26/2022 3:46:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.023		mg/Kg	1	8/26/2022 3:46:00 PM	69768
Toluene	ND	0.047		mg/Kg	1	8/26/2022 3:46:00 PM	69768
Ethylbenzene	ND	0.047		mg/Kg	1	8/26/2022 3:46:00 PM	69768
Xylenes, Total	ND	0.094		mg/Kg	1	8/26/2022 3:46:00 PM	69768
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/26/2022 3:46:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-152 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:40:00 AM

Lab ID: 2208F02-004

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	140	59		mg/Kg	20	8/30/2022 11:31:03 PM	69866
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 7:45:56 PM	69807
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 7:45:56 PM	69807
Surr: DNOP	100	21-129		%Rec	1	8/29/2022 7:45:56 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/26/2022 4:06:00 PM	69768
Surr: BFB	106	37.7-212		%Rec	1	8/26/2022 4:06:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/26/2022 4:06:00 PM	69768
Toluene	ND	0.047		mg/Kg	1	8/26/2022 4:06:00 PM	69768
Ethylbenzene	ND	0.047		mg/Kg	1	8/26/2022 4:06:00 PM	69768
Xylenes, Total	ND	0.095		mg/Kg	1	8/26/2022 4:06:00 PM	69768
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/26/2022 4:06:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-153 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:45:00 AM

Lab ID: 2208F02-005

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	61		mg/Kg	20	8/30/2022 11:43:24 PM	69866
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 7:56:46 PM	69807
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/29/2022 7:56:46 PM	69807
Surr: DNOP	98.9	21-129		%Rec	1	8/29/2022 7:56:46 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/26/2022 4:26:00 PM	69768
Surr: BFB	105	37.7-212		%Rec	1	8/26/2022 4:26:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/26/2022 4:26:00 PM	69768
Toluene	ND	0.047		mg/Kg	1	8/26/2022 4:26:00 PM	69768
Ethylbenzene	ND	0.047		mg/Kg	1	8/26/2022 4:26:00 PM	69768
Xylenes, Total	ND	0.095		mg/Kg	1	8/26/2022 4:26:00 PM	69768
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/26/2022 4:26:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 5 of 31

## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-154 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:50:00 AM

Lab ID: 2208F02-006

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 1:54:46 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 8:07:35 PM	69807
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 8:07:35 PM	69807
Surr: DNOP	96.7	21-129		%Rec	1	8/29/2022 8:07:35 PM	69807
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 4:46:00 PM	69768
Surr: BFB	104	37.7-212		%Rec	1	8/26/2022 4:46:00 PM	69768
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 4:46:00 PM	69768
Toluene	ND	0.049		mg/Kg	1	8/26/2022 4:46:00 PM	69768
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 4:46:00 PM	69768
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 4:46:00 PM	69768
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	8/26/2022 4:46:00 PM	69768

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-28 4-7'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 9:55:00 AM

Lab ID: 2208F02-007

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 2:32:00 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 8:50:26 PM	69801
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/29/2022 8:50:26 PM	69801
Surr: DNOP	92.5	21-129		%Rec	1	8/29/2022 8:50:26 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 6:44:00 PM	69774
Surr: BFB	102	37.7-212		%Rec	1	8/26/2022 6:44:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 6:44:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 6:44:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 6:44:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 6:44:00 PM	69774
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	8/26/2022 6:44:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-29 4-7'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:00:00 AM

Lab ID: 2208F02-008

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 3:34:01 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 9:22:33 PM	69801
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/29/2022 9:22:33 PM	69801
Surr: DNOP	93.5	21-129		%Rec	1	8/29/2022 9:22:33 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 7:43:00 PM	69774
Surr: BFB	111	37.7-212		%Rec	1	8/26/2022 7:43:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 7:43:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 7:43:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 7:43:00 PM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 7:43:00 PM	69774
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/26/2022 7:43:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: WES22-30 4-10'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:05:00 AM

Lab ID: 2208F02-009

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	200	61		mg/Kg	20	8/31/2022 3:46:26 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 9:33:14 PM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 9:33:14 PM	69801
Surr: DNOP	101	21-129		%Rec	1	8/29/2022 9:33:14 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 8:42:00 PM	69774
Surr: BFB	105	37.7-212		%Rec	1	8/26/2022 8:42:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/26/2022 8:42:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 8:42:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 8:42:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 8:42:00 PM	69774
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	8/26/2022 8:42:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-192 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:10:00 AM

Lab ID: 2208F02-010

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 3:58:50 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	8/29/2022 9:43:55 PM	69801
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/29/2022 9:43:55 PM	69801
Surr: DNOP	91.0	21-129		%Rec	1	8/29/2022 9:43:55 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 9:01:00 PM	69774
Surr: BFB	103	37.7-212		%Rec	1	8/26/2022 9:01:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/26/2022 9:01:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 9:01:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 9:01:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 9:01:00 PM	69774
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	8/26/2022 9:01:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-193 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:15:00 AM

Lab ID: 2208F02-011

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 4:11:15 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 9:54:33 PM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 9:54:33 PM	69801
Surr: DNOP	94.4	21-129		%Rec	1	8/29/2022 9:54:33 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 9:21:00 PM	69774
Surr: BFB	101	37.7-212		%Rec	1	8/26/2022 9:21:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 9:21:00 PM	69774
Toluene	ND	0.050		mg/Kg	1	8/26/2022 9:21:00 PM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 9:21:00 PM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 9:21:00 PM	69774
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	8/26/2022 9:21:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-194 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:20:00 AM

Lab ID: 2208F02-012

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 4:23:39 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 10:05:11 PM	69801
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/29/2022 10:05:11 PM	69801
Surr: DNOP	91.5	21-129		%Rec	1	8/29/2022 10:05:11 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 9:41:00 PM	69774
Surr: BFB	96.3	37.7-212		%Rec	1	8/26/2022 9:41:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 9:41:00 PM	69774
Toluene	ND	0.050		mg/Kg	1	8/26/2022 9:41:00 PM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 9:41:00 PM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/26/2022 9:41:00 PM	69774
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	8/26/2022 9:41:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-195 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:25:00 AM

Lab ID: 2208F02-013

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 4:36:04 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 10:15:49 PM	69801
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/29/2022 10:15:49 PM	69801
Surr: DNOP	93.8	21-129		%Rec	1	8/29/2022 10:15:49 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 10:00:00 PM	69774
Surr: BFB	104	37.7-212		%Rec	1	8/26/2022 10:00:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 10:00:00 PM	69774
Toluene	ND	0.050		mg/Kg	1	8/26/2022 10:00:00 PM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 10:00:00 PM	69774
Xylenes, Total	ND	0.10		mg/Kg	1	8/26/2022 10:00:00 PM	69774
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	8/26/2022 10:00:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-196 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:30:00 AM

Lab ID: 2208F02-014

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 4:48:28 PM	69881
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 10:26:26 PM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 10:26:26 PM	69801
Surr: DNOP	92.3	21-129		%Rec	1	8/29/2022 10:26:26 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 10:20:00 PM	69774
Surr: BFB	104	37.7-212		%Rec	1	8/26/2022 10:20:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 10:20:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 10:20:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 10:20:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 10:20:00 PM	69774
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	8/26/2022 10:20:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-197 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:35:00 AM

Lab ID: 2208F02-015

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 5:50:30 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 10:48:00 PM	69801
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/29/2022 10:48:00 PM	69801
Surr: DNOP	95.9	21-129		%Rec	1	8/29/2022 10:48:00 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 10:40:00 PM	69774
Surr: BFB	103	37.7-212		%Rec	1	8/26/2022 10:40:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 10:40:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 10:40:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 10:40:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 10:40:00 PM	69774
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	8/26/2022 10:40:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-198 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:40:00 AM

Lab ID: 2208F02-016

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 6:27:42 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 10:58:58 PM	69801
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/29/2022 10:58:58 PM	69801
Surr: DNOP	96.5	21-129		%Rec	1	8/29/2022 10:58:58 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/26/2022 10:59:00 PM	69774
Surr: BFB	105	37.7-212		%Rec	1	8/26/2022 10:59:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 10:59:00 PM	69774
Toluene	ND	0.049		mg/Kg	1	8/26/2022 10:59:00 PM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/26/2022 10:59:00 PM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/26/2022 10:59:00 PM	69774
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	8/26/2022 10:59:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-199 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:45:00 AM

Lab ID: 2208F02-017

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 7:04:56 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 11:09:56 PM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 11:09:56 PM	69801
Surr: DNOP	96.4	21-129		%Rec	1	8/29/2022 11:09:56 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 11:39:00 PM	69774
Surr: BFB	103	37.7-212		%Rec	1	8/26/2022 11:39:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 11:39:00 PM	69774
Toluene	ND	0.050		mg/Kg	1	8/26/2022 11:39:00 PM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 11:39:00 PM	69774
Xylenes, Total	ND	0.10		mg/Kg	1	8/26/2022 11:39:00 PM	69774
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/26/2022 11:39:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-200 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 10:50:00 AM

Lab ID: 2208F02-018

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 7:17:20 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	80	14		mg/Kg	1	8/30/2022 12:31:26 PM	69801
Motor Oil Range Organics (MRO)	52	47		mg/Kg	1	8/30/2022 12:31:26 PM	69801
Surr: DNOP	95.9	21-129		%Rec	1	8/30/2022 12:31:26 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/26/2022 11:58:00 PM	69774
Surr: BFB	103	37.7-212		%Rec	1	8/26/2022 11:58:00 PM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/26/2022 11:58:00 PM	69774
Toluene	ND	0.050		mg/Kg	1	8/26/2022 11:58:00 PM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/26/2022 11:58:00 PM	69774
Xylenes, Total	ND	0.10		mg/Kg	1	8/26/2022 11:58:00 PM	69774
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	8/26/2022 11:58:00 PM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-201 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:00:00 AM

Lab ID: 2208F02-019

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	210	60		mg/Kg	20	8/31/2022 7:54:34 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/29/2022 11:42:55 PM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/29/2022 11:42:55 PM	69801
Surr: DNOP	101	21-129		%Rec	1	8/29/2022 11:42:55 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/27/2022 12:18:00 AM	69774
Surr: BFB	98.5	37.7-212		%Rec	1	8/27/2022 12:18:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/27/2022 12:18:00 AM	69774
Toluene	ND	0.048		mg/Kg	1	8/27/2022 12:18:00 AM	69774
Ethylbenzene	ND	0.048		mg/Kg	1	8/27/2022 12:18:00 AM	69774
Xylenes, Total	ND	0.096		mg/Kg	1	8/27/2022 12:18:00 AM	69774
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	8/27/2022 12:18:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-202 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:05:00 AM

Lab ID: 2208F02-020

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	140	60		mg/Kg	20	8/31/2022 8:06:59 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/29/2022 11:53:52 PM	69801
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/29/2022 11:53:52 PM	69801
Surr: DNOP	102	21-129		%Rec	1	8/29/2022 11:53:52 PM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 12:38:00 AM	69774
Surr: BFB	105	37.7-212		%Rec	1	8/27/2022 12:38:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/27/2022 12:38:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 12:38:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 12:38:00 AM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/27/2022 12:38:00 AM	69774
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	8/27/2022 12:38:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-203 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:10:00 AM

Lab ID: 2208F02-021

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 8:19:23 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/30/2022 12:04:51 AM	69801
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/30/2022 12:04:51 AM	69801
Surr: DNOP	97.6	21-129		%Rec	1	8/30/2022 12:04:51 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 12:57:00 AM	69774
Surr: BFB	101	37.7-212		%Rec	1	8/27/2022 12:57:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/27/2022 12:57:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 12:57:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 12:57:00 AM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/27/2022 12:57:00 AM	69774
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	8/27/2022 12:57:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-204 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:15:00 AM

Lab ID: 2208F02-022

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	120	60		mg/Kg	20	8/31/2022 8:31:48 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/30/2022 12:15:50 AM	69801
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/30/2022 12:15:50 AM	69801
Surr: DNOP	93.7	21-129		%Rec	1	8/30/2022 12:15:50 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 1:17:00 AM	69774
Surr: BFB	102	37.7-212		%Rec	1	8/27/2022 1:17:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/27/2022 1:17:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 1:17:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 1:17:00 AM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/27/2022 1:17:00 AM	69774
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	8/27/2022 1:17:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-205 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:20:00 AM

Lab ID: 2208F02-023

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	63	60		mg/Kg	20	8/31/2022 8:44:12 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	8/30/2022 12:26:50 AM	69801
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/30/2022 12:26:50 AM	69801
Surr: DNOP	90.1	21-129		%Rec	1	8/30/2022 12:26:50 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 1:36:00 AM	69774
Surr: BFB	104	37.7-212		%Rec	1	8/27/2022 1:36:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/27/2022 1:36:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 1:36:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 1:36:00 AM	69774
Xylenes, Total	ND	0.098		mg/Kg	1	8/27/2022 1:36:00 AM	69774
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/27/2022 1:36:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-206 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:25:00 AM

Lab ID: 2208F02-024

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	8/31/2022 8:56:36 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/30/2022 12:37:52 AM	69801
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2022 12:37:52 AM	69801
Surr: DNOP	101	21-129		%Rec	1	8/30/2022 12:37:52 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 1:56:00 AM	69774
Surr: BFB	105	37.7-212		%Rec	1	8/27/2022 1:56:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/27/2022 1:56:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 1:56:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 1:56:00 AM	69774
Xylenes, Total	ND	0.099		mg/Kg	1	8/27/2022 1:56:00 AM	69774
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/27/2022 1:56:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-207 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:30:00 AM

Lab ID: 2208F02-025

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	390	60		mg/Kg	20	8/31/2022 9:09:01 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/30/2022 12:48:59 AM	69801
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/30/2022 12:48:59 AM	69801
Surr: DNOP	89.9	21-129		%Rec	1	8/30/2022 12:48:59 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/27/2022 2:16:00 AM	69774
Surr: BFB	102	37.7-212		%Rec	1	8/27/2022 2:16:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.024		mg/Kg	1	8/27/2022 2:16:00 AM	69774
Toluene	ND	0.049		mg/Kg	1	8/27/2022 2:16:00 AM	69774
Ethylbenzene	ND	0.049		mg/Kg	1	8/27/2022 2:16:00 AM	69774
Xylenes, Total	ND	0.097		mg/Kg	1	8/27/2022 2:16:00 AM	69774
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	8/27/2022 2:16:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208F02

Date Reported: 9/2/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: BES22-208 4'

Project: Routh SWD Tank Battery

Collection Date: 8/23/2022 11:35:00 AM

Lab ID: 2208F02-026

Matrix: SOIL

Received Date: 8/25/2022 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	420	60		mg/Kg	20	8/31/2022 9:21:25 PM	69877
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/30/2022 1:00:07 AM	69801
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/30/2022 1:00:07 AM	69801
Surr: DNOP	97.6	21-129		%Rec	1	8/30/2022 1:00:07 AM	69801
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/27/2022 2:35:00 AM	69774
Surr: BFB	103	37.7-212		%Rec	1	8/27/2022 2:35:00 AM	69774
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	8/27/2022 2:35:00 AM	69774
Toluene	ND	0.050		mg/Kg	1	8/27/2022 2:35:00 AM	69774
Ethylbenzene	ND	0.050		mg/Kg	1	8/27/2022 2:35:00 AM	69774
Xylenes, Total	ND	0.10		mg/Kg	1	8/27/2022 2:35:00 AM	69774
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	8/27/2022 2:35:00 AM	69774

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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 26 of 31

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

WO#: 2208F02

02-Sep-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69866</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69866</b>	RunNo: <b>90679</b>								
Prep Date: <b>8/30/2022</b>	Analysis Date: <b>8/30/2022</b>	SeqNo: <b>3240624</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-69866</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69866</b>	RunNo: <b>90679</b>								
Prep Date: <b>8/30/2022</b>	Analysis Date: <b>8/30/2022</b>	SeqNo: <b>3240626</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	95.2	90	110			

Sample ID: <b>MB-69881</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69881</b>	RunNo: <b>90702</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>8/31/2022</b>	SeqNo: <b>3243311</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-69881</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69881</b>	RunNo: <b>90702</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>8/31/2022</b>	SeqNo: <b>3243312</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	96.7	90	110			

Sample ID: <b>MB-69877</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69877</b>	RunNo: <b>90702</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>8/31/2022</b>	SeqNo: <b>3243343</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-69877</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69877</b>	RunNo: <b>90702</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>8/31/2022</b>	SeqNo: <b>3243344</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	101	90	110			

**Qualifiers:**

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



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

WO#: 2208F02

02-Sep-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69807</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69807</b>			RunNo: <b>90634</b>						
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/29/2022</b>			SeqNo: <b>3238841</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	15	50.00	0	80.1	64.4	127			
Surr: DNOP	4.0		5.000		79.2	21	129			

Sample ID: <b>MB-69807</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69807</b>			RunNo: <b>90634</b>						
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/29/2022</b>			SeqNo: <b>3238842</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.3	21	129			

Sample ID: <b>LCS-69801</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69801</b>			RunNo: <b>90634</b>						
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/29/2022</b>			SeqNo: <b>3239245</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	15	50.00	0	78.3	64.4	127			
Surr: DNOP	4.0		5.000		80.7	21	129			

Sample ID: <b>MB-69801</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69801</b>			RunNo: <b>90634</b>						
Prep Date: <b>8/26/2022</b>	Analysis Date: <b>8/29/2022</b>			SeqNo: <b>3239247</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		84.4	21	129			

Sample ID: <b>LCS-69837</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69837</b>			RunNo: <b>90655</b>						
Prep Date: <b>8/29/2022</b>	Analysis Date: <b>8/30/2022</b>			SeqNo: <b>3239736</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.9	21	129			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208F02

02-Sep-22

Client: EOG

Project: Routh SWD Tank Battery

Sample ID: MB-69837	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69837	RunNo: 90655								
Prep Date: 8/29/2022	Analysis Date: 8/30/2022	SeqNo: 3239737		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		101	21	129			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2208F02

02-Sep-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-69768</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69768</b>		RunNo: <b>90614</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>		SeqNo: <b>3237469</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	72.3	137			
Surr: BFB	2300		1000		227	37.7	212			S

Sample ID: <b>mb-69768</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69768</b>		RunNo: <b>90614</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>		SeqNo: <b>3237470</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	970		1000		97.0	37.7	212			

Sample ID: <b>mb-69774</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69774</b>		RunNo: <b>90614</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>		SeqNo: <b>3237493</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		107	37.7	212			

Sample ID: <b>lcs-69774</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69774</b>		RunNo: <b>90618</b>							
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/28/2022</b>		SeqNo: <b>3237715</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	57	5.0	50.00	0	114	72.3	137			
Surr: BFB	3800		1000		380	37.7	212			S

**Qualifiers:**

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

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

WO#: 2208F02

02-Sep-22

**Client:** EOG**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-69768</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69768</b>			RunNo: <b>90614</b>						
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>			SeqNo: <b>3237522</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	80.9	80	120			
Toluene	0.83	0.050	1.000	0	83.1	80	120			
Ethylbenzene	0.85	0.050	1.000	0	84.5	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	70	130			

Sample ID: <b>mb-69768</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69768</b>			RunNo: <b>90614</b>						
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>			SeqNo: <b>3237523</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		95.3	70	130			

Sample ID: <b>lcs-69774</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69774</b>			RunNo: <b>90614</b>						
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>			SeqNo: <b>3237545</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.4	80	120			
Toluene	0.88	0.050	1.000	0	88.3	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.6	70	130			

Sample ID: <b>mb-69774</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69774</b>			RunNo: <b>90614</b>						
Prep Date: <b>8/25/2022</b>	Analysis Date: <b>8/26/2022</b>			SeqNo: <b>3237546</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	0.99		1.000		98.8	70	130			

**Qualifiers:**

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



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

## Sample Log-In Check List

Client Name: EOG

Work Order Number: 2208F02

RcptNo: 1

Received By: Cheyenne Cason

8/25/2022 7:55:00 AM

*Chad*

Completed By: Cheyenne Cason

8/25/2022 8:01:55 AM

*Chad*Reviewed By: *JA 8-25-22*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *Cmc 8/25/22*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Not Present			







## Chain-of-Custody Record

Client: EOG Resources Inc

Mailing Address: On file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush 9 Day

Project Name:

Routh SWD Tank Battery

Project #:

225-00716

Project Manager:

Monica Peppin

Sampler: S. Carttar

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 4 2.1 to 2.2 (°C)

Container Type and #

Yoz, Jar

Ice

Preservative Type

T208502

HEAL No.

013

014

015

016

017

018

019

020

021

022

023

024

Date

8/23/02 10:25

10:30

10:35

10:40

10:45

10:50

11:00

11:05

11:10

11:15

11:20

11:25

Sample Name

BES22-195

BES22-196

BES22-197

BES22-198

BES22-199

BES22-200

BES22-201

BES22-202

BES22-203

BES22-204

BES22-205

BES22-206

Matrix

Soil

Relinquished by:

S. Reta

Date:

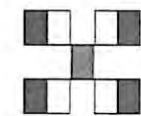
8/23/02 17:10

Relinquished by:

admiral

Date:

8/23/02 19:00

HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl<sub>2</sub>, F<sub>2</sub>, Br<sub>2</sub>, 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)

Remarks:

Direct Bill to EOG Resources Inc

Received by: Via: Date: Time

admiral 8/24/02 10:30

Received by: Via: Date: Time

Cmc cany 8/25/02 07:55



## Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Rough SWD Tank Battery

226-00716

Project Manager:

Monica Peppin

☐ Level 4 (Full Validation)

Sampler: S. Cartter

# of Coolers: (

Cooler Temp<sub>(including CF)</sub>: 2.1 + 0.122.2 (°C)

Date	Time	Matrix	Sample Name
1/23/22	11:30	Soil	BE522-207
1/23/22	11:35	1	BE522-208

Container Type and #	Preservative Type	HEAL No.
402 Sw	Ice	2208F02
		026025
		027026

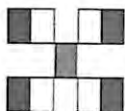
Date: 10/2/20	Time: 17:10	Relinquished by: 3. Reta
Date: 10/2/20	Time: 17:10	Relinquished by: 3. Reta

Date:	Time:	Relinquished by:
06/26/2010	06:10:00	ADMIN

received by:	Via:	Date	Time
<i>Alumini</i>		6/24/28	1030

Emc Center 8/26/22 1755

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



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

Remarks:

Direct B:1 to EOG Resources Inc.



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

September 08, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208I06

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 21 sample(s) on 8/31/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-21 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:25:00 AM

Lab ID: 2208106-001

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 1:44:43 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/3/2022 1:44:43 PM
Surr: DNOP	79.4	21-129		%Rec	1	9/3/2022 1:44:43 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/1/2022 11:23:12 PM
Surr: BFB	97.9	37.7-212		%Rec	1	9/1/2022 11:23:12 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	9/1/2022 11:23:12 PM
Toluene	ND	0.050		mg/Kg	1	9/1/2022 11:23:12 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/1/2022 11:23:12 PM
Xylenes, Total	ND	0.099		mg/Kg	1	9/1/2022 11:23:12 PM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	9/1/2022 11:23:12 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	470	60		mg/Kg	20	9/5/2022 1:17:59 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-31 4-6'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:40:00 AM

Lab ID: 2208106-002

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 1:55:26 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/3/2022 1:55:26 PM
Surr: DNOP	83.7	21-129		%Rec	1	9/3/2022 1:55:26 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/1/2022 11:46:38 PM
Surr: BFB	99.7	37.7-212		%Rec	1	9/1/2022 11:46:38 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	9/1/2022 11:46:38 PM
Toluene	ND	0.047		mg/Kg	1	9/1/2022 11:46:38 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/1/2022 11:46:38 PM
Xylenes, Total	ND	0.093		mg/Kg	1	9/1/2022 11:46:38 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	9/1/2022 11:46:38 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	200	60		mg/Kg	20	9/5/2022 1:55:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-32 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:45:00 AM

Lab ID: 2208106-003

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 2:06:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/3/2022 2:06:08 PM
Surr: DNOP	80.7	21-129		%Rec	1	9/3/2022 2:06:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/2/2022 12:10:05 AM
Surr: BFB	96.3	37.7-212		%Rec	1	9/2/2022 12:10:05 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 12:10:05 AM
Toluene	ND	0.048		mg/Kg	1	9/2/2022 12:10:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	9/2/2022 12:10:05 AM
Xylenes, Total	ND	0.096		mg/Kg	1	9/2/2022 12:10:05 AM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	9/2/2022 12:10:05 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	180	60		mg/Kg	20	9/5/2022 2:07:37 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-33 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:50:00 AM

Lab ID: 2208106-004

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/1/2022 7:47:57 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/1/2022 7:47:57 PM
Surr: DNOP	86.5	21-129		%Rec	1	9/1/2022 7:47:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	9/2/2022 12:33:32 AM
Surr: BFB	95.1	37.7-212		%Rec	1	9/2/2022 12:33:32 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	9/2/2022 12:33:32 AM
Toluene	ND	0.046		mg/Kg	1	9/2/2022 12:33:32 AM
Ethylbenzene	ND	0.046		mg/Kg	1	9/2/2022 12:33:32 AM
Xylenes, Total	ND	0.093		mg/Kg	1	9/2/2022 12:33:32 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	9/2/2022 12:33:32 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	250	60		mg/Kg	20	9/5/2022 2:20:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-34 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:55:00 AM

Lab ID: 2208106-005

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/1/2022 8:01:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/1/2022 8:01:40 PM
Surr: DNOP	94.7	21-129		%Rec	1	9/1/2022 8:01:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 12:57:05 AM
Surr: BFB	95.6	37.7-212		%Rec	1	9/2/2022 12:57:05 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 12:57:05 AM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 12:57:05 AM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 12:57:05 AM
Xylenes, Total	ND	0.098		mg/Kg	1	9/2/2022 12:57:05 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	9/2/2022 12:57:05 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	120	60		mg/Kg	20	9/5/2022 2:57:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-35 6-9'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:00:00 AM

Lab ID: 2208106-006

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/1/2022 8:15:24 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/1/2022 8:15:24 PM
Surr: DNOP	104	21-129		%Rec	1	9/1/2022 8:15:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 1:20:36 AM
Surr: BFB	96.9	37.7-212		%Rec	1	9/2/2022 1:20:36 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 1:20:36 AM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 1:20:36 AM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 1:20:36 AM
Xylenes, Total	ND	0.098		mg/Kg	1	9/2/2022 1:20:36 AM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	9/2/2022 1:20:36 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	80	60		mg/Kg	20	9/5/2022 3:09:40 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-36 4-6'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:05:00 AM

Lab ID: 2208106-007

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/1/2022 8:29:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/1/2022 8:29:12 PM
Surr: DNOP	94.9	21-129		%Rec	1	9/1/2022 8:29:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/2/2022 1:44:01 AM
Surr: BFB	99.6	37.7-212		%Rec	1	9/2/2022 1:44:01 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 1:44:01 AM
Toluene	ND	0.048		mg/Kg	1	9/2/2022 1:44:01 AM
Ethylbenzene	ND	0.048		mg/Kg	1	9/2/2022 1:44:01 AM
Xylenes, Total	ND	0.096		mg/Kg	1	9/2/2022 1:44:01 AM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	9/2/2022 1:44:01 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	120	60		mg/Kg	20	9/5/2022 3:22:05 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-37 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:10:00 AM

Lab ID: 2208106-008

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 5:23:04 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/3/2022 5:23:04 PM
Surr: DNOP	99.1	21-129		%Rec	1	9/3/2022 5:23:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 3:24:00 PM
Surr: BFB	94.8	37.7-212		%Rec	1	9/2/2022 3:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	9/2/2022 3:24:00 PM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 3:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 3:24:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	9/2/2022 3:24:00 PM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	9/2/2022 3:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	870	60		mg/Kg	20	9/6/2022 12:23:46 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-38 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:15:00 AM

Lab ID: 2208106-009

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 6:06:45 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/3/2022 6:06:45 PM
Surr: DNOP	99.5	21-129		%Rec	1	9/3/2022 6:06:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/2/2022 4:23:00 PM
Surr: BFB	98.7	37.7-212		%Rec	1	9/2/2022 4:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 4:23:00 PM
Toluene	ND	0.047		mg/Kg	1	9/2/2022 4:23:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/2/2022 4:23:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	9/2/2022 4:23:00 PM
Surr: 4-Bromofluorobenzene	90.5	70-130		%Rec	1	9/2/2022 4:23:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	390	60		mg/Kg	20	9/6/2022 1:25:49 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-39 6-7'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 10:20:00 AM

Lab ID: 2208106-010

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 6:21:07 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/3/2022 6:21:07 PM
Surr: DNOP	99.2	21-129		%Rec	1	9/3/2022 6:21:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/2/2022 5:23:00 PM
Surr: BFB	94.6	37.7-212		%Rec	1	9/2/2022 5:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	9/2/2022 5:23:00 PM
Toluene	ND	0.047		mg/Kg	1	9/2/2022 5:23:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/2/2022 5:23:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	9/2/2022 5:23:00 PM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	9/2/2022 5:23:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	130	59		mg/Kg	20	9/6/2022 1:38:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-209 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 8:45:00 AM

Lab ID: 2208106-011

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 6:35:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/3/2022 6:35:45 PM
Surr: DNOP	96.5	21-129		%Rec	1	9/3/2022 6:35:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/2/2022 5:43:00 PM
Surr: BFB	94.6	37.7-212		%Rec	1	9/2/2022 5:43:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 5:43:00 PM
Toluene	ND	0.048		mg/Kg	1	9/2/2022 5:43:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/2/2022 5:43:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	9/2/2022 5:43:00 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	9/2/2022 5:43:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	460	60		mg/Kg	20	9/6/2022 1:50:37 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-210 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 8:50:00 AM

Lab ID: 2208106-012

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 6:50:04 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/3/2022 6:50:04 PM
Surr: DNOP	103	21-129		%Rec	1	9/3/2022 6:50:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/2/2022 6:03:00 PM
Surr: BFB	93.4	37.7-212		%Rec	1	9/2/2022 6:03:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	9/2/2022 6:03:00 PM
Toluene	ND	0.050		mg/Kg	1	9/2/2022 6:03:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/2/2022 6:03:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/2/2022 6:03:00 PM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	9/2/2022 6:03:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	450	60		mg/Kg	20	9/6/2022 2:03:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-211 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 8:55:00 AM

Lab ID: 2208106-013

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 7:04:52 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/3/2022 7:04:52 PM
Surr: DNOP	96.6	21-129		%Rec	1	9/3/2022 7:04:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/2/2022 6:22:00 PM
Surr: BFB	92.3	37.7-212		%Rec	1	9/2/2022 6:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 6:22:00 PM
Toluene	ND	0.047		mg/Kg	1	9/2/2022 6:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/2/2022 6:22:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	9/2/2022 6:22:00 PM
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	9/2/2022 6:22:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	500	60		mg/Kg	20	9/6/2022 2:15:26 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-212 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:00:00 AM

Lab ID: 2208106-014

Matrix: SOIL

Received Date: 8/31/2022 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)	ND	14		mg/Kg	1	9/6/2022 11:32:25 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/6/2022 11:32:25 AM
Surr: DNOP	101	21-129		%Rec	1	9/6/2022 11:32:25 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/2/2022 6:42:00 PM
Surr: BFB	95.4	37.7-212		%Rec	1	9/2/2022 6:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	9/2/2022 6:42:00 PM
Toluene	ND	0.050		mg/Kg	1	9/2/2022 6:42:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/2/2022 6:42:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/2/2022 6:42:00 PM
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	9/2/2022 6:42:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	710	60		mg/Kg	20	9/6/2022 2:27:50 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-213 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:05:00 AM

Lab ID: 2208106-015

Matrix: SOIL

Received Date: 8/31/2022 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)	ND	15		mg/Kg	1	9/6/2022 11:43:01 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/6/2022 11:43:01 AM
Surr: DNOP	99.8	21-129		%Rec	1	9/6/2022 11:43:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 7:02:00 PM
Surr: BFB	94.0	37.7-212		%Rec	1	9/2/2022 7:02:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	9/2/2022 7:02:00 PM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 7:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 7:02:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	9/2/2022 7:02:00 PM
Surr: 4-Bromofluorobenzene	87.6	70-130		%Rec	1	9/2/2022 7:02:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	500	60		mg/Kg	20	9/6/2022 2:40:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-214 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:10:00 AM

Lab ID: 2208106-016

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 7:48:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/3/2022 7:48:31 PM
Surr: DNOP	102	21-129		%Rec	1	9/3/2022 7:48:31 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/2/2022 7:22:00 PM
Surr: BFB	91.5	37.7-212		%Rec	1	9/2/2022 7:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 7:22:00 PM
Toluene	ND	0.047		mg/Kg	1	9/2/2022 7:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/2/2022 7:22:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	9/2/2022 7:22:00 PM
Surr: 4-Bromofluorobenzene	87.0	70-130		%Rec	1	9/2/2022 7:22:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	470	60		mg/Kg	20	9/6/2022 2:52:39 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-215 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:15:00 AM

Lab ID: 2208106-017

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 8:02:58 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/3/2022 8:02:58 PM
Surr: DNOP	99.0	21-129		%Rec	1	9/3/2022 8:02:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/2/2022 7:41:00 PM
Surr: BFB	99.6	37.7-212		%Rec	1	9/2/2022 7:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 7:41:00 PM
Toluene	ND	0.048		mg/Kg	1	9/2/2022 7:41:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/2/2022 7:41:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	9/2/2022 7:41:00 PM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	9/2/2022 7:41:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	760	60		mg/Kg	20	9/6/2022 3:29:53 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-13 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:20:00 AM

Lab ID: 2208106-018

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 8:17:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/3/2022 8:17:20 PM
Surr: DNOP	96.8	21-129		%Rec	1	9/3/2022 8:17:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 8:21:00 PM
Surr: BFB	93.4	37.7-212		%Rec	1	9/2/2022 8:21:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 8:21:00 PM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 8:21:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 8:21:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	9/2/2022 8:21:00 PM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	1	9/2/2022 8:21:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	230	60		mg/Kg	20	9/6/2022 3:42:17 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-14 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:25:00 AM

Lab ID: 2208106-019

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 8:32:01 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/3/2022 8:32:01 PM
Surr: DNOP	96.1	21-129		%Rec	1	9/3/2022 8:32:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/2/2022 8:41:00 PM
Surr: BFB	93.2	37.7-212		%Rec	1	9/2/2022 8:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	9/2/2022 8:41:00 PM
Toluene	ND	0.050		mg/Kg	1	9/2/2022 8:41:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/2/2022 8:41:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/2/2022 8:41:00 PM
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	1	9/2/2022 8:41:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	360	60		mg/Kg	20	9/6/2022 3:54:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-15 4'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:30:00 AM

Lab ID: 2208106-020

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	9/3/2022 8:46:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/3/2022 8:46:28 PM
Surr: DNOP	110	21-129		%Rec	1	9/3/2022 8:46:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/2/2022 9:00:00 PM
Surr: BFB	97.8	37.7-212		%Rec	1	9/2/2022 9:00:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	9/2/2022 9:00:00 PM
Toluene	ND	0.049		mg/Kg	1	9/2/2022 9:00:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	9/2/2022 9:00:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	9/2/2022 9:00:00 PM
Surr: 4-Bromofluorobenzene	88.5	70-130		%Rec	1	9/2/2022 9:00:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	470	60		mg/Kg	20	9/6/2022 4:07:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208106

Date Reported: 9/8/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-37 6'

Project: Routh SWD Tank Battery

Collection Date: 8/29/2022 9:35:00 AM

Lab ID: 2208106-021

Matrix: SOIL

Received Date: 8/31/2022 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>mb</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	9/3/2022 9:00:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/3/2022 9:00:53 PM
Surr: DNOP	108	21-129		%Rec	1	9/3/2022 9:00:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	9/2/2022 9:20:00 PM
Surr: BFB	94.7	37.7-212		%Rec	1	9/2/2022 9:20:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	9/2/2022 9:20:00 PM
Toluene	ND	0.046		mg/Kg	1	9/2/2022 9:20:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	9/2/2022 9:20:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	9/2/2022 9:20:00 PM
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	9/2/2022 9:20:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	220	60		mg/Kg	20	9/6/2022 4:19:32 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69971</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69971</b>	RunNo: <b>90821</b>								
Prep Date: <b>9/6/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3247546</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-69971</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69971</b>	RunNo: <b>90821</b>								
Prep Date: <b>9/6/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3247547</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	93.5	90	110			

Sample ID: <b>MB-69962</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69962</b>	RunNo: <b>90825</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/4/2022</b>	SeqNo: <b>3247659</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-69962</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69962</b>	RunNo: <b>90825</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/4/2022</b>	SeqNo: <b>3247660</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	97.2	90	110			

**Qualifiers:**

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69901</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69901</b>	RunNo: <b>90793</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3245546</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		79.0	21	129			

Sample ID: <b>LCS-69901</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69901</b>	RunNo: <b>90793</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3245547</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	15	50.00	0	72.2	64.4	127			
Surr: DNOP	3.6		5.000		72.8	21	129			

Sample ID: <b>MB-69939</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69939</b>	RunNo: <b>90803</b>								
Prep Date: <b>9/2/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3246059</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.6	21	129			

Sample ID: <b>LCS-69939</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69939</b>	RunNo: <b>90803</b>								
Prep Date: <b>9/2/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3246060</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	93.7	64.4	127			
Surr: DNOP	5.0		5.000		99.2	21	129			

Sample ID: <b>2208I06-008AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WES22-37 6-7'</b>	Batch ID: <b>69939</b>	RunNo: <b>90803</b>								
Prep Date: <b>9/2/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3246062</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	14	45.91	0	84.4	36.1	154			
Surr: DNOP	4.7		4.591		103	21	129			

**Qualifiers:**

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208I06-008AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WES22-37 6-7'</b>	Batch ID: <b>69939</b>	RunNo: <b>90803</b>								
Prep Date: <b>9/2/2022</b>	Analysis Date: <b>9/3/2022</b>	SeqNo: <b>3246063</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	13	44.40	0	88.6	36.1	154	1.48	33.9	
Surr: DNOP	4.5		4.440		101	21	129	0	0	

Sample ID: <b>LCS-69963</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69963</b>	RunNo: <b>90816</b>								
Prep Date: <b>9/6/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246556</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.1		5.000		62.4	21	129			

Sample ID: <b>MB-69963</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69963</b>	RunNo: <b>90816</b>								
Prep Date: <b>9/6/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246558</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.7		10.00		77.0	21	129			

**Qualifiers:**

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69895</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69895</b>				RunNo: <b>90750</b>					
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/1/2022</b>				SeqNo: <b>3243910</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		99.6	37.7	212			

Sample ID: <b>lcs-69895</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69895</b>				RunNo: <b>90750</b>					
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/1/2022</b>				SeqNo: <b>3243911</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	72.3	137			
Surr: BFB	2100		1000		207	37.7	212			

Sample ID: <b>lcs-69920</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69920</b>				RunNo: <b>90773</b>					
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>				SeqNo: <b>3245746</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	96.4	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

Sample ID: <b>mb-69920</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69920</b>				RunNo: <b>90773</b>					
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>				SeqNo: <b>3245747</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		94.8	37.7	212			

Sample ID: <b>2208i06-008ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>WES22-37 6-7'</b>	Batch ID: <b>69920</b>				RunNo: <b>90773</b>					
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>				SeqNo: <b>3245749</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	4.9	24.44	0	106	70	130			
Surr: BFB	2200		977.5		223	37.7	212			S

Sample ID: <b>2208i06-008amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>WES22-37 6-7'</b>	Batch ID: <b>69920</b>				RunNo: <b>90773</b>					
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>				SeqNo: <b>3245750</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208i06-008amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WES22-37 6-7'</b>	Batch ID: <b>69920</b>	RunNo: <b>90773</b>								
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>	SeqNo: <b>3245750</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	24.34	0	104	70	130	2.41	20	
Surr: BFB	2200		973.7		222	37.7	212	0	0	S

Sample ID: <b>mb-69961</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69961</b>	RunNo: <b>90809</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246744</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		95.8	37.7	212			

Sample ID: <b>lcs-69961</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69961</b>	RunNo: <b>90809</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246836</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		197	37.7	212			

**Qualifiers:**

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

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

WO#: 2208106

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69895</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69895</b>	RunNo: <b>90750</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/1/2022</b>	SeqNo: <b>3243951</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	0.93		1.000		92.6	70	130			

Sample ID: <b>LCS-69895</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69895</b>	RunNo: <b>90750</b>								
Prep Date: <b>8/31/2022</b>	Analysis Date: <b>9/1/2022</b>	SeqNo: <b>3243952</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	83.2	80	120			
Toluene	0.86	0.050	1.000	0	85.8	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.8	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.7	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.2	70	130			

Sample ID: <b>mb-69920</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69920</b>	RunNo: <b>90773</b>								
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>	SeqNo: <b>3245776</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	0.91		1.000		90.5	70	130			

Sample ID: <b>2208106-009ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WES22-38 6-7'</b>	Batch ID: <b>69920</b>	RunNo: <b>90773</b>								
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>	SeqNo: <b>3245779</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	0.9785	0	84.9	68.8	120			
Toluene	0.86	0.049	0.9785	0	88.4	73.6	124			
Ethylbenzene	0.89	0.049	0.9785	0	90.8	72.7	129			
Xylenes, Total	2.6	0.098	2.935	0	90.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.91		0.9785		92.8	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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



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

WO#: 2208I06

08-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208i06-009amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WES22-38 6-7'</b>	Batch ID: <b>69920</b>	RunNo: <b>90773</b>								
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/2/2022</b>	SeqNo: <b>3245780</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.024	0.9690	0	81.6	68.8	120	4.99	20	
Toluene	0.82	0.048	0.9690	0	84.7	73.6	124	5.23	20	
Ethylbenzene	0.85	0.048	0.9690	0	87.5	72.7	129	4.63	20	
Xylenes, Total	2.5	0.097	2.907	0	87.2	75.7	126	4.39	20	
Surr: 4-Bromofluorobenzene	0.88		0.9690		90.7	70	130	0	0	

Sample ID: <b>lcs-69920</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69920</b>	RunNo: <b>90809</b>								
Prep Date: <b>9/1/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246792</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	80.9	80	120			
Toluene	0.84	0.050	1.000	0	84.3	80	120			
Ethylbenzene	0.84	0.050	1.000	0	84.4	80	120			
Xylenes, Total	2.5	0.10	3.000	0	83.2	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.1	70	130			

Sample ID: <b>mb-69961</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69961</b>	RunNo: <b>90809</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246793</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		90.5	70	130			

Sample ID: <b>LCS-69961</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69961</b>	RunNo: <b>90809</b>								
Prep Date: <b>9/4/2022</b>	Analysis Date: <b>9/6/2022</b>	SeqNo: <b>3246794</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.91		1.000		90.5	70	130			

**Qualifiers:**

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



## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2208106

RcptNo: 1

Received By: Juan Rojas

8/31/2022 7:40:00 AM

*Juan Rojas*

Completed By: Sean Livingston

8/31/2022 8:54:57 AM

*Sean Livingston*

Reviewed By:

*KRC*

*8.31.22*

Chain of Custody

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

Log In

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

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: *JR 8/31/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good				





## Chain-of-Custody Record

Client: Vertex (EOG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Project Manager:

Monica Peppin

Sampler:

SPCOn Ice: ☐ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 0.9-0.9 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
8/29	8:45	Soil	BES22-209	4' 403 jar	ice	011
	8:50		BES22-210			012
	8:55		BES22-211			013
	9:00		BES22-212			014
	9:05		BES22-213			015
	9:10		BES22-214			016
	9:15		BES22-215			017
	9:20		BES22-13			018
	9:25		BES22-14			019
	9:30		BES22-15			020
	9:35		BES22-37			021

Date: 8/29 17:05

Relinquished by: Sally Carter

Date: 8/29 1902

Relinquished by: Adm...

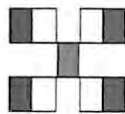
Turn-Around Time:

☒ Standard ☒ Rush 5 day

Project Name:

Routh SWD Tank Battery

Project #:

22E-00710-10HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

BTEX / MTBE / TMB's (8021)	<input checked="" type="checkbox"/>
TPH:8015D(GRO / DRO / MRO)	<input checked="" type="checkbox"/>
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> )	<input checked="" type="checkbox"/>
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Remarks:

page 2/2  
direct bill EOG

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-06 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 11:35:00 AM

Lab ID: 2208151-001

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 1:45:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 1:45:56 AM
Surr: DNOP	57.9	21-129		%Rec	1	8/6/2022 1:45:56 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 4:17:52 PM
Surr: BFB	103	37.7-212		%Rec	1	8/5/2022 4:17:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 4:17:52 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 4:17:52 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 4:17:52 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 4:17:52 PM
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	8/5/2022 4:17:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	450	60		mg/Kg	20	8/5/2022 3:20:43 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-07 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 11:40:00 AM

Lab ID: 2208151-002

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 1:59:31 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/6/2022 1:59:31 AM
Surr: DNOP	47.9	21-129		%Rec	1	8/6/2022 1:59:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 10:08:00 AM
Surr: BFB	89.9	37.7-212		%Rec	1	8/5/2022 10:08:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 10:08:00 AM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 10:08:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 10:08:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 10:08:00 AM
Surr: 4-Bromofluorobenzene	84.8	70-130		%Rec	1	8/5/2022 10:08:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	420	60		mg/Kg	20	8/5/2022 12:42:20 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-08 4'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 11:45:00 AM

Lab ID: 2208151-003

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 2:53:51 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 2:53:51 AM
Surr: DNOP	57.8	21-129		%Rec	1	8/6/2022 2:53:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 11:08:00 AM
Surr: BFB	89.2	37.7-212		%Rec	1	8/5/2022 11:08:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 11:08:00 AM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 11:08:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 11:08:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 11:08:00 AM
Surr: 4-Bromofluorobenzene	85.3	70-130		%Rec	1	8/5/2022 11:08:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	85	60		mg/Kg	20	8/5/2022 12:54:45 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-10 6'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 8:45:00 AM

Lab ID: 2208151-004

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 3:07:23 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/6/2022 3:07:23 AM
Surr: DNOP	60.1	21-129		%Rec	1	8/6/2022 3:07:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 12:07:00 PM
Surr: BFB	88.6	37.7-212		%Rec	1	8/5/2022 12:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 12:07:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 12:07:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 12:07:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 12:07:00 PM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	8/5/2022 12:07:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	130	60		mg/Kg	20	8/5/2022 1:31:58 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-12 6'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 8:50:00 AM

Lab ID: 2208151-005

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 3:21:00 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 3:21:00 AM
Surr: DNOP	50.4	21-129		%Rec	1	8/6/2022 3:21:00 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 12:27:00 PM
Surr: BFB	90.1	37.7-212		%Rec	1	8/5/2022 12:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 12:27:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 12:27:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 12:27:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/5/2022 12:27:00 PM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	8/5/2022 12:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	720	60		mg/Kg	20	8/5/2022 1:44:22 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-16 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:15:00 AM

Lab ID: 2208151-006

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 3:34:36 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/6/2022 3:34:36 AM
Surr: DNOP	48.9	21-129		%Rec	1	8/6/2022 3:34:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 12:46:00 PM
Surr: BFB	90.6	37.7-212		%Rec	1	8/5/2022 12:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 12:46:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 12:46:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 12:46:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/5/2022 12:46:00 PM
Surr: 4-Bromofluorobenzene	84.7	70-130		%Rec	1	8/5/2022 12:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	160	60		mg/Kg	20	8/5/2022 1:56:47 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-17 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:20:00 AM

Lab ID: 2208151-007

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 3:48:10 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/6/2022 3:48:10 AM
Surr: DNOP	55.5	21-129		%Rec	1	8/6/2022 3:48:10 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 1:06:00 PM
Surr: BFB	96.0	37.7-212		%Rec	1	8/5/2022 1:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 1:06:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 1:06:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 1:06:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 1:06:00 PM
Surr: 4-Bromofluorobenzene	87.3	70-130		%Rec	1	8/5/2022 1:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	160	61		mg/Kg	20	8/5/2022 2:09:11 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-35 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:25:00 AM

Lab ID: 2208151-008

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 4:01:44 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 4:01:44 AM
Surr: DNOP	52.0	21-129		%Rec	1	8/6/2022 4:01:44 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 1:26:00 PM
Surr: BFB	93.8	37.7-212		%Rec	1	8/5/2022 1:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 1:26:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 1:26:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 1:26:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 1:26:00 PM
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	8/5/2022 1:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	170	60		mg/Kg	20	8/5/2022 3:11:14 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-36 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:30:00 AM

Lab ID: 2208151-009

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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)	35	15		mg/Kg	1	8/6/2022 4:15:15 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 4:15:15 AM
Surr: DNOP	65.9	21-129		%Rec	1	8/6/2022 4:15:15 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 1:46:00 PM
Surr: BFB	89.0	37.7-212		%Rec	1	8/5/2022 1:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 1:46:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 1:46:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 1:46:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 1:46:00 PM
Surr: 4-Bromofluorobenzene	84.5	70-130		%Rec	1	8/5/2022 1:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	330	60		mg/Kg	20	8/5/2022 3:23:39 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-39 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:35:00 AM

Lab ID: 2208151-010

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 4:28:48 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/6/2022 4:28:48 AM
Surr: DNOP	48.5	21-129		%Rec	1	8/6/2022 4:28:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/5/2022 2:06:00 PM
Surr: BFB	89.6	37.7-212		%Rec	1	8/5/2022 2:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 2:06:00 PM
Toluene	ND	0.048		mg/Kg	1	8/5/2022 2:06:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/5/2022 2:06:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/5/2022 2:06:00 PM
Surr: 4-Bromofluorobenzene	84.0	70-130		%Rec	1	8/5/2022 2:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	320	59		mg/Kg	20	8/5/2022 3:36:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-46 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 11:30:00 AM

Lab ID: 2208151-011

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 4:42:18 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 4:42:18 AM
Surr: DNOP	58.2	21-129		%Rec	1	8/6/2022 4:42:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 2:26:00 PM
Surr: BFB	87.9	37.7-212		%Rec	1	8/5/2022 2:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 2:26:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 2:26:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 2:26:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 2:26:00 PM
Surr: 4-Bromofluorobenzene	82.3	70-130		%Rec	1	8/5/2022 2:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	210	60		mg/Kg	20	8/5/2022 3:48:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-47 7'

Project: Routh SWD Tank Battery

Collection Date: 7/29/2022 9:40:00 AM

Lab ID: 2208151-012

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 4:55:51 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 4:55:51 AM
Surr: DNOP	60.8	21-129		%Rec	1	8/6/2022 4:55:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 3:05:00 PM
Surr: BFB	85.8	37.7-212		%Rec	1	8/5/2022 3:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 3:05:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 3:05:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 3:05:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 3:05:00 PM
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	8/5/2022 3:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	390	59		mg/Kg	20	8/5/2022 4:00:51 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-01 6-10'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 11:30:00 AM

Lab ID: 2208151-013

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 5:09:25 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 5:09:25 AM
Surr: DNOP	61.5	21-129		%Rec	1	8/6/2022 5:09:25 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 3:25:00 PM
Surr: BFB	83.8	37.7-212		%Rec	1	8/5/2022 3:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 3:25:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 3:25:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 3:25:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 3:25:00 PM
Surr: 4-Bromofluorobenzene	79.3	70-130		%Rec	1	8/5/2022 3:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	150	60		mg/Kg	20	8/5/2022 4:13:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-61 6'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 11:40:00 AM

Lab ID: 2208151-014

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 5:22:55 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 5:22:55 AM
Surr: DNOP	47.9	21-129		%Rec	1	8/6/2022 5:22:55 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 3:45:00 PM
Surr: BFB	87.8	37.7-212		%Rec	1	8/5/2022 3:45:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 3:45:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 3:45:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 3:45:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 3:45:00 PM
Surr: 4-Bromofluorobenzene	82.3	70-130		%Rec	1	8/5/2022 3:45:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	480	60		mg/Kg	20	8/5/2022 4:25:39 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-62 6'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 11:50:00 AM

Lab ID: 2208151-015

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 5:36:22 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/6/2022 5:36:22 AM
Surr: DNOP	43.1	21-129		%Rec	1	8/6/2022 5:36:22 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 4:05:00 PM
Surr: BFB	85.9	37.7-212		%Rec	1	8/5/2022 4:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 4:05:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 4:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 4:05:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 4:05:00 PM
Surr: 4-Bromofluorobenzene	81.0	70-130		%Rec	1	8/5/2022 4:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	420	60		mg/Kg	20	8/5/2022 4:38:04 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-63 6'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 12:00:00 PM

Lab ID: 2208151-016

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 5:49:57 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/6/2022 5:49:57 AM
Surr: DNOP	67.3	21-129		%Rec	1	8/6/2022 5:49:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 4:24:00 PM
Surr: BFB	88.5	37.7-212		%Rec	1	8/5/2022 4:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/5/2022 4:24:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 4:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 4:24:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 4:24:00 PM
Surr: 4-Bromofluorobenzene	81.9	70-130		%Rec	1	8/5/2022 4:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	110	60		mg/Kg	20	8/5/2022 5:15:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-66 7'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 12:45:00 PM

Lab ID: 2208151-017

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 6:03:30 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 6:03:30 AM
Surr: DNOP	49.6	21-129		%Rec	1	8/6/2022 6:03:30 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 4:44:00 PM
Surr: BFB	85.4	37.7-212		%Rec	1	8/5/2022 4:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 4:44:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 4:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 4:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 4:44:00 PM
Surr: 4-Bromofluorobenzene	80.2	70-130		%Rec	1	8/5/2022 4:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	340	60		mg/Kg	20	8/5/2022 5:27:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-67 5'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 12:50:00 PM

Lab ID: 2208151-018

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 6:17:01 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/6/2022 6:17:01 AM
Surr: DNOP	63.7	21-129		%Rec	1	8/6/2022 6:17:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 5:04:00 PM
Surr: BFB	85.8	37.7-212		%Rec	1	8/5/2022 5:04:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 5:04:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 5:04:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 5:04:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 5:04:00 PM
Surr: 4-Bromofluorobenzene	80.8	70-130		%Rec	1	8/5/2022 5:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	250	60		mg/Kg	20	8/5/2022 5:40:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-68 5'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 12:55:00 PM

Lab ID: 2208151-019

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	14		mg/Kg	1	8/6/2022 6:30:33 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/6/2022 6:30:33 AM
Surr: DNOP	34.9	21-129		%Rec	1	8/6/2022 6:30:33 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 5:24:00 PM
Surr: BFB	135	37.7-212		%Rec	1	8/5/2022 5:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 5:24:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 5:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 5:24:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 5:24:00 PM
Surr: 4-Bromofluorobenzene	126	70-130		%Rec	1	8/5/2022 5:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	140	60		mg/Kg	20	8/5/2022 5:52:31 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-69 5'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 1:00:00 PM

Lab ID: 2208151-020

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 6:44:18 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/6/2022 6:44:18 AM
Surr: DNOP	50.8	21-129		%Rec	1	8/6/2022 6:44:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/5/2022 5:44:00 PM
Surr: BFB	89.1	37.7-212		%Rec	1	8/5/2022 5:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 5:44:00 PM
Toluene	ND	0.049		mg/Kg	1	8/5/2022 5:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/5/2022 5:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/5/2022 5:44:00 PM
Surr: 4-Bromofluorobenzene	80.9	70-130		%Rec	1	8/5/2022 5:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	96	60		mg/Kg	20	8/5/2022 6:04:55 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-70 5'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 1:05:00 PM

Lab ID: 2208151-021

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/6/2022 6:57:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/6/2022 6:57:54 AM
Surr: DNOP	50.1	21-129		%Rec	1	8/6/2022 6:57:54 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 6:04:00 PM
Surr: BFB	83.3	37.7-212		%Rec	1	8/5/2022 6:04:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 6:04:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 6:04:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 6:04:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/5/2022 6:04:00 PM
Surr: 4-Bromofluorobenzene	78.1	70-130		%Rec	1	8/5/2022 6:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	380	60		mg/Kg	20	8/5/2022 6:17:19 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208151

Date Reported: 8/11/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-71 5'

Project: Routh SWD Tank Battery

Collection Date: 8/1/2022 1:10:00 PM

Lab ID: 2208151-022

Matrix: SOIL

Received Date: 8/3/2022 7:15:00 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	15		mg/Kg	1	8/5/2022 3:53:18 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/5/2022 3:53:18 PM
Surr: DNOP	51.7	21-129		%Rec	1	8/5/2022 3:53:18 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/5/2022 8:03:00 PM
Surr: BFB	89.2	37.7-212		%Rec	1	8/5/2022 8:03:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/5/2022 8:03:00 PM
Toluene	ND	0.050		mg/Kg	1	8/5/2022 8:03:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/5/2022 8:03:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/5/2022 8:03:00 PM
Surr: 4-Bromofluorobenzene	82.0	70-130		%Rec	1	8/5/2022 8:03:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	410	60		mg/Kg	20	8/5/2022 6:54:31 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69284</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69284</b>	RunNo: <b>90078</b>								
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211136</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-69284</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69284</b>	RunNo: <b>90078</b>								
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211137</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			

Sample ID: <b>MB-69302</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69302</b>	RunNo: <b>90078</b>								
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211166</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-69302</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69302</b>	RunNo: <b>90078</b>								
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211167</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-69275</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69275</b>	RunNo: <b>90079</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211203</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-69275</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69275</b>	RunNo: <b>90079</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3211204</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	97.6	90	110			

**Qualifiers:**

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

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69267</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69267</b>	RunNo: <b>90075</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210945</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.2		10.00		71.9	21	129			

Sample ID: <b>LCS-69267</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69267</b>	RunNo: <b>90075</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210946</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	15	50.00	0	84.8	64.4	127			
Surr: DNOP	3.0		5.000		59.9	21	129			

Sample ID: <b>2208151-022AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-71 5'</b>	Batch ID: <b>69267</b>	RunNo: <b>90075</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210948</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	34	15	49.75	0	67.5	36.1	154			
Surr: DNOP	2.0		4.975		39.9	21	129			

Sample ID: <b>2208151-022AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-71 5'</b>	Batch ID: <b>69267</b>	RunNo: <b>90075</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210949</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	33	15	48.97	0	68.3	36.1	154	0.504	33.9	
Surr: DNOP	1.6		4.897		33.6	21	129	0	0	

Sample ID: <b>MB-69253</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69253</b>	RunNo: <b>90075</b>								
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210967</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	2.9		10.00		29.2	21	129			

**Qualifiers:**

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

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69253</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69253</b>		RunNo: <b>90075</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210968</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	15	50.00	0	77.2	64.4	127			
Surr: DNOP	1.2		5.000		23.7	21	129			

Sample ID: <b>MB-69261</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69261</b>		RunNo: <b>90075</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210988</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	5.9		10.00		59.0	21	129			

Sample ID: <b>LCS-69261</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69261</b>		RunNo: <b>90075</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210989</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	15	50.00	0	82.2	64.4	127			
Surr: DNOP	2.4		5.000		47.3	21	129			

Sample ID: <b>2208151-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-07 7'</b>	Batch ID: <b>69261</b>		RunNo: <b>90075</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210993</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	31	14	47.98	0	64.5	36.1	154			
Surr: DNOP	2.0		4.798		41.1	21	129			

Sample ID: <b>2208151-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-07 7'</b>	Batch ID: <b>69261</b>		RunNo: <b>90075</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210994</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	14	46.95	0	87.4	36.1	154	28.1	33.9	
Surr: DNOP	2.4		4.695		51.9	21	129	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 range due to dilution or matrix interference

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

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69239</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69239</b>			RunNo: <b>90015</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/4/2022</b>			SeqNo: <b>3208389</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	37.7	212			

Sample ID: <b>lcs-69239</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69239</b>			RunNo: <b>90015</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/4/2022</b>			SeqNo: <b>3208390</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	72.3	137			
Surr: BFB	2100		1000		207	37.7	212			

Sample ID: <b>lcs-69242</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69242</b>			RunNo: <b>90064</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>			SeqNo: <b>3209975</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	104	72.3	137			
Surr: BFB	2000		1000		200	37.7	212			

Sample ID: <b>mb-69242</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69242</b>			RunNo: <b>90064</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>			SeqNo: <b>3209976</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		92.3	37.7	212			

Sample ID: <b>2208151-002ams</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-07 7'</b>	Batch ID: <b>69242</b>			RunNo: <b>90064</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>			SeqNo: <b>3209978</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	24.95	0	100	70	130			
Surr: BFB	2000		998.0		200	37.7	212			

Sample ID: <b>2208151-002amsd</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-07 7'</b>	Batch ID: <b>69242</b>			RunNo: <b>90064</b>						
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>			SeqNo: <b>3209979</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208151-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-07 7'</b>	Batch ID: <b>69242</b>	RunNo: <b>90064</b>								
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3209979</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	4.9	24.30	0	106	70	130	3.58	20	
Surr: BFB	2000		971.8		204	37.7	212	0	0	

Sample ID: <b>lcs-69246</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69246</b>	RunNo: <b>90064</b>								
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3209999</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	96.4	72.3	137			
Surr: BFB	1900		1000		191	37.7	212			

Sample ID: <b>mb-69246</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69246</b>	RunNo: <b>90064</b>								
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210000</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	810		1000		80.5	37.7	212			

Sample ID: <b>2208151-022ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-71 5'</b>	Batch ID: <b>69246</b>	RunNo: <b>90064</b>								
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210002</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	4.9	24.61	0	95.4	70	130			
Surr: BFB	1900		984.3		196	37.7	212			

Sample ID: <b>2208151-022amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BES22-71 5'</b>	Batch ID: <b>69246</b>	RunNo: <b>90064</b>								
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>	SeqNo: <b>3210003</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	4.9	24.61	0	104	70	130	8.74	20	
Surr: BFB	2000		984.3		208	37.7	212	0	0	

**Qualifiers:**

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

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69239</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69239</b>		RunNo: <b>90015</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/4/2022</b>		SeqNo: <b>3208419</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	70	130			

Sample ID: <b>LCS-69239</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69239</b>		RunNo: <b>90015</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/4/2022</b>		SeqNo: <b>3208420</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	96.3	80	120			
Toluene	0.99	0.050	1.000	0	99.3	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.6	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: <b>lcs-69242</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69242</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210028</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	89.9	80	120			
Toluene	0.91	0.050	1.000	0	90.5	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.1	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.6	80	120			
Surr: 4-Bromofluorobenzene	0.85		1.000		84.8	70	130			

Sample ID: <b>mb-69242</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69242</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210029</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	0.87		1.000		86.7	70	130			

**Qualifiers:**

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

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

WO#: 2208151

11-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208151-003ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BES22-08 4'</b>	Batch ID: <b>69242</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210032</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	0.9852	0	86.1	68.8	120			
Toluene	0.86	0.049	0.9852	0	87.4	73.6	124			
Ethylbenzene	0.86	0.049	0.9852	0	87.5	72.7	129			
Xylenes, Total	2.5	0.099	2.956	0	86.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.82		0.9852		83.3	70	130			

Sample ID: <b>2208151-003amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BES22-08 4'</b>	Batch ID: <b>69242</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210033</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	0.9881	0	89.0	68.8	120	3.65	20	
Toluene	0.90	0.049	0.9881	0	90.8	73.6	124	4.10	20	
Ethylbenzene	0.90	0.049	0.9881	0	91.6	72.7	129	4.82	20	
Xylenes, Total	2.7	0.099	2.964	0	91.0	75.7	126	5.72	20	
Surr: 4-Bromofluorobenzene	0.85		0.9881		86.1	70	130	0	0	

Sample ID: <b>lcs-69246</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69246</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210052</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	87.1	80	120			
Toluene	0.88	0.050	1.000	0	88.0	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.3	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.8	80	120			
Surr: 4-Bromofluorobenzene	0.79		1.000		78.6	70	130			

Sample ID: <b>mb-69246</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69246</b>		RunNo: <b>90064</b>							
Prep Date: <b>8/3/2022</b>	Analysis Date: <b>8/5/2022</b>		SeqNo: <b>3210053</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	0.77		1.000		77.2	70	130			

**Qualifiers:**

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



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: 2208151

RcptNo: 1

Received By: Juan Rojas

8/3/2022 7:15:00 AM

*Juan Rojas*

Completed By: Sean Livingston

8/3/2022 8:27:37 AM

*Sean Livingston*

Reviewed By: *CME*

*8/3/22*

Chain of Custody

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

Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? ☐

Checked by: *KPC 8.02.22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good				
2	2.1	Good				



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

Chain-of-Custody Record									
Client: <u>Vertex (EOG)</u>		Turn-Around Time: <input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>5 Day</u>		Project Name: <u>Routh S&amp;W Tank Battery</u>					
Mailing Address: <u>on file</u>		Project #: <u>22E-00710-10</u>		Project Manager: <u>Monica Peppin</u>					
Phone #: _____		Sampler: <u>SPC</u>		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
email or Fax#: _____		# of Coolers: <u>2</u>		Cooler Temp (including CF): <u>5.9-0-5.9</u> (°C)					
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other _____		Container Type and #		Preservative Type		HEAL No.	
<input type="checkbox"/> EDD (Type) _____									
Date	Time	Matrix	Sample Name	Container Type and #		Preservative Type		HEAL No.	
7/29	11:35	Soil	BES22-06 7'	14oz jar		ice		21-0-2.1 2208151	
	11:40		BES22-07 7'					001	
	11:45		BES22-08 4'					002	
	8:45		BES22-10 6'					003	
	8:50		BES22-12 6'					004	
	9:15		BES22-16 7'					005	
	9:20		BES22-17 7'					006	
	9:25		BES22-35 7'					007	
	9:30		BES22-36 7'					008	
	9:35		BES22-39 7'					009	
	11:30		BES22-46 7'					010	
	9:40		BES22-47 7'					011	
Date:	Time:	Relinquished by:	Received by:		Via:	Date:	Time		
7/29	1420	<u>Swain Carter</u>	<u>Monica</u>			8/12	1100		
Date:	Time:	Relinquished by:	Received by:		Via:	Date:	Time		
8/12	1900	<u>Monica</u>	<u>Monica</u>			8/12	7110		

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



## Chain-of-Custody Record

Client: Vertex (EOG)Mailing Address: on file

Phone #:

Email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush 5 Day

Project Name:

Routh SWD Tank Battery

Project #:

22E-00716-10

Project Manager:

Monica Peppin

Sampler:

Sally CarttarOn Ice: ☒ Yes ☐ No# of Coolers: 2Cooler Temp (including CF): 5.9-0-5.9 (°C)

Container Type and #

Preservative Type

HEAL No.

2.1-0-2.1

140g jar ice

013

014

015

016

017

018

019

020

021

022

Date

Time

Matrix

Sample Name

8/1 11:30 Soil WES22-D1 6-10'

11:40 BES22-61 6'

11:50 BES22-62 6'

12:00 BES22-63 6'

12:45 BES22-66 7'

12:50 BES22-67 5'

12:55 BES22-68 5'

13:00 BES22-69 5'

13:05 BES22-70 5'

13:10 BES22-71 5'

Date:

Time:

Relinquished by:

Sally Carttar

Date:

Time:

Relinquished by:

Monica Peppin

Received by:

Via:

Date

Time

Remarks:

08/12/22 1100

Received by:

Via:

Date

Time

Remarks:

08/12/22 7:15

## Analysis Request

BTEX / MTBE / TMB's (8021)

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

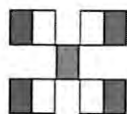
RCRA 8 Metals

Cl, F, Br, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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





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

August 15, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208249

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/4/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-64 7'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 8:45:00 AM

Lab ID: 2208249-001

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	15		mg/Kg	1	8/8/2022 4:25:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/8/2022 4:25:37 PM
Surr: DNOP	108	21-129		%Rec	1	8/8/2022 4:25:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/6/2022 12:26:46 PM
Surr: BFB	103	37.7-212		%Rec	1	8/6/2022 12:26:46 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/6/2022 12:26:46 PM
Toluene	ND	0.048		mg/Kg	1	8/6/2022 12:26:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/6/2022 12:26:46 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/6/2022 12:26:46 PM
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	8/6/2022 12:26:46 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	240	60		mg/Kg	20	8/8/2022 3:49:49 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-65 7'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 8:50:00 AM

Lab ID: 2208249-002

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	15		mg/Kg	1	8/8/2022 4:39:15 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/8/2022 4:39:15 PM
Surr: DNOP	103	21-129		%Rec	1	8/8/2022 4:39:15 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/6/2022 12:50:23 PM
Surr: BFB	103	37.7-212		%Rec	1	8/6/2022 12:50:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/6/2022 12:50:23 PM
Toluene	ND	0.046		mg/Kg	1	8/6/2022 12:50:23 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/6/2022 12:50:23 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/6/2022 12:50:23 PM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	8/6/2022 12:50:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	230	60		mg/Kg	20	8/8/2022 8:34:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-72 6'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 9:00:00 AM

Lab ID: 2208249-003

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	15		mg/Kg	1	8/8/2022 4:53:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/8/2022 4:53:20 PM
Surr: DNOP	98.3	21-129		%Rec	1	8/8/2022 4:53:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/6/2022 1:13:58 PM
Surr: BFB	103	37.7-212		%Rec	1	8/6/2022 1:13:58 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/6/2022 1:13:58 PM
Toluene	ND	0.049		mg/Kg	1	8/6/2022 1:13:58 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/6/2022 1:13:58 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/6/2022 1:13:58 PM
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	8/6/2022 1:13:58 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/8/2022 8:46:35 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-81 7'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 9:45:00 AM

Lab ID: 2208249-004

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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)	57	14		mg/Kg	1	8/8/2022 5:07:12 PM
Motor Oil Range Organics (MRO)	83	48		mg/Kg	1	8/8/2022 5:07:12 PM
Surr: DNOP	94.8	21-129		%Rec	1	8/8/2022 5:07:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/6/2022 1:37:33 PM
Surr: BFB	101	37.7-212		%Rec	1	8/6/2022 1:37:33 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/6/2022 1:37:33 PM
Toluene	ND	0.046		mg/Kg	1	8/6/2022 1:37:33 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/6/2022 1:37:33 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/6/2022 1:37:33 PM
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	8/6/2022 1:37:33 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	520	60		mg/Kg	20	8/8/2022 8:58:56 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-82 7'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 9:50:00 AM

Lab ID: 2208249-005

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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)	31	14		mg/Kg	1	8/8/2022 5:20:58 PM
Motor Oil Range Organics (MRO)	69	46		mg/Kg	1	8/8/2022 5:20:58 PM
Surr: DNOP	90.4	21-129		%Rec	1	8/8/2022 5:20:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/6/2022 2:01:11 PM
Surr: BFB	100	37.7-212		%Rec	1	8/6/2022 2:01:11 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/6/2022 2:01:11 PM
Toluene	ND	0.047		mg/Kg	1	8/6/2022 2:01:11 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/6/2022 2:01:11 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/6/2022 2:01:11 PM
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	8/6/2022 2:01:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	530	60		mg/Kg	20	8/8/2022 9:11:17 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-86 4'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 1:30:00 PM

Lab ID: 2208249-006

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	14		mg/Kg	1	8/8/2022 5:34:45 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/8/2022 5:34:45 PM
Surr: DNOP	100	21-129		%Rec	1	8/8/2022 5:34:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/6/2022 2:24:43 PM
Surr: BFB	100	37.7-212		%Rec	1	8/6/2022 2:24:43 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/6/2022 2:24:43 PM
Toluene	ND	0.049		mg/Kg	1	8/6/2022 2:24:43 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/6/2022 2:24:43 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/6/2022 2:24:43 PM
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	8/6/2022 2:24:43 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	150	60		mg/Kg	20	8/8/2022 10:37:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-87 4'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 1:35:00 PM

Lab ID: 2208249-007

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	15		mg/Kg	1	8/8/2022 5:48:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/8/2022 5:48:50 PM
Surr: DNOP	103	21-129		%Rec	1	8/8/2022 5:48:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/6/2022 2:48:18 PM
Surr: BFB	103	37.7-212		%Rec	1	8/6/2022 2:48:18 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/6/2022 2:48:18 PM
Toluene	ND	0.050		mg/Kg	1	8/6/2022 2:48:18 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/6/2022 2:48:18 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/6/2022 2:48:18 PM
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	8/6/2022 2:48:18 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	350	60		mg/Kg	20	8/8/2022 11:14:44 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208249

Date Reported: 8/15/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-88 4'

Project: Routh SWD Tank Battery

Collection Date: 8/2/2022 1:40:00 PM

Lab ID: 2208249-008

Matrix: SOIL

Received Date: 8/4/2022 7:04:00 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	14		mg/Kg	1	8/8/2022 6:02:47 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/8/2022 6:02:47 PM
Surr: DNOP	81.3	21-129		%Rec	1	8/8/2022 6:02:47 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/6/2022 3:11:55 PM
Surr: BFB	103	37.7-212		%Rec	1	8/6/2022 3:11:55 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/6/2022 3:11:55 PM
Toluene	ND	0.047		mg/Kg	1	8/6/2022 3:11:55 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/6/2022 3:11:55 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/6/2022 3:11:55 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/6/2022 3:11:55 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	300	60		mg/Kg	20	8/8/2022 11:27:06 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208249

15-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69320</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69320</b>		RunNo: <b>90106</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212279</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-69320</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69320</b>		RunNo: <b>90106</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212280</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	97.0	90	110			

Sample ID: <b>MB-69336</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69336</b>		RunNo: <b>90106</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212323</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-69336</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69336</b>		RunNo: <b>90106</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212324</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	98.7	90	110			

Sample ID: <b>MB-69313</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69313</b>		RunNo: <b>90109</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212358</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-69313</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69313</b>		RunNo: <b>90109</b>							
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212359</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	92.9	90	110			

**Qualifiers:**

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

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

WO#: 2208249

15-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69285</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69285</b>		RunNo: <b>90121</b>							
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212781</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.1	21	129			

Sample ID: <b>LCS-69285</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69285</b>		RunNo: <b>90121</b>							
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>		SeqNo: <b>3212782</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	15	50.00	0	82.2	64.4	127			
Surr: DNOP	4.7		5.000		93.1	21	129			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208249

15-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-69269</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69269</b>		RunNo: <b>90070</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210415</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	101	72.3	137			
Surr: BFB	2000		1000		200	37.7	212			

Sample ID: <b>mb-69269</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69269</b>		RunNo: <b>90070</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210417</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	37.7	212			

**Qualifiers:**

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

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

WO#: 2208249

15-Aug-22

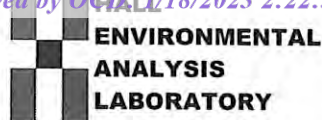
**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69269</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69269</b>		RunNo: <b>90070</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210465</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	96.0	80	120			
Toluene	0.99	0.050	1.000	0	99.1	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.6	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.6	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>mb-69269</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69269</b>		RunNo: <b>90070</b>							
Prep Date: <b>8/4/2022</b>	Analysis Date: <b>8/6/2022</b>		SeqNo: <b>3210467</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	0.99		1.000		99.1	70	130			

**Qualifiers:**

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



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: 2208249

RcptNo: 1

Received By: Juan Rojas 8/4/2022 7:04:00 AM

Completed By: Sean Livingston 8/4/2022 8:26:14 AM

Reviewed By: KRM 8.04.22

*[Signature]*

*[Signature]*

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: *gns/4/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good				
2	0.5	Good				

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

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





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

August 16, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208347

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/5/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-89 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:00:00 AM

Lab ID: 2208347-001

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 4:22:11 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/10/2022 4:22:11 AM
Surr: DNOP	59.7	21-129		%Rec	1	8/10/2022 4:22:11 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2022 1:33:00 AM
Surr: BFB	92.1	37.7-212		%Rec	1	8/9/2022 1:33:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/9/2022 1:33:00 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2022 1:33:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2022 1:33:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/9/2022 1:33:00 AM
Surr: 4-Bromofluorobenzene	81.7	70-130		%Rec	1	8/9/2022 1:33:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	280	61		mg/Kg	20	8/10/2022 10:04:59 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-90 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:05:00 AM

Lab ID: 2208347-002

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	13		mg/Kg	1	8/10/2022 4:37:27 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/10/2022 4:37:27 AM
Surr: DNOP	47.7	21-129		%Rec	1	8/10/2022 4:37:27 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/9/2022 1:53:00 AM
Surr: BFB	86.2	37.7-212		%Rec	1	8/9/2022 1:53:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/9/2022 1:53:00 AM
Toluene	ND	0.050		mg/Kg	1	8/9/2022 1:53:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/9/2022 1:53:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	8/9/2022 1:53:00 AM
Surr: 4-Bromofluorobenzene	78.9	70-130		%Rec	1	8/9/2022 1:53:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	280	60		mg/Kg	20	8/10/2022 11:06:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-91 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:10:00 AM

Lab ID: 2208347-003

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 4:52:22 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/10/2022 4:52:22 AM
Surr: DNOP	50.9	21-129		%Rec	1	8/10/2022 4:52:22 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2022 2:12:00 AM
Surr: BFB	83.6	37.7-212		%Rec	1	8/9/2022 2:12:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 2:12:00 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2022 2:12:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2022 2:12:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2022 2:12:00 AM
Surr: 4-Bromofluorobenzene	77.1	70-130		%Rec	1	8/9/2022 2:12:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	390	60		mg/Kg	20	8/10/2022 11:19:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-92 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:15:00 AM

Lab ID: 2208347-004

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	14		mg/Kg	1	8/10/2022 5:07:02 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/10/2022 5:07:02 AM
Surr: DNOP	64.6	21-129		%Rec	1	8/10/2022 5:07:02 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2022 2:32:00 AM
Surr: BFB	84.1	37.7-212		%Rec	1	8/9/2022 2:32:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 2:32:00 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2022 2:32:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2022 2:32:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2022 2:32:00 AM
Surr: 4-Bromofluorobenzene	76.8	70-130		%Rec	1	8/9/2022 2:32:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	330	60		mg/Kg	20	8/10/2022 11:31:23 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-93 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:20:00 AM

Lab ID: 2208347-005

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 5:21:45 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/10/2022 5:21:45 AM
Surr: DNOP	56.7	21-129		%Rec	1	8/10/2022 5:21:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2022 2:52:00 AM
Surr: BFB	88.7	37.7-212		%Rec	1	8/9/2022 2:52:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/9/2022 2:52:00 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2022 2:52:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2022 2:52:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/9/2022 2:52:00 AM
Surr: 4-Bromofluorobenzene	81.4	70-130		%Rec	1	8/9/2022 2:52:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	75	60		mg/Kg	20	8/11/2022 11:50:20 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-94 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:25:00 AM

Lab ID: 2208347-006

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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)	25	14		mg/Kg	1	8/10/2022 5:36:19 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/10/2022 5:36:19 AM
Surr: DNOP	51.2	21-129		%Rec	1	8/10/2022 5:36:19 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2022 3:11:00 AM
Surr: BFB	88.0	37.7-212		%Rec	1	8/9/2022 3:11:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 3:11:00 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2022 3:11:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2022 3:11:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/9/2022 3:11:00 AM
Surr: 4-Bromofluorobenzene	81.5	70-130		%Rec	1	8/9/2022 3:11:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	92	60		mg/Kg	20	8/11/2022 12:52:04 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-95 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:30:00 AM

Lab ID: 2208347-007

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 5:51:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/10/2022 5:51:07 AM
Surr: DNOP	55.1	21-129		%Rec	1	8/10/2022 5:51:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2022 3:31:00 AM
Surr: BFB	91.4	37.7-212		%Rec	1	8/9/2022 3:31:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 3:31:00 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2022 3:31:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2022 3:31:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/9/2022 3:31:00 AM
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	8/9/2022 3:31:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	70	60		mg/Kg	20	8/11/2022 1:04:26 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-96 4'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:35:00 AM

Lab ID: 2208347-008

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 6:05:39 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/10/2022 6:05:39 AM
Surr: DNOP	57.4	21-129		%Rec	1	8/10/2022 6:05:39 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2022 3:51:00 AM
Surr: BFB	88.0	37.7-212		%Rec	1	8/9/2022 3:51:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 3:51:00 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2022 3:51:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2022 3:51:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/9/2022 3:51:00 AM
Surr: 4-Bromofluorobenzene	81.2	70-130		%Rec	1	8/9/2022 3:51:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	110	60		mg/Kg	20	8/11/2022 1:16:47 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-97 6'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 8:40:00 AM

Lab ID: 2208347-009

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	14		mg/Kg	1	8/10/2022 6:20:36 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/10/2022 6:20:36 AM
Surr: DNOP	59.7	21-129		%Rec	1	8/10/2022 6:20:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2022 4:11:00 AM
Surr: BFB	86.7	37.7-212		%Rec	1	8/9/2022 4:11:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	8/9/2022 4:11:00 AM
Toluene	ND	0.046		mg/Kg	1	8/9/2022 4:11:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2022 4:11:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	8/9/2022 4:11:00 AM
Surr: 4-Bromofluorobenzene	78.7	70-130		%Rec	1	8/9/2022 4:11:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	68	60		mg/Kg	20	8/11/2022 1:29:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208347

Date Reported: 8/16/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-74 9'

Project: Routh SWD Tank Battery

Collection Date: 8/3/2022 11:00:00 AM

Lab ID: 2208347-010

Matrix: SOIL

Received Date: 8/5/2022 6:55:00 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	15		mg/Kg	1	8/10/2022 6:34:57 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/10/2022 6:34:57 AM
Surr: DNOP	56.1	21-129		%Rec	1	8/10/2022 6:34:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2022 4:30:00 AM
Surr: BFB	85.1	37.7-212		%Rec	1	8/9/2022 4:30:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/9/2022 4:30:00 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2022 4:30:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2022 4:30:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/9/2022 4:30:00 AM
Surr: 4-Bromofluorobenzene	79.3	70-130		%Rec	1	8/9/2022 4:30:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	370	60		mg/Kg	20	8/11/2022 1:41:29 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208347

16-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69385</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69385</b>		RunNo: <b>90148</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3215869</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-69385</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69385</b>		RunNo: <b>90148</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3215870</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			

Sample ID: <b>MB-69417</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69417</b>		RunNo: <b>90187</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217806</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-69417</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69417</b>		RunNo: <b>90187</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217807</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	100	90	110			

Sample ID: <b>2208347-005AMS</b>	SampType: <b>ms</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>BES22-93 4'</b>	Batch ID: <b>69417</b>		RunNo: <b>90187</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217818</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	97	61	30.00	74.77	75.2	57.5	166			

Sample ID: <b>2208347-005AMSD</b>	SampType: <b>msd</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>BES22-93 4'</b>	Batch ID: <b>69417</b>		RunNo: <b>90187</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217819</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	96	60	30.00	74.77	69.7	57.5	166	1.73	20	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208347

16-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69330</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69330</b>	RunNo: <b>90146</b>								
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/10/2022</b>	SeqNo: <b>3214248</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

15

Motor Oil Range Organics (MRO)

ND

50

Surr: DNOP

7.9

10.00

79.0

21

129

Sample ID: <b>LCS-69330</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69330</b>	RunNo: <b>90146</b>								
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/10/2022</b>	SeqNo: <b>3214249</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

46

15

50.00

0

92.1

64.4

127

Surr: DNOP

3.7

5.000

74.3

21

129

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2208347

16-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-69294</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69294</b>			RunNo: <b>90091</b>						
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>			SeqNo: <b>3211757</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	101	72.3	137			
Surr: BFB	2000		1000		198	37.7	212			

Sample ID: <b>mb-69294</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69294</b>			RunNo: <b>90091</b>						
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>			SeqNo: <b>3211758</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	870		1000		86.9	37.7	212			

**Qualifiers:**

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

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

WO#: 2208347

16-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-69294</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69294</b>			RunNo: <b>90091</b>						
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>			SeqNo: <b>3211805</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.2	80	120			
Toluene	0.87	0.050	1.000	0	86.9	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.9	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.1	80	120			
Surr: 4-Bromofluorobenzene	0.78		1.000		77.8	70	130			

Sample ID: <b>mb-69294</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69294</b>			RunNo: <b>90091</b>						
Prep Date: <b>8/5/2022</b>	Analysis Date: <b>8/8/2022</b>			SeqNo: <b>3211806</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	0.79		1.000		79.4	70	130			

**Qualifiers:**

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





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: 2208347

RcptNo: 1

Received By: Juan Rojas

8/5/2022 6:55:00 AM

*Juan Rojas*

Completed By: Sean Livingston

8/5/2022 8:06:06 AM

*Sean Livingston*

Reviewed By:

*JR 8/5/22*

Chain of Custody

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

Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *TMC 8/5/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good				

## Chain-of-Custody Record

Turn-Around Time:

5 day

☒ Standard ☒ Rush
**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Client: Vertex (EOG)

Project Name:

Routh SUD Tank Battery

Mailing Address:

on file

Phone #:

Project #: 22E-CO716-10

email or Fax#:

Project Manager:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Sampler:

SPC

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 2.3-0-2.3 (°C)

Container Type and #

Preservative Type

HEAL No.

Date

Time

Matrix

Sample Name

Container Type and #

Preservative Type

HEAL No.

Date

Time

Matrix

Sample Name

Container Type and #

Preservative Type

HEAL No.

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Container Type and #

Preservative Type

HEAL No.

Date

Time

Matrix

Sample Name



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

August 18, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208418

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 13 sample(s) on 8/6/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-113 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 8:45:00 AM

Lab ID: 2208418-001

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 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	14		mg/Kg	1	8/10/2022 2:39:55 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/10/2022 2:39:55 PM
Surr: DNOP	157	21-129	S	%Rec	1	8/10/2022 2:39:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/10/2022 11:42:23 PM
Surr: BFB	110	37.7-212		%Rec	1	8/10/2022 11:42:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/10/2022 11:42:23 PM
Toluene	ND	0.050		mg/Kg	1	8/10/2022 11:42:23 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/10/2022 11:42:23 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/10/2022 11:42:23 PM
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	8/10/2022 11:42:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/12/2022 4:36:05 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-114 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 8:50:00 AM

Lab ID: 2208418-002

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 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	14		mg/Kg	1	8/10/2022 2:53:31 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/10/2022 2:53:31 PM
Surr: DNOP	151	21-129	S	%Rec	1	8/10/2022 2:53:31 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 12:05:58 AM
Surr: BFB	108	37.7-212		%Rec	1	8/11/2022 12:05:58 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/11/2022 12:05:58 AM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 12:05:58 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 12:05:58 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/11/2022 12:05:58 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/11/2022 12:05:58 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	68	60		mg/Kg	20	8/12/2022 4:48:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-115 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 8:55:00 AM

Lab ID: 2208418-003

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/12/2022 10:32:46 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2022 10:32:46 AM
Surr: DNOP	99.3	21-129		%Rec	1	8/12/2022 10:32:46 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 12:29:38 AM
Surr: BFB	108	37.7-212		%Rec	1	8/11/2022 12:29:38 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 12:29:38 AM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 12:29:38 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 12:29:38 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 12:29:38 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/11/2022 12:29:38 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	99	59		mg/Kg	20	8/12/2022 5:00:47 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-116 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 9:00:00 AM

Lab ID: 2208418-004

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	31	14		mg/Kg	1	8/12/2022 10:56:31 AM
Motor Oil Range Organics (MRO)	50	48		mg/Kg	1	8/12/2022 10:56:31 AM
Surr: DNOP	101	21-129		%Rec	1	8/12/2022 10:56:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 12:53:12 AM
Surr: BFB	108	37.7-212		%Rec	1	8/11/2022 12:53:12 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 12:53:12 AM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 12:53:12 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 12:53:12 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 12:53:12 AM
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	8/11/2022 12:53:12 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/12/2022 7:41:19 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-117 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 9:05:00 AM

Lab ID: 2208418-005

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/16/2022 2:51:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/16/2022 2:51:08 PM
Surr: DNOP	120	21-129		%Rec	1	8/16/2022 2:51:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 9:41:57 AM
Surr: BFB	110	37.7-212		%Rec	1	8/11/2022 9:41:57 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 9:41:57 AM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 9:41:57 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 9:41:57 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 9:41:57 AM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	8/11/2022 9:41:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	150	60		mg/Kg	20	8/12/2022 8:18:19 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-118 9'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 9:10:00 AM

Lab ID: 2208418-006

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	27	15		mg/Kg	1	8/12/2022 1:20:28 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2022 1:20:28 AM
Surr: DNOP	104	21-129		%Rec	1	8/12/2022 1:20:28 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 10:52:53 AM
Surr: BFB	109	37.7-212		%Rec	1	8/11/2022 10:52:53 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 10:52:53 AM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 10:52:53 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 10:52:53 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 10:52:53 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/11/2022 10:52:53 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	63	60		mg/Kg	20	8/12/2022 9:20:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-119 8'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 12:00:00 PM

Lab ID: 2208418-007

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/12/2022 2:09:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/12/2022 2:09:28 AM
Surr: DNOP	100	21-129		%Rec	1	8/12/2022 2:09:28 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 12:03:55 PM
Surr: BFB	109	37.7-212		%Rec	1	8/11/2022 12:03:55 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/11/2022 12:03:55 PM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 12:03:55 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 12:03:55 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/11/2022 12:03:55 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/11/2022 12:03:55 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	100	60		mg/Kg	20	8/12/2022 9:32:23 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-120 8'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 12:05:00 PM

Lab ID: 2208418-008

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/12/2022 3:22:40 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2022 3:22:40 AM
Surr: DNOP	94.4	21-129		%Rec	1	8/12/2022 3:22:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 12:27:42 PM
Surr: BFB	113	37.7-212		%Rec	1	8/11/2022 12:27:42 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 12:27:42 PM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 12:27:42 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 12:27:42 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 12:27:42 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/11/2022 12:27:42 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	150	60		mg/Kg	20	8/12/2022 9:44:44 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-121 8'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 12:10:00 PM

Lab ID: 2208418-009

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/12/2022 3:46:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2022 3:46:54 AM
Surr: DNOP	99.7	21-129		%Rec	1	8/12/2022 3:46:54 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 12:51:23 PM
Surr: BFB	108	37.7-212		%Rec	1	8/11/2022 12:51:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 12:51:23 PM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 12:51:23 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 12:51:23 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 12:51:23 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/11/2022 12:51:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	190	60		mg/Kg	20	8/12/2022 9:57:05 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-122 8'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 12:15:00 PM

Lab ID: 2208418-010

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/12/2022 4:11:06 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/12/2022 4:11:06 AM
Surr: DNOP	104	21-129		%Rec	1	8/12/2022 4:11:06 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/11/2022 1:15:08 PM
Surr: BFB	112	37.7-212		%Rec	1	8/11/2022 1:15:08 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 1:15:08 PM
Toluene	ND	0.049		mg/Kg	1	8/11/2022 1:15:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/11/2022 1:15:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/11/2022 1:15:08 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/11/2022 1:15:08 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	120	60		mg/Kg	20	8/12/2022 10:09:26 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-123 7'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 10:00:00 AM

Lab ID: 2208418-011

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/12/2022 4:35:16 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2022 4:35:16 AM
Surr: DNOP	90.9	21-129		%Rec	1	8/12/2022 4:35:16 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 1:38:52 PM
Surr: BFB	111	37.7-212		%Rec	1	8/11/2022 1:38:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 1:38:52 PM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 1:38:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 1:38:52 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 1:38:52 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/11/2022 1:38:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	60		mg/Kg	20	8/12/2022 10:21:47 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-83 7'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 1:00:00 PM

Lab ID: 2208418-012

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/12/2022 4:59:09 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2022 4:59:09 AM
Surr: DNOP	98.6	21-129		%Rec	1	8/12/2022 4:59:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 2:02:37 PM
Surr: BFB	110	37.7-212		%Rec	1	8/11/2022 2:02:37 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 2:02:37 PM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 2:02:37 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 2:02:37 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 2:02:37 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/11/2022 2:02:37 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	98	60		mg/Kg	20	8/12/2022 10:34:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208418

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-84 7'

Project: Routh SWD Tank Battery

Collection Date: 8/4/2022 1:05:00 PM

Lab ID: 2208418-013

Matrix: SOIL

Received Date: 8/6/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/12/2022 5:23:10 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/12/2022 5:23:10 AM
Surr: DNOP	115	21-129		%Rec	1	8/12/2022 5:23:10 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/11/2022 2:26:28 PM
Surr: BFB	111	37.7-212		%Rec	1	8/11/2022 2:26:28 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/11/2022 2:26:28 PM
Toluene	ND	0.050		mg/Kg	1	8/11/2022 2:26:28 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/11/2022 2:26:28 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/11/2022 2:26:28 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/11/2022 2:26:28 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	100	61		mg/Kg	20	8/12/2022 10:46:28 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69461</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69461</b>		RunNo: <b>90236</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/12/2022</b>		SeqNo: <b>3219286</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-69461</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69461</b>		RunNo: <b>90236</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/12/2022</b>		SeqNo: <b>3219287</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	97.3	90	110			

Sample ID: <b>MB-69475</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69475</b>		RunNo: <b>90236</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/12/2022</b>		SeqNo: <b>3219316</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-69475</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69475</b>		RunNo: <b>90236</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/12/2022</b>		SeqNo: <b>3219317</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	98.7	90	110			

**Qualifiers:**

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

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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69340</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69340</b>				RunNo: <b>90104</b>					
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/9/2022</b>				SeqNo: <b>3212922</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.3	21	129			

Sample ID: <b>LCS-69347</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69347</b>				RunNo: <b>90104</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/9/2022</b>				SeqNo: <b>3212923</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	15	50.00	0	90.5	64.4	127			
Surr: DNOP	4.5		5.000		89.6	21	129			

Sample ID: <b>MB-69340</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69340</b>				RunNo: <b>90104</b>					
Prep Date: <b>8/8/2022</b>	Analysis Date: <b>8/9/2022</b>				SeqNo: <b>3212924</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.8		10.00		98.4	21	129			

Sample ID: <b>MB-69347</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69347</b>				RunNo: <b>90104</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/9/2022</b>				SeqNo: <b>3212925</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		96.8	21	129			

Sample ID: <b>2208418-007AMS</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>BES22-119 8'</b>	Batch ID: <b>69404</b>				RunNo: <b>90218</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3217759</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	15	50.00	0	90.0	36.1	154			
Surr: DNOP	4.7		5.000		94.8	21	129			

Sample ID: <b>2208418-007AMSD</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID: <b>BES22-119 8'</b>	Batch ID: <b>69404</b>				RunNo: <b>90218</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3217760</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	14	48.08	0	92.9	36.1	154	0.734	33.9	

**Qualifiers:**

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



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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: 2208418-007AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BES22-119 8'	Batch ID: 69404	RunNo: 90218								
Prep Date: 8/10/2022	Analysis Date: 8/12/2022	SeqNo: 3217760 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		4.808		96.9	21	129	0	0	

Sample ID: LCS-69404	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69404	RunNo: 90218								
Prep Date: 8/10/2022	Analysis Date: 8/11/2022	SeqNo: 3217777 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	50.00	0	86.6	64.4	127			
Surr: DNOP	4.5		5.000		89.7	21	129			

Sample ID: MB-69404	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69404	RunNo: 90218								
Prep Date: 8/10/2022	Analysis Date: 8/11/2022	SeqNo: 3217781 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.4	21	129			

Sample ID: MB-69457	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69457	RunNo: 90218								
Prep Date: 8/12/2022	Analysis Date: 8/12/2022	SeqNo: 3218061 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.3	21	129			

Sample ID: LCS-69457	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69457	RunNo: 90218								
Prep Date: 8/12/2022	Analysis Date: 8/12/2022	SeqNo: 3218062 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.3	21	129			

Sample ID: LCS-69425	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69425	RunNo: 90218								
Prep Date: 8/11/2022	Analysis Date: 8/12/2022	SeqNo: 3218134 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	50.00	0	88.4	64.4	127			
Surr: DNOP	4.4		5.000		87.7	21	129			

**Qualifiers:**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208418

18-Aug-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: MB-69425	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69425	RunNo: 90218								
Prep Date: 8/11/2022	Analysis Date: 8/12/2022	SeqNo: 3218135		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.8	21	129			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-69357</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69357</b>				RunNo: <b>90135</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/10/2022</b>				SeqNo: <b>3214169</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

Sample ID: <b>mb-69357</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69357</b>				RunNo: <b>90135</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/10/2022</b>				SeqNo: <b>3214170</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	37.7	212			

Sample ID: <b>2208418-005ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>BES22-117 9'</b>	Batch ID: <b>69360</b>				RunNo: <b>90211</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>				SeqNo: <b>3217166</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.56	0	111	70	130			
Surr: BFB	2100		982.3		215	37.7	212			S

Sample ID: <b>2208418-005amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>BES22-117 9'</b>	Batch ID: <b>69360</b>				RunNo: <b>90211</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>				SeqNo: <b>3217167</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	24.83	0	98.2	70	130	11.2	20	
Surr: BFB	2100		993.0		213	37.7	212	0	0	S

Sample ID: <b>ics-69360</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69360</b>				RunNo: <b>90211</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>				SeqNo: <b>3217209</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	106	72.3	137			
Surr: BFB	2100		1000		213	37.7	212			S

Sample ID: <b>mb-69360</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69360</b>				RunNo: <b>90211</b>					
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>				SeqNo: <b>3217211</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208418  
18-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: mb-69360	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 69360	RunNo: 90211								
Prep Date: 8/9/2022	Analysis Date: 8/11/2022	SeqNo: 3217211 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		112	37.7	212			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.
  - D Sample Diluted Due to Matrix
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quantitative Limit
  - S % Recovery outside of range due to dilution or matrix interference

- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69357</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69357</b>		RunNo: <b>90135</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3214183</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	93.0	80	120			
Toluene	0.97	0.050	1.000	0	96.8	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: <b>mb-69357</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69357</b>		RunNo: <b>90135</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/10/2022</b>		SeqNo: <b>3214184</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	70	130			

Sample ID: <b>2208418-006ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BES22-118 9'</b>	Batch ID: <b>69360</b>		RunNo: <b>90211</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217215</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.024	0.9785	0	85.8	68.8	120			
Toluene	0.88	0.049	0.9785	0	90.3	73.6	124			
Ethylbenzene	0.89	0.049	0.9785	0	90.8	72.7	129			
Xylenes, Total	2.7	0.098	2.935	0	90.4	75.7	126			
Surr: 4-Bromofluorobenzene	1.0		0.9785		104	70	130			

Sample ID: <b>2208418-006amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BES22-118 9'</b>	Batch ID: <b>69360</b>		RunNo: <b>90211</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217216</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9940	0	84.5	68.8	120	0.0630	20	
Toluene	0.89	0.050	0.9940	0	89.2	73.6	124	0.386	20	
Ethylbenzene	0.90	0.050	0.9940	0	90.3	72.7	129	1.08	20	
Xylenes, Total	2.7	0.099	2.982	0	89.2	75.7	126	0.220	20	
Surr: 4-Bromofluorobenzene	1.0		0.9940		105	70	130	0	0	

**Qualifiers:**

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

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

WO#: 2208418

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

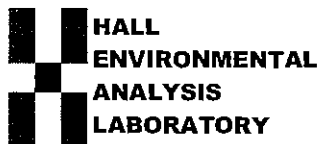
Sample ID: <b>LCS-69360</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69360</b>		RunNo: <b>90211</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217257</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.2	80	120			
Toluene	1.0	0.050	1.000	0	99.5	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.1	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	70	130			

Sample ID: <b>mb-69360</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69360</b>		RunNo: <b>90211</b>							
Prep Date: <b>8/9/2022</b>	Analysis Date: <b>8/11/2022</b>		SeqNo: <b>3217259</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	70	130			

**Qualifiers:**

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





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: 2208418 RcptNo: 1

Received By: Tracy Casarrubias 8/6/2022 10:30:00 AM

Completed By: Tracy Casarrubias 8/6/2022 12:51:08 PM

Reviewed By: *JN 8/8/22*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *KPU 8-08-22*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
By Whom: \_\_\_\_\_ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
Regarding: \_\_\_\_\_  
Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Yes			
2	4.5	Good	Yes			

## Chain-of-Custody Record

Client: Vertex (EoG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Routh SWD Tank Battery

Project #:

22E-00716

Project Manager:

Monica PeppinSampler: Sally CarttarOn ice: ☒ Yes ☐ No# of Coolers: 2Cooler Temp (including CP): 3.5 4.2 3.7 (°C)Cooler Temp (including CP): 4.3 4.2 4.2 (°C)

Container Type and #

Preservative Type

HEALING

2208418

140 jar ice

001

002

003

004

005

006

007

008

009

010

011

012

013

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015

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017

018

019

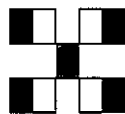
020

021

022

023

024

Date: 8/15 6:54Relinquished by: Sally CarttarDate: 8/15 1900Relinquished by: apennReceived by: apennDate: 8/15/22 130Received by: apennDate: 8/16/22 10:30Date: 8/15/22 130Date: 8/16/22 10:30Remarks: page 1/2direct bill EoGHALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH:8015D(GRO / DRO / MRO) ☒

8081 Pesticides/8082 PCB's ☒

EDB (Method 504.1) ☒

PAHs by 8310 or 8270SIMS ☒

RCRA 8 Metals ☒

Cl<sup>-</sup>, Br<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>-</sup>, SO<sub>4</sub><sup>-</sup> ☒

8260 (VOA) ☒

8270 (Semi-VOA) ☒

Total Coliform (Present/Absent) ☒

## Chain-of-Custody Record

Client: Vertex (EOG)Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Routh SVD tank Battery

Project #:

22E-00716

Project Manager:

Monica Peppin

Sampler:

Sally Cartier

On Ice:

☒ Yes ☐ No# of Coolers: 2Cooler Temp (including CFI): 3.5 4.0 3.7 (°C)

Container Type and #

Preservative Type

HEAL No

22024101 40g jar ice013

Date

Time

Matrix

Sample Name

8/413:05oilBES22-047'Date: 8/15Time: 6:54

Relinquished by:

Sally Cartier

Received by:

Monica

Via:

airDate: 8/5/22Time: 730

Received by:

Monica

Via:

canDate: 8/6/22Time: 10:30

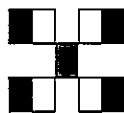
Received by:

Monica

Via:

can

Remarks:

page 2/2direct bill EOGHALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

BTEX / MTBE / TMB's (8021)

TPH 8015D (GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cd, 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)



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

August 18, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208490

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/9/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208490

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-03 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/5/2022 8:50:00 AM

Lab ID: 2208490-001

Matrix: SOIL

Received Date: 8/9/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/16/2022 6:27:46 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/16/2022 6:27:46 AM
Surr: DNOP	73.2	21-129		%Rec	1	8/16/2022 6:27:46 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/13/2022 2:01:29 AM
Surr: BFB	106	37.7-212		%Rec	1	8/13/2022 2:01:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 2:01:29 AM
Toluene	ND	0.048		mg/Kg	1	8/13/2022 2:01:29 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2022 2:01:29 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/13/2022 2:01:29 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/13/2022 2:01:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	350	60		mg/Kg	20	8/15/2022 7:19:50 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208490

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-09 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/5/2022 8:35:00 AM

Lab ID: 2208490-002

Matrix: SOIL

Received Date: 8/9/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	8/16/2022 6:51:46 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/16/2022 6:51:46 AM
Surr: DNOP	82.9	21-129		%Rec	1	8/16/2022 6:51:46 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/13/2022 2:25:07 AM
Surr: BFB	107	37.7-212		%Rec	1	8/13/2022 2:25:07 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 2:25:07 AM
Toluene	ND	0.048		mg/Kg	1	8/13/2022 2:25:07 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2022 2:25:07 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/13/2022 2:25:07 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/13/2022 2:25:07 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	360	60		mg/Kg	20	8/15/2022 7:56:54 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208490

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-08 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/5/2022 8:30:00 AM

Lab ID: 2208490-003

Matrix: SOIL

Received Date: 8/9/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	75	14		mg/Kg	1	8/16/2022 7:15:45 AM
Motor Oil Range Organics (MRO)	110	47		mg/Kg	1	8/16/2022 7:15:45 AM
Surr: DNOP	101	21-129		%Rec	1	8/16/2022 7:15:45 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/13/2022 2:48:43 AM
Surr: BFB	105	37.7-212		%Rec	1	8/13/2022 2:48:43 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 2:48:43 AM
Toluene	ND	0.048		mg/Kg	1	8/13/2022 2:48:43 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2022 2:48:43 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/13/2022 2:48:43 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/13/2022 2:48:43 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	ND	59		mg/Kg	20	8/15/2022 8:09:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208490

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-10 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/5/2022 8:40:00 AM

Lab ID: 2208490-004

Matrix: SOIL

Received Date: 8/9/2022 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	8/16/2022 7:39:35 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/16/2022 7:39:35 AM
Surr: DNOP	82.2	21-129		%Rec	1	8/16/2022 7:39:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/13/2022 3:12:20 AM
Surr: BFB	103	37.7-212		%Rec	1	8/13/2022 3:12:20 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/13/2022 3:12:20 AM
Toluene	ND	0.050		mg/Kg	1	8/13/2022 3:12:20 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/13/2022 3:12:20 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/13/2022 3:12:20 AM
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	8/13/2022 3:12:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	400	60		mg/Kg	20	8/15/2022 8:21:36 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208490

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69500</b>	SampType: <b>mbk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69500</b>	RunNo: <b>90282</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/15/2022</b>	SeqNo: <b>3220689</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-69500</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69500</b>	RunNo: <b>90282</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/15/2022</b>	SeqNo: <b>3220690</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	97.7	90	110			

**Qualifiers:**

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

Page 5 of 9

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

WO#: 2208490

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69474</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69474</b>		RunNo: <b>90269</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/15/2022</b>		SeqNo: <b>3220862</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.0	21	129			

Sample ID: <b>LCS-69474</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69474</b>		RunNo: <b>90269</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/15/2022</b>		SeqNo: <b>3220863</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	15	50.00	0	95.2	64.4	127			
Surr: DNOP	4.5		5.000		89.7	21	129			

**Qualifiers:**

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

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

WO#: 2208490

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>G90220</b>				RunNo: <b>90220</b>					
Prep Date:	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3218937</b>		Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	37.7	212			

Sample ID: <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>G90220</b>				RunNo: <b>90220</b>					
Prep Date:	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3218938</b>		Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2200		1000		224	37.7	212			S

Sample ID: <b>mb-69402</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69402</b>				RunNo: <b>90220</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3218944</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		111	37.7	212			

Sample ID: <b>LCS-69402</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69402</b>				RunNo: <b>90220</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>				SeqNo: <b>3218945</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	103	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

Sample ID: <b>mb-69407</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>69407</b>				RunNo: <b>90220</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>				SeqNo: <b>3218968</b>		Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		104	37.7	212			

Sample ID: <b>LCS-69407</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>69407</b>				RunNo: <b>90220</b>					
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>				SeqNo: <b>3218969</b>		Units: <b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		191	37.7	212			

**Qualifiers:**

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

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

WO#: 2208490

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>B90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218998</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	70	130			

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>B90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218999</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		104	70	130			

Sample ID: <b>mb-69402</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3219002</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	1.1		1.000		105	70	130			

Sample ID: <b>lcs-69402</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3219003</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.6	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

Sample ID: <b>mb-69407</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69407</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>			SeqNo: <b>3219026</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		101	70	130			

**Qualifiers:**

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



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208490

18-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: Ics-69407		SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS		Batch ID: 69407			RunNo: 90220					
Prep Date: 8/10/2022		Analysis Date: 8/13/2022			SeqNo: 3219027		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		105	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

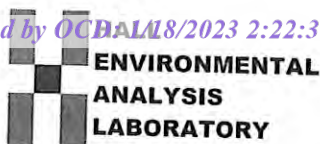
E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2208490

RcptNo: 1

Received By: Juan Rojas

8/9/2022 7:15:00 AM

Completed By: Sean Livingston

8/9/2022 9:14:13 AM

Reviewed By:

KRM 8.09.22

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: msl/9/22

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good				

## Chain-of-Custody Record

Client: Vertex (EOG)

Mailing Address: on file

Phone #: \_\_\_\_\_

email or Fax#: \_\_\_\_\_

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time: ☒ Standard ☒ Rush 5 day

Project Name: Routh SWD Tank Battery

Project #: 22E-00716

Project Manager: Monica Peppin

Sampler: Sally Cartier

On Ice: ☐ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CFI): 0.4-0.1 = 0.3 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
8/5	8:50	soil	WES22-03 0-4"	14oz jar	ice	2208490
	8:35		WES22-09 0-4"			001
	8:30		WES22-08 0-4"			002
	8:40		WES22-10 0-4"			003
						004

## Analysis Request

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

Remarks:

Received by: Channing Date: 8/8/22 Time: 1050

Relinquished by: Sally Cartier

Received by: Channing Date: 8/14/22 Time: 715

Relinquished by: Channing

direct Bill EOG





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

August 18, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208578

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/10/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208578

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-11 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/8/2022 1:30:00 PM

Lab ID: 2208578-001

Matrix: SOIL

Received Date: 8/10/2022 7:05:00 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	14		mg/Kg	1	8/16/2022 11:02:00 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/16/2022 11:02:00 AM
Surr: DNOP	89.2	21-129		%Rec	1	8/16/2022 11:02:00 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/13/2022 3:59:38 AM
Surr: BFB	105	37.7-212		%Rec	1	8/13/2022 3:59:38 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 3:59:38 AM
Toluene	ND	0.049		mg/Kg	1	8/13/2022 3:59:38 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/13/2022 3:59:38 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/13/2022 3:59:38 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/13/2022 3:59:38 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	61		mg/Kg	20	8/16/2022 2:35:10 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208578

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-12 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/8/2022 1:35:00 PM

Lab ID: 2208578-002

Matrix: SOIL

Received Date: 8/10/2022 7:05:00 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	15		mg/Kg	1	8/12/2022 7:31:33 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/12/2022 7:31:33 PM
Surr: DNOP	70.5	21-129		%Rec	1	8/12/2022 7:31:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/13/2022 6:21:39 AM
Surr: BFB	104	37.7-212		%Rec	1	8/13/2022 6:21:39 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 6:21:39 AM
Toluene	ND	0.048		mg/Kg	1	8/13/2022 6:21:39 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/13/2022 6:21:39 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/13/2022 6:21:39 AM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	8/13/2022 6:21:39 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	8/16/2022 3:37:14 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208578

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-13 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/8/2022 1:40:00 PM

Lab ID: 2208578-003

Matrix: SOIL

Received Date: 8/10/2022 7:05:00 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	15		mg/Kg	1	8/12/2022 8:18:28 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/12/2022 8:18:28 PM
Surr: DNOP	70.0	21-129		%Rec	1	8/12/2022 8:18:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/13/2022 7:32:42 AM
Surr: BFB	101	37.7-212		%Rec	1	8/13/2022 7:32:42 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/13/2022 7:32:42 AM
Toluene	ND	0.049		mg/Kg	1	8/13/2022 7:32:42 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/13/2022 7:32:42 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/13/2022 7:32:42 AM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	8/13/2022 7:32:42 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	340	60		mg/Kg	20	8/16/2022 3:49:39 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208578

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-14 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/8/2022 1:45:00 PM

Lab ID: 2208578-004

Matrix: SOIL

Received Date: 8/10/2022 7:05:00 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	14		mg/Kg	1	8/12/2022 8:33:41 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/12/2022 8:33:41 PM
Surr: DNOP	58.8	21-129		%Rec	1	8/12/2022 8:33:41 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/13/2022 8:43:37 AM
Surr: BFB	103	37.7-212		%Rec	1	8/13/2022 8:43:37 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/13/2022 8:43:37 AM
Toluene	ND	0.049		mg/Kg	1	8/13/2022 8:43:37 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/13/2022 8:43:37 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/13/2022 8:43:37 AM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	8/13/2022 8:43:37 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	8/16/2022 4:02:04 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208578

18-Aug-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: MB-69517	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69517	RunNo: 90295								
Prep Date: 8/15/2022	Analysis Date: 8/15/2022	SeqNo: 3220797		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69517	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69517	RunNo: 90295								
Prep Date: 8/15/2022	Analysis Date: 8/15/2022	SeqNo: 3220798		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2208578

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69436</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69436</b>	RunNo: <b>90272</b>								
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/12/2022</b>	SeqNo: <b>3219906</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.2	21	129			

Sample ID: <b>LCS-69436</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69436</b>	RunNo: <b>90272</b>								
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/12/2022</b>	SeqNo: <b>3219907</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	15	50.00	0	95.4	64.4	127			
Surr: DNOP	4.3		5.000		86.8	21	129			

Sample ID: <b>2208578-002AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WES22-12 0-4'</b>	Batch ID: <b>69436</b>	RunNo: <b>90272</b>								
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/12/2022</b>	SeqNo: <b>3219913</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	49.26	0	92.5	36.1	154			
Surr: DNOP	3.0		4.926		61.1	21	129			

Sample ID: <b>2208578-002AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WES22-12 0-4'</b>	Batch ID: <b>69436</b>	RunNo: <b>90272</b>								
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/12/2022</b>	SeqNo: <b>3219914</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	14	48.31	0	91.6	36.1	154	2.97	33.9	
Surr: DNOP	3.0		4.831		61.8	21	129	0	0	

Sample ID: <b>MB-69521</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69521</b>	RunNo: <b>90276</b>								
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/16/2022</b>	SeqNo: <b>3221703</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		87.7	21	129			

**Qualifiers:**

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

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208578  
18-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: LCS-69521	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69521	RunNo: 90276								
Prep Date: 8/16/2022	Analysis Date: 8/16/2022	SeqNo: 3221704 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	50.00	0	86.6	64.4	127			
Surr: DNOP	3.6		5.000		72.9	21	129			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.
  - D Sample Diluted Due to Matrix
  - H Holding times for preparation or analysis exceeded
  - ND Not Detected at the Reporting Limit
  - PQL Practical Quantitative Limit
  - S % Recovery outside of range due to dilution or matrix interference

- B Analyte detected in the associated Method Blank
- E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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

WO#: 2208578

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>G90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218937</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	37.7	212			

Sample ID: <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>G90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218938</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2200		1000		224	37.7	212			S

Sample ID: <b>mb-69402</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218944</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		111	37.7	212			

Sample ID: <b>LCS-69402</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218945</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	103	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

Sample ID: <b>mb-69407</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69407</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>			SeqNo: <b>3218968</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	37.7	212			

Sample ID: <b>LCS-69407</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69407</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>			SeqNo: <b>3218969</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	88.4	72.3	137			
Surr: BFB	1900		1000		191	37.7	212			

**Qualifiers:**

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



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

WO#: 2208578

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208578-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WES22-12 0-4'</b>	Batch ID: <b>69407</b>	RunNo: <b>90220</b>								
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>	SeqNo: <b>3218971</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	4.9	24.41	0	95.0	70	130			
Surr: BFB	1900		976.6		197	37.7	212			

Sample ID: <b>2208578-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WES22-12 0-4'</b>	Batch ID: <b>69407</b>	RunNo: <b>90220</b>								
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>	SeqNo: <b>3218972</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	4.9	24.41	0	90.8	70	130	4.43	20	
Surr: BFB	1900		976.6		197	37.7	212	0	0	

**Qualifiers:**

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

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

WO#: 2208578

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>B90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218998</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	70	130			

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>B90220</b>			RunNo: <b>90220</b>						
Prep Date:	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3218999</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		104	70	130			

Sample ID: <b>mb-69402</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3219002</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	1.1		1.000		105	70	130			

Sample ID: <b>lcs-69402</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69402</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/12/2022</b>			SeqNo: <b>3219003</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.6	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

Sample ID: <b>mb-69407</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69407</b>			RunNo: <b>90220</b>						
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>			SeqNo: <b>3219026</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								

**Qualifiers:**

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

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

WO#: 2208578

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69407</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69407</b>		RunNo: <b>90220</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>		SeqNo: <b>3219026</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>lcs-69407</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69407</b>		RunNo: <b>90220</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>		SeqNo: <b>3219027</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.4	80	120			
Toluene	0.91	0.050	1.000	0	91.2	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	70	130			

Sample ID: <b>2208578-003ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>WES22-13 0-4'</b>	Batch ID: <b>69407</b>		RunNo: <b>90220</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>		SeqNo: <b>3219030</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	0.9662	0	91.7	68.8	120			
Toluene	0.94	0.048	0.9662	0	97.8	73.6	124			
Ethylbenzene	0.97	0.048	0.9662	0	101	72.7	129			
Xylenes, Total	2.9	0.097	2.899	0	100	75.7	126			
Surr: 4-Bromofluorobenzene	1.0		0.9662		103	70	130			

Sample ID: <b>2208578-003amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>WES22-13 0-4'</b>	Batch ID: <b>69407</b>		RunNo: <b>90220</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/13/2022</b>		SeqNo: <b>3219031</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9766	0	90.3	68.8	120	0.514	20	
Toluene	0.95	0.049	0.9766	0	97.2	73.6	124	0.504	20	
Ethylbenzene	0.98	0.049	0.9766	0	100	72.7	129	0.182	20	
Xylenes, Total	2.9	0.098	2.930	0	99.2	75.7	126	0.0816	20	
Surr: 4-Bromofluorobenzene	1.0		0.9766		105	70	130	0	0	

Sample ID: <b>lcs-69398</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69398</b>		RunNo: <b>90279</b>							
Prep Date: <b>8/10/2022</b>	Analysis Date: <b>8/15/2022</b>		SeqNo: <b>3220401</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208578

18-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: Ics-69398		SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS		Batch ID: 69398			RunNo: 90279					
Prep Date: 8/10/2022		Analysis Date: 8/15/2022			SeqNo: 3220401		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	70	130			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 12 of 12



## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2208578

RcptNo: 1

Received By: Juan Rojas

8/10/2022 7:05:00 AM

Completed By: Sean Livingston

8/10/2022 7:59:26 AM

Reviewed By:

jns/10/22

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by: KRC

8-10-22

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good				



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

direct Bill EdG

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





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

August 18, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208698

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/11/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208698

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-02 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/9/2022 2:35:00 PM

Lab ID: 2208698-001

Matrix: SOIL

Received Date: 8/11/2022 7:10:00 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	14		mg/Kg	1	8/17/2022 1:46:18 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/17/2022 1:46:18 AM
Surr: DNOP	82.3	21-129		%Rec	1	8/17/2022 1:46:18 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/16/2022 3:23:55 AM
Surr: BFB	83.2	37.7-212		%Rec	1	8/16/2022 3:23:55 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/16/2022 3:23:55 AM
Toluene	ND	0.049		mg/Kg	1	8/16/2022 3:23:55 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/16/2022 3:23:55 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/16/2022 3:23:55 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	8/16/2022 3:23:55 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	270	60		mg/Kg	20	8/17/2022 6:54:17 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208698

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-04 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/9/2022 1:00:00 PM

Lab ID: 2208698-002

Matrix: SOIL

Received Date: 8/11/2022 7:10:00 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	13		mg/Kg	1	8/17/2022 2:02:17 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/17/2022 2:02:17 AM
Surr: DNOP	62.4	21-129		%Rec	1	8/17/2022 2:02:17 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/16/2022 3:47:35 AM
Surr: BFB	83.3	37.7-212		%Rec	1	8/16/2022 3:47:35 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/16/2022 3:47:35 AM
Toluene	ND	0.050		mg/Kg	1	8/16/2022 3:47:35 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/16/2022 3:47:35 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/16/2022 3:47:35 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	8/16/2022 3:47:35 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	280	60		mg/Kg	20	8/17/2022 7:06:39 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208698

Date Reported: 8/18/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-06 0-4'

Project: Routh SWD Tank Battery

Collection Date: 8/9/2022 9:00:00 AM

Lab ID: 2208698-003

Matrix: SOIL

Received Date: 8/11/2022 7:10:00 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	14		mg/Kg	1	8/17/2022 2:18:03 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/17/2022 2:18:03 AM
Surr: DNOP	76.7	21-129		%Rec	1	8/17/2022 2:18:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/16/2022 4:11:14 AM
Surr: BFB	86.6	37.7-212		%Rec	1	8/16/2022 4:11:14 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/16/2022 4:11:14 AM
Toluene	ND	0.050		mg/Kg	1	8/16/2022 4:11:14 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/16/2022 4:11:14 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/16/2022 4:11:14 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/16/2022 4:11:14 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	250	60		mg/Kg	20	8/17/2022 7:19:00 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208698

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69570</b>	SampType: <b>mbk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69570</b>	RunNo: <b>90338</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223889</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-69570</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69570</b>	RunNo: <b>90338</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223890</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	94.7	90	110			

**Qualifiers:**

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

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

WO#: 2208698

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69473</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69473</b>		RunNo: <b>90276</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/16/2022</b>		SeqNo: <b>3221171</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.3		10.00		83.1	21	129			

Sample ID: <b>LCS-69473</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69473</b>		RunNo: <b>90276</b>							
Prep Date: <b>8/12/2022</b>	Analysis Date: <b>8/16/2022</b>		SeqNo: <b>3221173</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.6	21	129			

Sample ID: <b>MB-69512</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69512</b>		RunNo: <b>90276</b>							
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/16/2022</b>		SeqNo: <b>3222536</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		86.8	21	129			

Sample ID: <b>LCS-69512</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69512</b>		RunNo: <b>90276</b>							
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/16/2022</b>		SeqNo: <b>3222537</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	50.00	0	85.9	64.4	127			
Surr: DNOP	4.0		5.000		80.3	21	129			

**Qualifiers:**

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



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2208698

18-Aug-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: mb-69442	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 69442	RunNo: 90279								
Prep Date: 8/11/2022	Analysis Date: 8/16/2022	SeqNo: 3220352		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	830		1000		83.3	37.7	212			

Sample ID: lcs-69442	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 69442	RunNo: 90279								
Prep Date: 8/11/2022	Analysis Date: 8/15/2022	SeqNo: 3220353		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	72.3	137			
Surr: BFB	1800		1000		176	37.7	212			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 6 of 7

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

WO#: 2208698

18-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

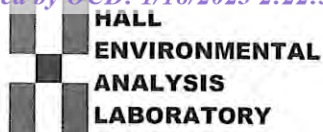
Sample ID: <b>mb-69442</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69442</b>		RunNo: <b>90279</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/16/2022</b>		SeqNo: <b>3220382</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	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	70	130			

Sample ID: <b>LCS-69442</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69442</b>		RunNo: <b>90279</b>							
Prep Date: <b>8/11/2022</b>	Analysis Date: <b>8/15/2022</b>		SeqNo: <b>3220383</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	99.4	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

**Qualifiers:**

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

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

## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2208698

RcptNo: 1

Received By: Juan Rojas

8/11/2022 7:10:00 AM

Completed By: Sean Livingston

8/11/2022 8:36:53 AM

Reviewed By: TMC

8/11/22

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

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? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: see 8/11/22

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	Good				

# Chain-of-Custody Record

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Client: Vertex (E06)

Project #: 22E-00710

Project Name: Routh SWD Tank Battery

Mailing Address:

on file

Project Manager:

Monica Peppin

Project #: 22E-00710

Phone #:

on file

email or Fax#:

on file

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ Az Compliance ☐ NELAC ☐ Other

EDD (Type)

Sampler: Sally Cartter

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 4.1-0=4.1 (°C)

Container Type and #

Preservative Type

HEAL No.

Date

Time

Matrix

Sample Name

0-4'

13:00

1

WES22-02

WES22-04

WES22-06

0-4'

9:00

1

Relinquished by:

Relinquished by:

Date:

Received by:

Via:

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

August 25, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208818

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 23 sample(s) on 8/12/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-98 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:00:00 AM

Lab ID: 2208818-001

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	15		mg/Kg	1	8/17/2022 5:12:12 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/17/2022 5:12:12 PM
Surr: DNOP	101	21-129		%Rec	1	8/17/2022 5:12:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 2:49:04 AM
Surr: BFB	104	37.7-212		%Rec	1	8/18/2022 2:49:04 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/17/2022 1:09:47 AM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 1:09:47 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 1:09:47 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/17/2022 1:09:47 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/17/2022 1:09:47 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	660	59		mg/Kg	20	8/17/2022 11:50:41 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-99 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:05:00 AM

Lab ID: 2208818-002

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	13		mg/Kg	1	8/17/2022 5:26:17 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	8/17/2022 5:26:17 PM
Surr: DNOP	101	21-129		%Rec	1	8/17/2022 5:26:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 3:12:37 AM
Surr: BFB	108	37.7-212		%Rec	1	8/18/2022 3:12:37 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 1:33:27 AM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 1:33:27 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 1:33:27 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 1:33:27 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/17/2022 1:33:27 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	940	59		mg/Kg	20	8/18/2022 12:03:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-100 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:10:00 AM

Lab ID: 2208818-003

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 5:40:10 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/17/2022 5:40:10 PM
Surr: DNOP	96.1	21-129		%Rec	1	8/17/2022 5:40:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/18/2022 3:36:09 AM
Surr: BFB	102	37.7-212		%Rec	1	8/18/2022 3:36:09 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 2:20:45 AM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 2:20:45 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 2:20:45 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/17/2022 2:20:45 AM
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	8/17/2022 2:20:45 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	530	61		mg/Kg	20	8/18/2022 12:15:23 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-101 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:15:00 AM

Lab ID: 2208818-004

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	15		mg/Kg	1	8/17/2022 5:54:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/17/2022 5:54:21 PM
Surr: DNOP	102	21-129		%Rec	1	8/17/2022 5:54:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/18/2022 3:59:42 AM
Surr: BFB	102	37.7-212		%Rec	1	8/18/2022 3:59:42 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 2:44:20 AM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 2:44:20 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 2:44:20 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 2:44:20 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	8/17/2022 2:44:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	310	60		mg/Kg	20	8/18/2022 12:52:26 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-102 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:20:00 AM

Lab ID: 2208818-005

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	15		mg/Kg	1	8/17/2022 6:08:17 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/17/2022 6:08:17 PM
Surr: DNOP	111	21-129		%Rec	1	8/17/2022 6:08:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/18/2022 4:23:12 AM
Surr: BFB	106	37.7-212		%Rec	1	8/18/2022 4:23:12 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 3:07:57 AM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 3:07:57 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 3:07:57 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 3:07:57 AM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/17/2022 3:07:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	650	60		mg/Kg	20	8/18/2022 1:04:46 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-103 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:25:00 AM

Lab ID: 2208818-006

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 6:22:24 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/17/2022 6:22:24 PM
Surr: DNOP	103	21-129		%Rec	1	8/17/2022 6:22:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 4:46:47 AM
Surr: BFB	103	37.7-212		%Rec	1	8/18/2022 4:46:47 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 3:31:28 AM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 3:31:28 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 3:31:28 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 3:31:28 AM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	8/17/2022 3:31:28 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	580	60		mg/Kg	20	8/18/2022 1:17:07 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-104 9'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:30:00 AM

Lab ID: 2208818-007

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 6:37:13 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/17/2022 6:37:13 PM
Surr: DNOP	106	21-129		%Rec	1	8/17/2022 6:37:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 5:10:27 AM
Surr: BFB	106	37.7-212		%Rec	1	8/18/2022 5:10:27 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/17/2022 3:55:06 AM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 3:55:06 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 3:55:06 AM
Xylenes, Total	ND	0.099		mg/Kg	1	8/17/2022 3:55:06 AM
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	8/17/2022 3:55:06 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	580	60		mg/Kg	20	8/18/2022 1:29:28 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-105 6'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:35:00 AM

Lab ID: 2208818-008

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 6:52:13 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/17/2022 6:52:13 PM
Surr: DNOP	92.5	21-129		%Rec	1	8/17/2022 6:52:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/18/2022 12:59:00 AM
Surr: BFB	95.4	37.7-212		%Rec	1	8/18/2022 12:59:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 4:18:46 AM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 4:18:46 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 4:18:46 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 4:18:46 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/17/2022 4:18:46 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	910	60		mg/Kg	20	8/18/2022 1:41:48 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-106 6'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:40:00 AM

Lab ID: 2208818-009

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 7:07:24 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/17/2022 7:07:24 PM
Surr: DNOP	96.2	21-129		%Rec	1	8/17/2022 7:07:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 1:19:00 AM
Surr: BFB	96.8	37.7-212		%Rec	1	8/18/2022 1:19:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/17/2022 4:42:26 AM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 4:42:26 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 4:42:26 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/17/2022 4:42:26 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	8/17/2022 4:42:26 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1600	60		mg/Kg	20	8/18/2022 1:54:08 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-107 6'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:45:00 AM

Lab ID: 2208818-010

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 7:22:33 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/17/2022 7:22:33 PM
Surr: DNOP	105	21-129		%Rec	1	8/17/2022 7:22:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/16/2022 3:44:00 PM
Surr: BFB	97.7	37.7-212		%Rec	1	8/16/2022 3:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	8/16/2022 3:44:00 PM
Toluene	ND	0.049		mg/Kg	1	8/16/2022 3:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/16/2022 3:44:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/16/2022 3:44:00 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	8/16/2022 3:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	530	60		mg/Kg	20	8/18/2022 2:06:29 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-108 6'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:50:00 AM

Lab ID: 2208818-011

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/17/2022 7:53:02 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/17/2022 7:53:02 PM
Surr: DNOP	89.5	21-129		%Rec	1	8/17/2022 7:53:02 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/16/2022 4:04:00 PM
Surr: BFB	99.3	37.7-212		%Rec	1	8/16/2022 4:04:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	8/16/2022 4:04:00 PM
Toluene	ND	0.047		mg/Kg	1	8/16/2022 4:04:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/16/2022 4:04:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/16/2022 4:04:00 PM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	8/16/2022 4:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	470	60		mg/Kg	20	8/18/2022 2:18:51 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-109 6'

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 9:55:00 AM

Lab ID: 2208818-012

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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)	72	15		mg/Kg	1	8/17/2022 8:08:20 PM
Motor Oil Range Organics (MRO)	110	49		mg/Kg	1	8/17/2022 8:08:20 PM
Surr: DNOP	111	21-129		%Rec	1	8/17/2022 8:08:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/16/2022 4:24:00 PM
Surr: BFB	97.6	37.7-212		%Rec	1	8/16/2022 4:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	8/16/2022 4:24:00 PM
Toluene	ND	0.048		mg/Kg	1	8/16/2022 4:24:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/16/2022 4:24:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/16/2022 4:24:00 PM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	8/16/2022 4:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	800	60		mg/Kg	20	8/18/2022 2:39:53 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-110

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 10:00:00 AM

Lab ID: 2208818-013

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	13		mg/Kg	1	8/19/2022 2:12:11 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/19/2022 2:12:11 PM
Surr: DNOP	67.8	21-129		%Rec	1	8/19/2022 2:12:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	2400	60		mg/Kg	20	8/18/2022 3:17:07 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 4:20:46 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 4:20:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 4:20:46 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/17/2022 4:20:46 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	8/17/2022 4:20:46 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/17/2022 4:20:46 PM
Surr: Dibromofluoromethane	116	70-130		%Rec	1	8/17/2022 4:20:46 PM
Surr: Toluene-d8	98.4	70-130		%Rec	1	8/17/2022 4:20:46 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 4:20:46 PM
Surr: BFB	116	70-130		%Rec	1	8/17/2022 4:20:46 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-111

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 10:05:00 AM

Lab ID: 2208818-014

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 2:26:15 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2022 2:26:15 PM
Surr: DNOP	81.0	21-129		%Rec	1	8/19/2022 2:26:15 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	850	60		mg/Kg	20	8/18/2022 3:29:31 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 4:49:30 PM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 4:49:30 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 4:49:30 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/17/2022 4:49:30 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	8/17/2022 4:49:30 PM
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	8/17/2022 4:49:30 PM
Surr: Dibromofluoromethane	119	70-130		%Rec	1	8/17/2022 4:49:30 PM
Surr: Toluene-d8	96.9	70-130		%Rec	1	8/17/2022 4:49:30 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 4:49:30 PM
Surr: BFB	117	70-130		%Rec	1	8/17/2022 4:49:30 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-112

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 10:10:00 AM

Lab ID: 2208818-015

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	13		mg/Kg	1	8/19/2022 2:40:36 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/19/2022 2:40:36 PM
Surr: DNOP	74.1	21-129		%Rec	1	8/19/2022 2:40:36 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	1400	60		mg/Kg	20	8/18/2022 3:41:56 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 5:18:16 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 5:18:16 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 5:18:16 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 5:18:16 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	8/17/2022 5:18:16 PM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	8/17/2022 5:18:16 PM
Surr: Dibromofluoromethane	119	70-130		%Rec	1	8/17/2022 5:18:16 PM
Surr: Toluene-d8	98.4	70-130		%Rec	1	8/17/2022 5:18:16 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 5:18:16 PM
Surr: BFB	118	70-130		%Rec	1	8/17/2022 5:18:16 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-85

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:30:00 PM

Lab ID: 2208818-016

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 2:54:36 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/19/2022 2:54:36 PM
Surr: DNOP	83.1	21-129		%Rec	1	8/19/2022 2:54:36 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	190	60		mg/Kg	20	8/18/2022 12:57:07 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 5:47:02 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 5:47:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 5:47:02 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/17/2022 5:47:02 PM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	8/17/2022 5:47:02 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	8/17/2022 5:47:02 PM
Surr: Dibromofluoromethane	122	70-130		%Rec	1	8/17/2022 5:47:02 PM
Surr: Toluene-d8	101	70-130		%Rec	1	8/17/2022 5:47:02 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 5:47:02 PM
Surr: BFB	122	70-130		%Rec	1	8/17/2022 5:47:02 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-124

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:35:00 PM

Lab ID: 2208818-017

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	13		mg/Kg	1	8/19/2022 3:09:02 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/19/2022 3:09:02 PM
Surr: DNOP	79.9	21-129		%Rec	1	8/19/2022 3:09:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	530	60		mg/Kg	20	8/18/2022 1:09:31 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 6:15:44 PM
Toluene	ND	0.047		mg/Kg	1	8/17/2022 6:15:44 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/17/2022 6:15:44 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/17/2022 6:15:44 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	8/17/2022 6:15:44 PM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	8/17/2022 6:15:44 PM
Surr: Dibromofluoromethane	119	70-130		%Rec	1	8/17/2022 6:15:44 PM
Surr: Toluene-d8	101	70-130		%Rec	1	8/17/2022 6:15:44 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/17/2022 6:15:44 PM
Surr: BFB	121	70-130		%Rec	1	8/17/2022 6:15:44 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-125

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:40:00 PM

Lab ID: 2208818-018

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 3:23:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 3:23:38 PM
Surr: DNOP	78.0	21-129		%Rec	1	8/19/2022 3:23:38 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	540	60		mg/Kg	20	8/18/2022 1:21:56 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 6:44:27 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 6:44:27 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 6:44:27 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/17/2022 6:44:27 PM
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	8/17/2022 6:44:27 PM
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	8/17/2022 6:44:27 PM
Surr: Dibromofluoromethane	119	70-130		%Rec	1	8/17/2022 6:44:27 PM
Surr: Toluene-d8	98.8	70-130		%Rec	1	8/17/2022 6:44:27 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 6:44:27 PM
Surr: BFB	118	70-130		%Rec	1	8/17/2022 6:44:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-126

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:45:00 PM

Lab ID: 2208818-019

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 3:37:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 3:37:46 PM
Surr: DNOP	76.7	21-129		%Rec	1	8/19/2022 3:37:46 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	410	60		mg/Kg	20	8/18/2022 1:34:21 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 7:13:08 PM
Toluene	ND	0.049		mg/Kg	1	8/17/2022 7:13:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2022 7:13:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/17/2022 7:13:08 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	8/17/2022 7:13:08 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	8/17/2022 7:13:08 PM
Surr: Dibromofluoromethane	125	70-130		%Rec	1	8/17/2022 7:13:08 PM
Surr: Toluene-d8	99.8	70-130		%Rec	1	8/17/2022 7:13:08 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 7:13:08 PM
Surr: BFB	116	70-130		%Rec	1	8/17/2022 7:13:08 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-127

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:50:00 PM

Lab ID: 2208818-020

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 1:53:49 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 1:53:49 PM
Surr: DNOP	95.2	21-129		%Rec	1	8/19/2022 1:53:49 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	570	60		mg/Kg	20	8/18/2022 1:46:45 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.023		mg/Kg	1	8/17/2022 7:41:52 PM
Toluene	ND	0.046		mg/Kg	1	8/17/2022 7:41:52 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/17/2022 7:41:52 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/17/2022 7:41:52 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	8/17/2022 7:41:52 PM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	8/17/2022 7:41:52 PM
Surr: Dibromofluoromethane	122	70-130		%Rec	1	8/17/2022 7:41:52 PM
Surr: Toluene-d8	99.5	70-130		%Rec	1	8/17/2022 7:41:52 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/17/2022 7:41:52 PM
Surr: BFB	119	70-130		%Rec	1	8/17/2022 7:41:52 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-128

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 1:55:00 PM

Lab ID: 2208818-021

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 2:17:45 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2022 2:17:45 PM
Surr: DNOP	86.6	21-129		%Rec	1	8/19/2022 2:17:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	200	61		mg/Kg	20	8/18/2022 1:59:10 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 8:10:33 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 8:10:33 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 8:10:33 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2022 8:10:33 PM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	8/17/2022 8:10:33 PM
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	8/17/2022 8:10:33 PM
Surr: Dibromofluoromethane	121	70-130		%Rec	1	8/17/2022 8:10:33 PM
Surr: Toluene-d8	97.7	70-130		%Rec	1	8/17/2022 8:10:33 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 8:10:33 PM
Surr: BFB	119	70-130		%Rec	1	8/17/2022 8:10:33 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-129

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 2:00:00 PM

Lab ID: 2208818-022

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	14		mg/Kg	1	8/19/2022 2:41:52 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 2:41:52 PM
Surr: DNOP	105	21-129		%Rec	1	8/19/2022 2:41:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	590	60		mg/Kg	20	8/18/2022 2:11:34 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 8:39:15 PM
Toluene	ND	0.047		mg/Kg	1	8/17/2022 8:39:15 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/17/2022 8:39:15 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/17/2022 8:39:15 PM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	8/17/2022 8:39:15 PM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	8/17/2022 8:39:15 PM
Surr: Dibromofluoromethane	118	70-130		%Rec	1	8/17/2022 8:39:15 PM
Surr: Toluene-d8	99.8	70-130		%Rec	1	8/17/2022 8:39:15 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/17/2022 8:39:15 PM
Surr: BFB	120	70-130		%Rec	1	8/17/2022 8:39:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208818

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-130

Project: Routh SWD Tank Battery

Collection Date: 8/10/2022 2:05:00 PM

Lab ID: 2208818-023

Matrix: SOIL

Received Date: 8/12/2022 7:20:00 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	15		mg/Kg	1	8/19/2022 3:52:06 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/19/2022 3:52:06 PM
Surr: DNOP	84.4	21-129		%Rec	1	8/19/2022 3:52:06 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	140	60		mg/Kg	20	8/18/2022 2:23:59 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JR</b>
Benzene	ND	0.024		mg/Kg	1	8/17/2022 9:07:54 PM
Toluene	ND	0.048		mg/Kg	1	8/17/2022 9:07:54 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2022 9:07:54 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/17/2022 9:07:54 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	8/17/2022 9:07:54 PM
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	8/17/2022 9:07:54 PM
Surr: Dibromofluoromethane	117	70-130		%Rec	1	8/17/2022 9:07:54 PM
Surr: Toluene-d8	99.2	70-130		%Rec	1	8/17/2022 9:07:54 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 9:07:54 PM
Surr: BFB	119	70-130		%Rec	1	8/17/2022 9:07:54 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69587</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69587</b>		RunNo: <b>90338</b>							
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/17/2022</b>		SeqNo: <b>3223921</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-69587</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69587</b>		RunNo: <b>90338</b>							
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/17/2022</b>		SeqNo: <b>3223922</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	94.2	90	110			

Sample ID: <b>MB-69603</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69603</b>		RunNo: <b>90384</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226290</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-69603</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69603</b>		RunNo: <b>90384</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226292</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	95.4	90	110			

Sample ID: <b>MB-69596</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69596</b>		RunNo: <b>90387</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226928</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-69596</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69596</b>		RunNo: <b>90387</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226929</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	93.2	90	110			

**Qualifiers:**

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

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

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69529</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69529</b>	RunNo: <b>90347</b>								
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223156</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		115	21	129			

Sample ID: <b>LCS-69529</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69529</b>	RunNo: <b>90347</b>								
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223157</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.7	64.4	127			
Surr: DNOP	4.4		5.000		88.3	21	129			

Sample ID: <b>MB-69564</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69564</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3227135</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.3	21	129			

Sample ID: <b>LCS-69564</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69564</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3227136</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	94.3	64.4	127			
Surr: DNOP	4.2		5.000		83.4	21	129			

Sample ID: <b>2208818-013AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-110</b>	Batch ID: <b>69564</b>	RunNo: <b>90431</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3232643</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	49.80	0	88.7	36.1	154			
Surr: DNOP	4.3		4.980		86.7	21	129			

**Qualifiers:**

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>2208818-013AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-110</b>	Batch ID: <b>69564</b>	RunNo: <b>90431</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3232644</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	13	42.81	0	94.3	36.1	154	9.01	33.9	
Surr: DNOP	3.7		4.281		87.4	21	129	0	0	

**Qualifiers:**

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

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

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69518</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69518</b>	RunNo: <b>90345</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223615</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		105	37.7	212			

Sample ID: <b>lcs-69518</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69518</b>	RunNo: <b>90345</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3223616</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	104	72.3	137			
Surr: BFB	2100		1000		210	37.7	212			

**Qualifiers:**

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

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

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-69518</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69518</b>	RunNo: <b>90310</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/16/2022</b>	SeqNo: <b>3222136</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		105	70	130			

Sample ID: <b>LCS-69518</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69518</b>	RunNo: <b>90310</b>								
Prep Date: <b>8/15/2022</b>	Analysis Date: <b>8/16/2022</b>	SeqNo: <b>3222137</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	93.4	80	120			
Toluene	0.97	0.050	1.000	0	96.8	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.1	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.7	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	70	130			

**Qualifiers:**

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

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

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-69536</b>	SampType: <b>LCS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>69536</b>	RunNo: <b>90366</b>								
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3224318</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.9	80	120			
Toluene	0.91	0.050	1.000	0	90.6	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.5	80	120			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		115	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID: <b>mb-69536</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69536</b>	RunNo: <b>90366</b>								
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>	SeqNo: <b>3224319</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: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.8	70	130			
Surr: Dibromofluoromethane	0.59		0.5000		119	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			

**Qualifiers:**

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2208818

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

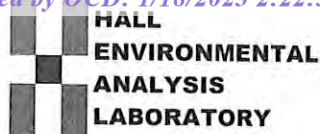
Sample ID: <b>lcs-69536</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69536</b>			RunNo: <b>90366</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>			SeqNo: <b>3224342</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.0	70	130			
Surr: BFB	570		500.0		115	70	130			

Sample ID: <b>mb-69536</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69536</b>			RunNo: <b>90366</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>			SeqNo: <b>3224343</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	580		500.0		115	70	130			

**Qualifiers:**

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

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

## Sample Log-In Check List

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

Work Order Number: **2208818**

RcptNo: 1

Received By: **Juan Rojas**

8/12/2022 7:20:00 AM

*Juan Rojas*

Completed By: **Cheyenne Cason**

8/12/2022 9:43:24 AM

*Cheyenne Cason*

Reviewed By: **DAD** 8/12/22

Chain of Custody

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

Log In

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

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: *JR 8/12/22*

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Not Present			



## Chain-of-Custody Record

Client:

Vertex (EOG)

Mailing Address:

on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard

Rush 5 days

Project Name:

Routh SWD Tank Battery

Project #:

22E-00716

Project Manager:

Monica Peppin

Sampler:

SPC

On Ice: ☒ Yes ☐ No

# of Coolers: 1

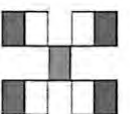
Cooler Temp (including CF): 0.5 to 0.5 (°C)

Container Type and #

Preservative Type

HEAL No.

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


**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	Remarks
8/10	9:00	Soil	BES22-98 9'	1 4oz jar	ice	2208818	✓
	9:05		BES22-99 9'			002	✓
	9:10		BES22-100 9'			003	
	9:15		BES22-101 9'			004	
	9:20		BES22-102 9'			005	
	9:25		BES22-103 9'			006	
	9:30		BES22-104 9'			007	
	9:35		BES22-105 10'			008	
	9:40		BES22-106 10'			009	
	9:45		BES22-107 10'			010	
	9:50		BES22-108 10'			011	
	9:55		BES22-109 10'			012	

Relinquished by:

Via:

Date Time

Remarks:

Received by:

Via:

Date Time

Relinquished by:

Via:

Date Time



## Chain-of-Custody Record

Client:

Vertex (EOG)

Mailing Address:

on file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush 5 Day

Project Name:

Routh SMD Tank Battery

Project #:

22E-00716

Project Manager:

Monica Peppin

Sampler:

SPC

On Ice:

☒ Yes☐ No

# of Coolers:

1

Cooler Temp (including CRI): 05-0-0.5 (°C)

Container Type and #

Preservative Type

HEAL No.

Type and #

Type

HEAL No.

Type and #

Type

HEAL No.

Type and #

Type

HEAL No.

Type and #

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HEAL No.

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HEAL No.

Type and #

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HEAL No.

Type and #

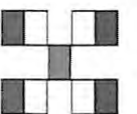
Type

HEAL No.

Type and #

Type

HEAL No.


**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	Remarks
8/10	10:00	Soil	BES22-110	1 40g jar	ice	013	✓ BTEX / MTBE / TMB's (8021)
	10:05		BES22-111			014	✓ TPH:8015D(GRO / DRO / MRO)
	10:10		BES22-112			015	8081 Pesticides/8082 PCB's
	13:30		BES22-85			016	EDB (Method 504.1)
	13:35		BES22-124			017	PAHs by 8310 or 8270SIMS
	13:40		BES22-125			018	RCRA 8 Metals
	13:45		BES22-126			019	✓ Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>
	13:50		BES22-127			020	8260 (VOA)
	13:55		BES22-128			021	8270 (Semi-VOA)
	14:00		BES22-129			022	Total Coliform (Present/Absent)
	14:05		BES22-130			023	

Remarks:

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direct bill EOG

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



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

August 25, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2208879

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 21 sample(s) on 8/13/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-131 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:00:00 AM

Lab ID: 2208879-001

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 9:27:31 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/19/2022 9:27:31 PM
Surr: DNOP	74.6	21-129		%Rec	1	8/19/2022 9:27:31 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 7:03:00 PM
Surr: BFB	99.8	37.7-212		%Rec	1	8/17/2022 7:03:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 3:10:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 3:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 3:10:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 3:10:00 PM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	8/18/2022 3:10:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	2300	150		mg/Kg	50	8/22/2022 6:20:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-132 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:05:00 AM

Lab ID: 2208879-002

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/19/2022 10:09:40 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 10:09:40 PM
Surr: DNOP	85.8	21-129		%Rec	1	8/19/2022 10:09:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 7:23:00 PM
Surr: BFB	100	37.7-212		%Rec	1	8/17/2022 7:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 3:30:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 3:30:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 3:30:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 3:30:00 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	8/18/2022 3:30:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	3300	300		mg/Kg	100	8/20/2022 9:09:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-133 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:10:00 AM

Lab ID: 2208879-003

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 10:23:39 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/19/2022 10:23:39 PM
Surr: DNOP	83.9	21-129		%Rec	1	8/19/2022 10:23:39 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/17/2022 7:43:00 PM
Surr: BFB	100	37.7-212		%Rec	1	8/17/2022 7:43:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 3:49:00 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 3:49:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 3:49:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 3:49:00 PM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	8/18/2022 3:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	12000	600		mg/Kg	200	8/22/2022 4:41:15 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-134 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:15:00 AM

Lab ID: 2208879-004

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 10:37:40 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2022 10:37:40 PM
Surr: DNOP	87.5	21-129		%Rec	1	8/19/2022 10:37:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/17/2022 8:03:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/17/2022 8:03:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 4:09:00 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 4:09:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 4:09:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 4:09:00 PM
Surr: 4-Bromofluorobenzene	95.5	70-130		%Rec	1	8/18/2022 4:09:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	11000	590		mg/Kg	200	8/22/2022 4:53:36 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-135 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:20:00 AM

Lab ID: 2208879-005

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 10:51:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/19/2022 10:51:38 PM
Surr: DNOP	79.5	21-129		%Rec	1	8/19/2022 10:51:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 8:23:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/17/2022 8:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 4:29:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 4:29:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 4:29:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 4:29:00 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	8/18/2022 4:29:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	5600	150		mg/Kg	50	8/22/2022 5:05:57 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-136 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:25:00 AM

Lab ID: 2208879-006

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	13		mg/Kg	1	8/19/2022 11:05:38 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	8/19/2022 11:05:38 PM
Surr: DNOP	73.0	21-129		%Rec	1	8/19/2022 11:05:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 8:42:00 PM
Surr: BFB	105	37.7-212		%Rec	1	8/17/2022 8:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/18/2022 4:49:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 4:49:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 4:49:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/18/2022 4:49:00 PM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/18/2022 4:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	3100	150		mg/Kg	50	8/22/2022 5:18:18 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-137 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:30:00 AM

Lab ID: 2208879-007

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/19/2022 11:19:36 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/19/2022 11:19:36 PM
Surr: DNOP	80.4	21-129		%Rec	1	8/19/2022 11:19:36 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/17/2022 9:02:00 PM
Surr: BFB	98.7	37.7-212		%Rec	1	8/17/2022 9:02:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/18/2022 7:25:00 PM
Toluene	ND	0.048		mg/Kg	1	8/18/2022 7:25:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/18/2022 7:25:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/18/2022 7:25:00 PM
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	1	8/18/2022 7:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1700	60		mg/Kg	20	8/19/2022 1:02:10 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-138 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:35:00 AM

Lab ID: 2208879-008

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 11:33:34 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/19/2022 11:33:34 PM
Surr: DNOP	81.7	21-129		%Rec	1	8/19/2022 11:33:34 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 9:22:00 PM
Surr: BFB	95.1	37.7-212		%Rec	1	8/17/2022 9:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 7:45:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 7:45:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 7:45:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 7:45:00 PM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	8/18/2022 7:45:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	170	60		mg/Kg	20	8/19/2022 1:14:34 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-139 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:40:00 AM

Lab ID: 2208879-009

Matrix: SOIL

Received Date: 8/13/2022 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	15		mg/Kg	1	8/19/2022 11:47:34 PM
Motor Oil Range Organics (MRO)	160	49		mg/Kg	1	8/19/2022 11:47:34 PM
Surr: DNOP	84.9	21-129		%Rec	1	8/19/2022 11:47:34 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 9:42:00 PM
Surr: BFB	97.9	37.7-212		%Rec	1	8/17/2022 9:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/18/2022 8:05:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 8:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 8:05:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 8:05:00 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	8/18/2022 8:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1100	60		mg/Kg	20	8/19/2022 1:26:58 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-140 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:45:00 AM

Lab ID: 2208879-010

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 12:01:29 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/20/2022 12:01:29 AM
Surr: DNOP	82.5	21-129		%Rec	1	8/20/2022 12:01:29 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 10:01:00 PM
Surr: BFB	100	37.7-212		%Rec	1	8/17/2022 10:01:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 8:24:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 8:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 8:24:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 8:24:00 PM
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	8/18/2022 8:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	150	59		mg/Kg	20	8/19/2022 1:39:23 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-141 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:50:00 AM

Lab ID: 2208879-011

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 12:15:29 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/20/2022 12:15:29 AM
Surr: DNOP	83.8	21-129		%Rec	1	8/20/2022 12:15:29 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 10:41:00 PM
Surr: BFB	101	37.7-212		%Rec	1	8/17/2022 10:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.024		mg/Kg	1	8/18/2022 8:44:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 8:44:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 8:44:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 8:44:00 PM
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	8/18/2022 8:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	530	60		mg/Kg	20	8/19/2022 1:51:48 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-142 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 10:55:00 AM

Lab ID: 2208879-012

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	13		mg/Kg	1	8/20/2022 12:29:25 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/20/2022 12:29:25 AM
Surr: DNOP	85.9	21-129		%Rec	1	8/20/2022 12:29:25 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 11:01:00 PM
Surr: BFB	99.2	37.7-212		%Rec	1	8/17/2022 11:01:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 9:04:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 9:04:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 9:04:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 9:04:00 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	8/18/2022 9:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	540	60		mg/Kg	20	8/19/2022 2:04:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-143 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:30:00 PM

Lab ID: 2208879-013

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 12:43:23 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/20/2022 12:43:23 AM
Surr: DNOP	79.7	21-129		%Rec	1	8/20/2022 12:43:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/17/2022 11:20:00 PM
Surr: BFB	99.1	37.7-212		%Rec	1	8/17/2022 11:20:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 9:24:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 9:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 9:24:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 9:24:00 PM
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	1	8/18/2022 9:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	5900	300		mg/Kg	100	8/22/2022 5:55:22 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-144 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 11:00:00 AM

Lab ID: 2208879-014

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 12:57:19 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/20/2022 12:57:19 AM
Surr: DNOP	76.5	21-129		%Rec	1	8/20/2022 12:57:19 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/17/2022 11:40:00 PM
Surr: BFB	102	37.7-212		%Rec	1	8/17/2022 11:40:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 9:43:00 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 9:43:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 9:43:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 9:43:00 PM
Surr: 4-Bromofluorobenzene	97.2	70-130		%Rec	1	8/18/2022 9:43:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	5600	300		mg/Kg	100	8/22/2022 6:07:42 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-145 6'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 11:05:00 AM

Lab ID: 2208879-015

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	13		mg/Kg	1	8/20/2022 1:11:15 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/20/2022 1:11:15 AM
Surr: DNOP	79.1	21-129		%Rec	1	8/20/2022 1:11:15 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/18/2022
Surr: BFB	101	37.7-212		%Rec	1	8/18/2022
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 10:03:00 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 10:03:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 10:03:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 10:03:00 PM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/18/2022 10:03:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1300	60		mg/Kg	20	8/19/2022 2:41:27 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-146 5'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 11:10:00 AM

Lab ID: 2208879-016

Matrix: SOIL

Received Date: 8/13/2022 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)	18	14		mg/Kg	1	8/20/2022 1:25:21 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/20/2022 1:25:21 AM
Surr: DNOP	71.8	21-129		%Rec	1	8/20/2022 1:25:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 12:20:00 AM
Surr: BFB	98.0	37.7-212		%Rec	1	8/18/2022 12:20:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 10:23:00 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 10:23:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 10:23:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 10:23:00 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	8/18/2022 10:23:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	450	60		mg/Kg	20	8/19/2022 2:53:51 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-147 10'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:35:00 PM

Lab ID: 2208879-017

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 1:39:24 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/20/2022 1:39:24 AM
Surr: DNOP	83.9	21-129		%Rec	1	8/20/2022 1:39:24 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/18/2022 12:39:00 AM
Surr: BFB	102	37.7-212		%Rec	1	8/18/2022 12:39:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 11:02:00 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 11:02:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 11:02:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 11:02:00 PM
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	8/18/2022 11:02:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	470	60		mg/Kg	20	8/19/2022 6:24:48 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-148 10'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:40:00 PM

Lab ID: 2208879-018

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/20/2022 1:53:21 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/20/2022 1:53:21 AM
Surr: DNOP	82.3	21-129		%Rec	1	8/20/2022 1:53:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 4:23:15 PM
Surr: BFB	105	37.7-212		%Rec	1	8/18/2022 4:23:15 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 4:23:15 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 4:23:15 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 4:23:15 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2022 4:23:15 PM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	8/18/2022 4:23:15 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	440	60		mg/Kg	20	8/19/2022 6:37:13 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-149 10'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:45:00 PM

Lab ID: 2208879-019

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/19/2022 6:26:17 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2022 6:26:17 PM
Surr: DNOP	74.2	21-129		%Rec	1	8/19/2022 6:26:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/18/2022 4:46:56 PM
Surr: BFB	107	37.7-212		%Rec	1	8/18/2022 4:46:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 4:46:56 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 4:46:56 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 4:46:56 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 4:46:56 PM
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	8/18/2022 4:46:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	360	60		mg/Kg	20	8/19/2022 6:49:38 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-150 10'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:50:00 PM

Lab ID: 2208879-020

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	15		mg/Kg	1	8/19/2022 6:40:17 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2022 6:40:17 PM
Surr: DNOP	80.5	21-129		%Rec	1	8/19/2022 6:40:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/18/2022 5:10:31 PM
Surr: BFB	102	37.7-212		%Rec	1	8/18/2022 5:10:31 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 5:10:31 PM
Toluene	ND	0.050		mg/Kg	1	8/18/2022 5:10:31 PM
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2022 5:10:31 PM
Xylenes, Total	ND	0.10		mg/Kg	1	8/18/2022 5:10:31 PM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	8/18/2022 5:10:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	350	60		mg/Kg	20	8/19/2022 7:02:03 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2208879

Date Reported: 8/25/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-151 10'

Project: Routh SWD Tank Battery

Collection Date: 8/11/2022 1:55:00 PM

Lab ID: 2208879-021

Matrix: SOIL

Received Date: 8/13/2022 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)	ND	14		mg/Kg	1	8/19/2022 12:19:56 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/19/2022 12:19:56 AM
Surr: DNOP	80.3	21-129		%Rec	1	8/19/2022 12:19:56 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2022 5:34:13 PM
Surr: BFB	105	37.7-212		%Rec	1	8/18/2022 5:34:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	8/18/2022 5:34:13 PM
Toluene	ND	0.049		mg/Kg	1	8/18/2022 5:34:13 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2022 5:34:13 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2022 5:34:13 PM
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	1	8/18/2022 5:34:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	790	61		mg/Kg	20	8/19/2022 7:39:17 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

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

WO#: 2208879

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69616</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69616</b>		RunNo: <b>90387</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226960</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-69616</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69616</b>		RunNo: <b>90387</b>							
Prep Date: <b>8/18/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3226961</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	93.8	90	110			

Sample ID: <b>MB-69629</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69629</b>		RunNo: <b>90418</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3228072</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-69629</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69629</b>		RunNo: <b>90418</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3228073</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			

Sample ID: <b>MB-69643</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69643</b>		RunNo: <b>90418</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3228127</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-69643</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69643</b>		RunNo: <b>90418</b>							
Prep Date: <b>8/19/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3228128</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			

**Qualifiers:**

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

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

WO#: 2208879

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-69574</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69574</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3228242</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		83.3	21	129			

Sample ID: <b>LCS-69574</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>69574</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3228243</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	50.00	0	88.0	64.4	127			
Surr: DNOP	4.3		5.000		85.6	21	129			

Sample ID: <b>2208879-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-131 6'</b>	Batch ID: <b>69574</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3228245</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	15	48.40	0	82.4	36.1	154			
Surr: DNOP	4.1		4.840		83.8	21	129			

Sample ID: <b>2208879-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BES22-131 6'</b>	Batch ID: <b>69574</b>	RunNo: <b>90423</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>	SeqNo: <b>3228246</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	15	49.65	0	77.6	36.1	154	3.38	33.9	
Surr: DNOP	3.9		4.965		78.5	21	129	0	0	

Sample ID: <b>MB-69588</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>69588</b>	RunNo: <b>90394</b>								
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/18/2022</b>	SeqNo: <b>3231792</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		87.1	21	129			

**Qualifiers:**

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

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

WO#: 2208879

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>LCS-69588</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69588</b>		RunNo: <b>90394</b>							
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3231796</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	93.8	64.4	127			
Surr: DNOP	4.6		5.000		91.2	21	129			

Sample ID: <b>2208879-021AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-151 10'</b>	Batch ID: <b>69588</b>		RunNo: <b>90394</b>							
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3231797</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	14	48.08	12.42	84.1	36.1	154			
Surr: DNOP	4.4		4.808		91.8	21	129			

Sample ID: <b>2208879-021AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BES22-151 10'</b>	Batch ID: <b>69588</b>		RunNo: <b>90394</b>							
Prep Date: <b>8/17/2022</b>	Analysis Date: <b>8/19/2022</b>		SeqNo: <b>3231798</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	49.80	12.42	69.9	36.1	154	11.3	33.9	
Surr: DNOP	3.7		4.980		73.7	21	129	0	0	

**Qualifiers:**

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

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

WO#: 2208879

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>ics-69547</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69547</b>			RunNo: <b>90339</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>			SeqNo: <b>3223657</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	87.5	72.3	137			
Surr: BFB	2000		1000		205	37.7	212			

Sample ID: <b>mb-69547</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69547</b>			RunNo: <b>90339</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>			SeqNo: <b>3223658</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	37.7	212			

Sample ID: <b>mb-69551</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>69551</b>			RunNo: <b>90389</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>			SeqNo: <b>3225364</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		107	37.7	212			

Sample ID: <b>ics-69551</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>69551</b>			RunNo: <b>90389</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>			SeqNo: <b>3225365</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	72.3	137			
Surr: BFB	2200		1000		215	37.7	212			S

Sample ID: <b>2208879-018ams</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-148 10'</b>	Batch ID: <b>69551</b>			RunNo: <b>90389</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>			SeqNo: <b>3225367</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.30	0	110	70	130			
Surr: BFB	2100		971.8		214	37.7	212			S

Sample ID: <b>2208879-018amsd</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>BES22-148 10'</b>	Batch ID: <b>69551</b>			RunNo: <b>90389</b>						
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>			SeqNo: <b>3225368</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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2208879  
25-Aug-22

Client: Vertex Resources Services, Inc.  
Project: Routh SWD Tank Battery

Sample ID: 2208879-018amsd		SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range					
Client ID: BES22-148 10'		Batch ID: 69551			RunNo: 90389					
Prep Date: 8/16/2022		Analysis Date: 8/18/2022			SeqNo: 3225368		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.46	0	111	70	130	1.63	20	
Surr: BFB	2100		978.5		213	37.7	212	0	0	S

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 range due to dilution or matrix interference
- B

Analyte detected in the associated Method Blank
- E

Estimated value
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit

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

WO#: 2208879

25-Aug-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>lcs-69547</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69547</b>		RunNo: <b>90339</b>							
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>		SeqNo: <b>3223687</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	93.3	80	120			
Toluene	0.96	0.050	1.000	0	96.2	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: <b>mb-69547</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69547</b>		RunNo: <b>90339</b>							
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/17/2022</b>		SeqNo: <b>3223688</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	0.99		1.000		99.5	70	130			

Sample ID: <b>mb-69551</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>69551</b>		RunNo: <b>90389</b>							
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3225418</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	0.99		1.000		99.3	70	130			

Sample ID: <b>LCS-69551</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>69551</b>		RunNo: <b>90389</b>							
Prep Date: <b>8/16/2022</b>	Analysis Date: <b>8/18/2022</b>		SeqNo: <b>3225419</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	101	80	120			
Toluene	1.0	0.050	1.000	0	105	80	120			
Ethylbenzene	1.1	0.050	1.000	0	105	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.6	70	130			

**Qualifiers:**

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



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

WO#: 2208879

25-Aug-22

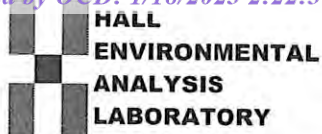
**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: 2208879-019ams	SampType: MS			TestCode: EPA Method 8021B: Volatiles						
Client ID: BES22-149 10'	Batch ID: 69551			RunNo: 90389						
Prep Date: 8/16/2022	Analysis Date: 8/18/2022			SeqNo: 3225423			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	0.9911	0	99.9	68.8	120			
Toluene	1.0	0.050	0.9911	0	104	73.6	124			
Ethylbenzene	1.0	0.050	0.9911	0	105	72.7	129			
Xylenes, Total	3.1	0.099	2.973	0	104	75.7	126			
Surr: 4-Bromofluorobenzene	0.99		0.9911		99.5	70	130			

Sample ID: 2208879-019amsd		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: BES22-149 10'		Batch ID: 69551		RunNo: 90389						
Prep Date: 8/16/2022		Analysis Date: 8/18/2022		SeqNo: 3225424		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9814	0	93.4	68.8	120	7.68	20	
Toluene	0.94	0.049	0.9814	0	96.3	73.6	124	9.02	20	
Ethylbenzene	0.93	0.049	0.9814	0	95.3	72.7	129	10.7	20	
Xylenes, Total	2.8	0.098	2.944	0	94.5	75.7	126	10.5	20	
Surr: 4-Bromofluorobenzene	0.97		0.9814		98.4	70	130	0	0	

**Qualifiers:**

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



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: 2208879

RcptNo: 1

Received By: Juan Rojas

8/13/2022 7:40:00 AM

Completed By: Tracy Casarrubias

8/13/2022 10:42:10 AM

Reviewed By: TMC

8/13/22

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted?

Checked by: JN 8/13/22

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Yes			

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

Chain-of-Custody Record									
Client: <u>Vertex (EOG)</u>		Turn-Around Time: <input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>5 Day</u>							
Mailing Address: <u>on file</u>		Project Name: <u>Routh SVD Tank Battery</u>							
Phone #: _____		Project #: <u>22E-00710</u>							
email or Fax#: _____		Project Manager: <u>Monica Peppin</u>							
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: <u>SPC</u>		On Ice: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temp (including CF): <u>0-10.1-20.5</u> (°C)		HEAL No. <u>2208879</u>	
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other _____		# of Coolers: <u>1</u>		Container Type and #		Preservative Type		HEAL No.	
<input type="checkbox"/> EDD (Type) _____									
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.			
8/11	10:00	Soil	BES22-131 6'	1 4oz jar	ice	001			
	10:05		BES22-132 6'			002			
	10:10		BES22-133 6'			003			
	10:15		BES22-134 6'			004			
	10:20		BES22-135 6'			005			
	10:25		BES22-136 6'			006			
	10:30		BES22-137 6'			007			
	10:35		BES22-138 6'			008			
	10:40		BES22-139 6'			009			
	10:45		BES22-140 6'			010			
	10:50		BES22-141 6'			011			
	10:55		BES22-142 6'			012			
Date:	Time:	Relinquished by:	Received by: _____ Via: _____ Date: _____ Time: _____						
8/11	17:03	Sally Carter	8/12/22 930						
Date:	Time:	Relinquished by:	Received by: _____ Via: _____ Date: _____ Time: _____						
8/12/22	1900	_____	8/13/22 7140						

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







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

September 26, 2022

Michael Moffitt

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Routh SWD Tank Battery

OrderNo.: 2209A31

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/21/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2209A31

Date Reported: 9/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WES22-05 0-4'

Project: Routh SWD Tank Battery

Collection Date: 9/19/2022 2:20:00 PM

Lab ID: 2209A31-001

Matrix: MEOH (SOIL)

Received Date: 9/21/2022 7:30:00 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	14		mg/Kg	1	9/21/2022 10:19:04 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/21/2022 10:19:04 AM
Surr: DNOP	89.4	21-129		%Rec	1	9/21/2022 10:19:04 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/21/2022 8:57:58 AM
Surr: BFB	95.5	37.7-212		%Rec	1	9/21/2022 8:57:58 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	9/21/2022 8:57:58 AM
Toluene	ND	0.039		mg/Kg	1	9/21/2022 8:57:58 AM
Ethylbenzene	ND	0.039		mg/Kg	1	9/21/2022 8:57:58 AM
Xylenes, Total	ND	0.078		mg/Kg	1	9/21/2022 8:57:58 AM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	9/21/2022 8:57:58 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	600	60		mg/Kg	20	9/21/2022 11:56:11 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		



## Analytical Report

Lab Order 2209A31

Date Reported: 9/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-133 6.5'

Project: Routh SWD Tank Battery

Collection Date: 9/19/2022 11:35:00 AM

Lab ID: 2209A31-002

Matrix: MEOH (SOIL)

Received Date: 9/21/2022 7:30:00 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	14		mg/Kg	1	9/21/2022 10:29:35 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/21/2022 10:29:35 AM
Surr: DNOP	87.3	21-129		%Rec	1	9/21/2022 10:29:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	9/21/2022 9:21:26 AM
Surr: BFB	98.0	37.7-212		%Rec	1	9/21/2022 9:21:26 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.017		mg/Kg	1	9/21/2022 9:21:26 AM
Toluene	ND	0.035		mg/Kg	1	9/21/2022 9:21:26 AM
Ethylbenzene	ND	0.035		mg/Kg	1	9/21/2022 9:21:26 AM
Xylenes, Total	ND	0.070		mg/Kg	1	9/21/2022 9:21:26 AM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	9/21/2022 9:21:26 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	2200	60		mg/Kg	20	9/21/2022 12:08:35 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 2 of 7

## Analytical Report

Lab Order 2209A31

Date Reported: 9/26/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BES22-134 6.5'

Project: Routh SWD Tank Battery

Collection Date: 9/19/2022 11:40:00 AM

Lab ID: 2209A31-003

Matrix: MEOH (SOIL)

Received Date: 9/21/2022 7:30:00 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	14		mg/Kg	1	9/21/2022 10:40:07 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/21/2022 10:40:07 AM
Surr: DNOP	77.2	21-129		%Rec	1	9/21/2022 10:40:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/21/2022 9:44:57 AM
Surr: BFB	95.5	37.7-212		%Rec	1	9/21/2022 9:44:57 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.021		mg/Kg	1	9/21/2022 9:44:57 AM
Toluene	ND	0.041		mg/Kg	1	9/21/2022 9:44:57 AM
Ethylbenzene	ND	0.041		mg/Kg	1	9/21/2022 9:44:57 AM
Xylenes, Total	ND	0.083		mg/Kg	1	9/21/2022 9:44:57 AM
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	9/21/2022 9:44:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JMT</b>
Chloride	3900	150		mg/Kg	50	9/21/2022 3:18:57 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	Estimated value
	H	Holding times for preparation 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 range due to dilution or matrix interference		

Page 3 of 7

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2209A31

26-Sep-22

Client: Vertex Resources Services, Inc.

Project: Routh SWD Tank Battery

Sample ID: MB-70315	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 70315	RunNo: 91197								
Prep Date: 9/21/2022	Analysis Date: 9/21/2022	SeqNo: 3264230	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-70315	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 70315	RunNo: 91197								
Prep Date: 9/21/2022	Analysis Date: 9/21/2022	SeqNo: 3264231	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

- Qualifiers:
- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2209A31

26-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>MB-70306</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>70306</b>		RunNo: <b>91191</b>							
Prep Date: <b>9/21/2022</b>	Analysis Date: <b>9/21/2022</b>		SeqNo: <b>3262758</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	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	21	129			

Sample ID: <b>LCS-70306</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>70306</b>		RunNo: <b>91191</b>							
Prep Date: <b>9/21/2022</b>	Analysis Date: <b>9/21/2022</b>		SeqNo: <b>3262759</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	15	50.00	0	104	64.4	127			
Surr: DNOP	4.8		5.000		96.0	21	129			

**Qualifiers:**

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

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

WO#: 2209A31

26-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-70296</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>70296</b>		RunNo: <b>91188</b>							
Prep Date: <b>9/20/2022</b>	Analysis Date: <b>9/21/2022</b>		SeqNo: <b>3263138</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	980		1000		98.4	37.7	212			

Sample ID: <b>lcs-70296</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>70296</b>		RunNo: <b>91188</b>							
Prep Date: <b>9/20/2022</b>	Analysis Date: <b>9/21/2022</b>		SeqNo: <b>3263139</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	105	72.3	137			
Surr: BFB	2000		1000		197	37.7	212			

**Qualifiers:**

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

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

WO#: 2209A31

26-Sep-22

**Client:** Vertex Resources Services, Inc.**Project:** Routh SWD Tank Battery

Sample ID: <b>mb-70296</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>70296</b>	RunNo: <b>91188</b>								
Prep Date: <b>9/20/2022</b>	Analysis Date: <b>9/21/2022</b>	SeqNo: <b>3263178</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		99.9	70	130			

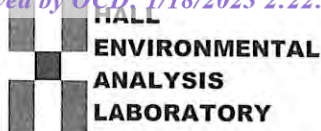
Sample ID: <b>LCS-70296</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>70296</b>	RunNo: <b>91188</b>								
Prep Date: <b>9/20/2022</b>	Analysis Date: <b>9/21/2022</b>	SeqNo: <b>3263179</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.8	80	120			
Toluene	0.94	0.050	1.000	0	94.4	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.6	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

**Qualifiers:**

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

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

## Sample Log-In Check List

Client Name: Vertex Resources  
Services, Inc.

Work Order Number: 2209A31

RcptNo: 1

Received By: Juan Rojas

9/21/2022 7:30:00 AM

*Juan Rojas*

Completed By: Cheyenne Cason

9/21/2022 8:04:40 AM

*Cason*

Reviewed By:

*7/21/2022 9/21/22*

*7/21/22*

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: *KPa 9.21.22*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Not Present			



**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 177221

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 177221
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2218654480 ROUTH DEEP SWD #2, thank you. This closure is approved.	5/18/2023