Incident Number:
nAB1911927632, nAPP2312445915

Release Assessment and Closure

Cotton Draw Unit 1-12 CTB

Section 12, Township 25 South, Range 31 East
API: 30-015-43275
County: Eddy
Vertex File Number: 23E-02423

Prepared for:
Devon Energy Production Company, LP

Prepared by:
Vertex Resource Services Inc.

Date:
November 2024

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Release Assessment and Closure
Cotton Draw Unit 1-12 CTB
Section 12, Township 25 South, Range 31 East
API: 30-015-43275
County: Eddy

Prepared for:
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Riley Plogger
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ENVIRONMENTAL TECHNICIAN, REPORTING

November 15, 2024
Date

Chad Hensley, B.Sc. GCNR
SENIOR PROJECT MANAGER, REPORT REVIEW

November 15, 2024
Date

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Table of Contents

1.0 Introduction 1

2.0 Incident Description 1

2.1 nAB1911927632, 2RP-5367 1

2.2 nAPP2312445915 1

3.0 Site Characteristics 1

4.0 Closure Criteria Determination 2

5.0 Remedial Actions Taken 4

5.1 Closure Denial 5

5.2 Corrective Actions 5

6.0 Closure Request 6

7.0 References 7

8.0 Limitations 8

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Received by OCD: 11/20/2024 10:11:07 AM

In-text Tables

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

List of Figures

Figure 1. Characterization Sampling Site Schematic
Figure 2. Confirmation Sampling Site Schematic

List of Tables

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

List of Appendices

Appendix A. Closure Criteria Research Documentation
Appendix B. Daily Field Reports
Appendix C. Laboratory Data Reports and Chain of Custody Forms
Appendix D. Depth to Groundwater Drilling

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Received by OCD: 11/20/2024 10:11:07 AM

1.0 Introduction

Devon Energy Production Company, LP (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for two separate produced water and crude oil releases that occurred on September 4, 2018, and September 29, 2019, Cotton Draw Unit 1-12 CTB API 30-015-43275 (hereafter referred to as the "site"). Devon submitted an initial C-141 Release Notifications to New Mexico Oil Conservation Division (NMOCD) District 2 on April 4, 2019, and September 29, 2019. Incident ID numbers nAB1911927632 (RP# 2RP-5367) and nAPP2312445915, were assigned to the respective incidents.

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

2.0 Incident Description

2.1 nAB1911927632, 2RP-5367

The release occurred on September 4, 2018, due to the 2-inch water dump washed out on one of the three phase separators. The incident was reported on April 4, 2019, and involved the release of approximately 6 barrels (bbl.) of crude oil and 1 bbl. of produced water on the pad site. Approximately 0 bbl. of crude oil and produced water was recovered during initial clean-up. Additional details relevant to the release are presented in the C-141 Report.

2.2 nAPP2312445915

The release occurred on September 29, 2019, when lightning struck the production tanks and caused a fire. The incident was reported on September 29, 2019, and involved the release of approximately 1,138 bbl. of produced water and 201 bbl. of oil on the pad site. Approximately 840 bbl. of free fluid was removed during the initial clean-up. Additional details relevant to the release are presented in the C-141 Report.

3.0 Site Characteristics

The site is located approximately 49 miles southeast of Carlsbad, New Mexico. The legal location for the site is Section 12, Township 25 South and Range 31 East in Eddy County, New Mexico. The release area is located on Bureau of Land Management property. An aerial photograph and site schematic are presented on Figure 1.

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

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2024) indicates the site's surface geology primarily comprises Eolian and piedmont deposits (Holocene to middle Pleistocene). The soil at the site

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is characterized as Pajarito loamy fine sand (United States Department of Agriculture, Natural Resources Conservation Service, 2024). Additional soil characteristics include a drainage class of well drained to somewhat excessively drained with a runoff class of moderate to moderately rapid. The karst geology potential for the site is low (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with fan piedmont and alluvial fans with elevations ranging between 2,800 to 5,000 feet. The climate is semiarid with average annual precipitation ranging between 8 and 13 inches. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be grasses and shrubs. Black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium*) dominate the historical plant community (United States Department of Agriculture, Natural Resources Conservation Service, 2024). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way and access road.

4.0 Closure Criteria Determination

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

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream (National Wetlands Inventory) located approximately 5.28 miles west of the site (United States Fish and Wildlife Service, 2024).

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

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Table 1. Closure Criteria Determination			
Site Name: Cotton Draw Unit 1-12 CTB			
Spill Coordinates: 32.143975,-103.732463		**X: 619542**	**Y: 3557098**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater (nearest reference)	**>55**	feet
	Distance between release and nearest DTGW reference	**1,594**	feet
		0.30	miles
	Date of nearest DTGW reference measurement	**February 6, 2024**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	27,893	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	87,648	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	36,205	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	2,839	feet
	ii) Within 1000 feet of any fresh water well or spring	-	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	9,552	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	**89,103**	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	**22,559**	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	**14,569**	feet
11	Soil Type	Pajarito	
12	Ecological Classification	loamy fine sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

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

Table 2. Closure Criteria for Soils Impacted by a Release

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

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

5.0 Remedial Actions Taken

Characterization of the two release areas was started February 3, 2020, and completed on June 26, 2023, which identified the area of the release specified in the initial C-141 Reports, estimated the approximate volume of the release and white lined the area required for the One Call request. The impacted area for Incident nAPP2312445915 was determined to be approximately 40,320 square feet in size. Samples BH20-01 through BH20-12 and BH23-13 through BH23-65 were established to characterize the release (Figure 1). The area of interest for incident nAB1911927632 was determined to be approximately 855 square feet in size. Samples BH23-66 through BH24-84 were established characterize the release (Figure 1). The Daily Field Reports (DFRs) associated with the site inspection are included in Appendix B. Characterization field screening and laboratory results are summarized in Table 3.

Remediation efforts began on June 28, 2024, and were finalized on July 16, 2024. Vertex personnel supervised the excavation of 1,528 square feet of impacted soil removed. Field screening was conducted and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Quantabs (chlorides). Field screening results were used to identify areas requiring further remediation. Soil was removed to a depth of 1 foot below the ground surface. Impacted soil was transported by a licensed waste hauler and disposed of at LeaLand, an approved waste management facility. Field screening results and DFRs documenting various phases of the remediation are presented in Appendix B.

Notification that confirmatory samples were being collected was provided to the NMOCD on July 11, 2024, for sampling on July 15, 2024. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 28 samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Eurofins in Albuquerque, New Mexico, under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 4, and the laboratory data reports are included in Appendix C. All confirmatory samples collected and analyzed were below closure criteria for the site.

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5.1 Closure Denial

On September 17, 2024, NMOCD rejected the closure report for the following reasons:

"Numerous samples listed on Table 3. Initial Characterization Field Screen and Laboratory Results are not illustrated on Figure 1, Characterization Sampling Site Schematic. Lab Order 2002448 has samples included that are not located on Table 3 or Figure 1. The samples are prefixed by SS20. Additionally, not all of the 2023 sample points are included on the map. The last sample included on the map is BH23-65. BH23-66 through BH23-84 are not illustrated on the map. All samples must be included on the table and figure to illustrate locations of samples collected that are above the remediation closure standards and locations of samples collected that are above the reclamation standards that must be addressed when the site is no longer reasonably needed for production or subsequent drilling activities. Additional remediation and/or additional volumes/square footage that will require reclamation may be required when all sample locations are illustrated on the map. The estimated volumes and square footage for soils that will be reclaimed in the remediation plan section of the C-141 must reflect the amount of soil that is above the reclamation standards that must be addressed when the site is no longer reasonably needed for production or subsequent drilling activities. This number will be different than the volume and square footage for soils that was reclaimed located in the remediation closure request section of the C-141 as this section should reflect the amount of soil that meets the reclamation standards due to the remediation being completed. Clarify if BH20-12 is mislabeled on the map as a borehole (Prefixed by "BH23-") instead of a Historic Borehole (Prefixed by "BH20-"). A possible typo was found on table BH23-37. The table indicates that the sample was collected at 4' but the chain of custody indicates that the sample was collected at 3'. The correct depth will need to be included in the report. Soil contamination sampling section of the C-141 is incorrect. The values in this section must reflect the highest observable value for each, in milligrams per kilograms, for each constituent. These values can be either investigation/delineation samples or closure samples depending on which sample set has the highest observable value. BH23-05 6' and BH23-09 6' are not included on the table. Include clarification if these samples correspond to BH20-05 6' and BH20-09 6' on the table and if these samples were collected from the location of the historic boreholes illustrated on the map."

On October 21, 2024, NMOCD rejected the closure report for the following reasons:

"The Remediation Closure Report is Denied. The Remediation Closure Report includes an inadequate number of confirmation floor samples. Please collect confirmation samples, representing no more than 200 ft2, unless a variance is requested/approved. Collect 5-point confirmation samples every 200 ft2 throughout the entire release area and not just at delineation sample point locations that show contaminants over closure criteria standards."

5.2 Corrective Actions

- Updated Table: SS20-01 through SS20-10, which were previously not included, have now been included in Table 3
- Updated Sample points in map: SS20-01 through SS20-10 and BH23-66 though BH23-84 have been included on Figure 1
- Reclamation Volumes updated
- Updated Map: BH23-20 updated on Figure 1

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- Table Typo: Sample Point BH23-37 at 4 feet was corrected to 3 feet as indicated on lab report Rpt_2305697
- Soil Contamination Sampling Values: Maximum Values updated on C-141
- Labels incorrect: BH23-05 at 6 feet and BH23-09 at 6 feet were taken from the historical boreholes BH20-05 and BH20-09 on June 22, 2023, and included as BH20-05 and BH20-09 in Table 3 but were mislabeled on the Chain of Custody forms that were sent to the lab as seen on Rpt_2306C86
- Collected two additional samples: one additional base sample was collected as sample point CS24-21, one sidewall sample was collected, and labeled as CWS24-08. The sidewall should have been labeled as CWS24-09 an asterisk shall note the change on re 2 and table 4.

6.0 Closure Request

The release area was fully delineated, remediated, and backfilled with local soils by August 1, 2024. 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 “50-100 feet to groundwater”. Based on these findings, Devon Energy Production Company, LP requests that this release be closed.

Should you have any questions or concerns, please do not hesitate to contact Chad Hensley at 575.200.6167 or Chensley@vertexresource.com

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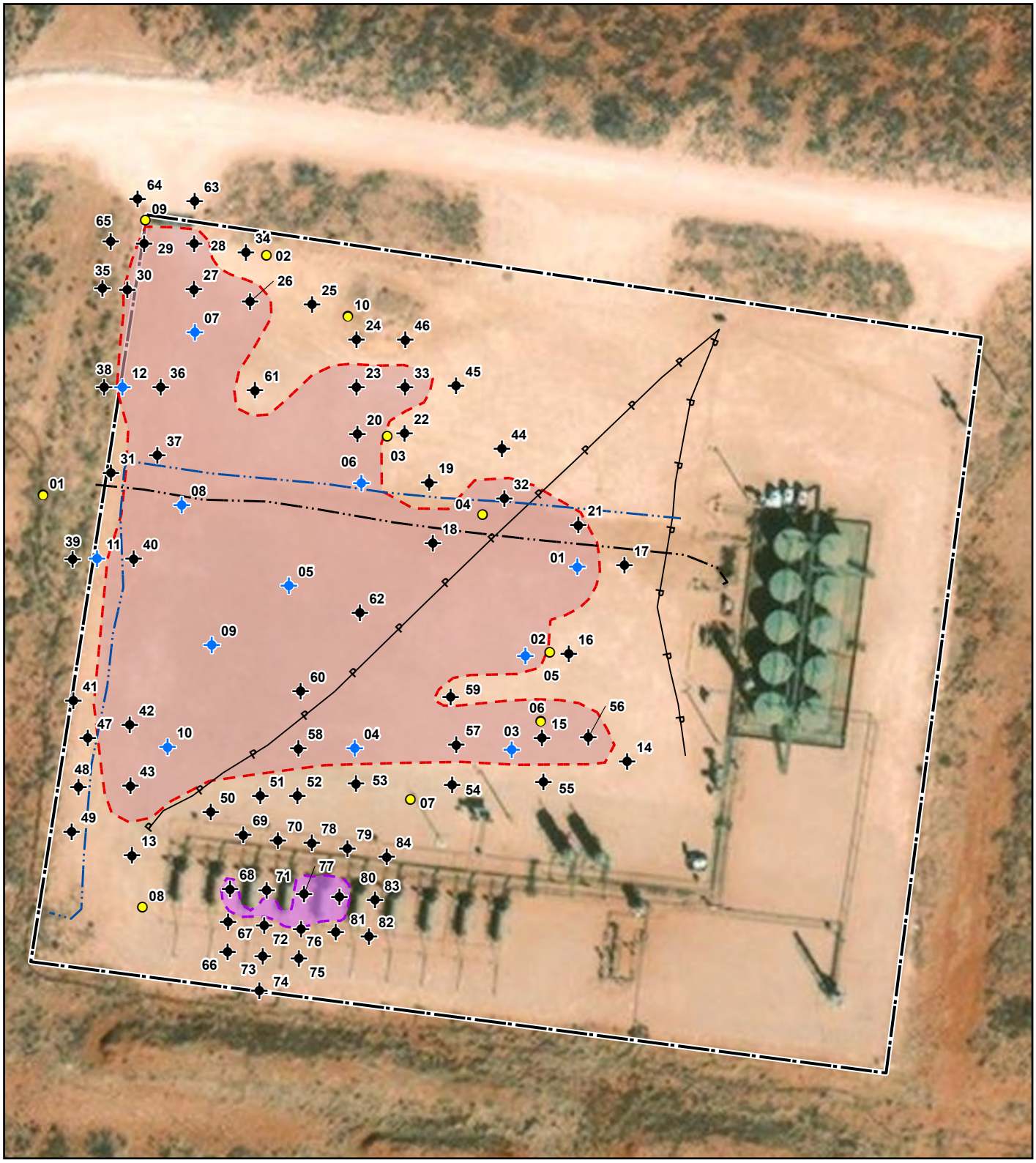
8.0 Limitations

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

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

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FIGURES



- Borehole (Prefixed by "BH23-")
- Borehole (Prefixed by "BH20-")
- Surface Sample (Prefixed by "SS20-")
- Underground Electric Line
- Underground Petroleum Pipeline
- Underground Water Pipeline
- Approximate Lease Boundary
- nAPP2312445915 Release Area (40,320 sq. ft.)
- nAB1911927632 Release Area (856 sq. ft.)

VERTEX

0 25 50 ft

NAD 1983 UTM Zone 13N

Date: Sep 30/24

Map Center:
Lat: 32.144258°N,
Long:103.732456°W

N

Characterization Sampling Site Schematic
Cotton Draw Unit 1-12 CTB

FIGURE: 1

devon

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

Note: Georeferenced image from Esri, 2023. Approximate lease boundary approximated from imagery by Vertex Professional Services Ltd. (VPS), 2024. Site features from GPS, VPS, 2024.

VERSATILITY. EXPERTISE.



- Base Sample (Prefixed by "CS24-")
- Wall Sample (Prefixed by "CWS24-")
- Approximate Lease Boundary
- Excavation to 1' bgs (~114 sq. ft. | 47 ft.)
- Excavation to 1' bgs (~180 sq. ft. | 54 ft.)
- Excavation to 1' bgs (~259 sq. ft. | 64 ft.)
- Excavation to 1' bgs (~653 sq. ft. | 106 ft.)
- Excavation to 1' bgs (~657 sq. ft. | 103 ft.)
- Excavation to 1' bgs (~676 sq. ft. | 108 ft.)
- Excavation to 1' bgs. (~762 sq. ft. | 111 ft.)

VERTEX

0 5 10 20 ft

NAD 1983 UTM Zone 13N
Date: Nov 01/24

Map Center:
Lat: 32.14424°N,
Long:103.732709°W

N

Confirmation Sampling Site Schematic
Cotton Draw Unit 1-12 CTB

FIGURE: 2

devon

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

Note: Georeferenced image from Esri, 2023. Site features from GPS, Vertex Professional Services Ltd., 2024.

VERSATILITY. EXPERTISE.

TABLES

Client Name: Devon Energy Production Company, LP
Site Name: Cotton Draw Unit 1-12 CTB
NMOCD Tracking #: nAB1911927632, nAPP2312445915
Project #: 23E-02423
Lab Reports: 2002448, 2305494, 2305593, 2305697, 2305754, 2305809, 2306C86, 2306D50 and 2306E09

Table 3. Characterization Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
			Depth to Groundwater 51-100' bgs										
SS20-01	0	Febuary 3, 2020	-	-	-	-	-	-	-	-	-	-	-
SS20-02	0	February 3, 2020	-	-	-	ND	ND	ND	82	93	82	175	ND
SS20-03	0	February 3, 2020	-	-	-	ND	ND	ND	31	ND	31	31	ND
SS20-04	0	February 3, 2020	-	-	-	-	-	-	-	-	-	-	-
SS20-05	0	February 3, 2020	-	-	-	ND	ND	ND	50	58	50	108	ND
SS20-06	0	February 3, 2020	-	-	-	-	-	-	-	-	-	-	-
SS20-07	0	February 3, 2020	-	-	-	-	-	-	-	-	-	-	-
SS20-08	0	February 3, 2020	-	-	-	ND	ND	ND	ND	ND	ND	ND	110
SS20-09	0	February 3, 2020	-	-	-	ND	ND	ND	120	160	120	280	ND
SS20-10	0	February 3, 2020	-	-	-	ND	ND	ND	650	730	650	1380	ND
BH20-01	0	February 3, 2020	-	-	1,295	-	-	-	-	-		-	-
	1	February 3, 2020	-	-	1,540	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	2,099	-	-	-	-	-	-	-	-
	2.5	February 3, 2020	-	-	1,776	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	2,317	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	32	586	-	-	-	-	-	-	-	-
	5	February 3, 2020	-	-	110	-	-	-	-	-	-	-	-
BH20-02	0	February 3, 2020	-	-	402	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	-	42	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	135	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	1,836	-	-	-	-	-	-	-	-
BH20-03	0	February 3, 2020	-	>1,500	ND	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	21	ND	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	75	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	42	-	-	-	-	-	-	-	-
	5	February 7, 2020	-	42	ND	ND	ND	ND	ND	ND	ND	ND	ND
	5.5	February 7, 2020	-	-	25	-	-	-	-	-	-	-	-
BH20-04	0	February 3, 2020	-	>1,500	436	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	18	ND	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	4.5	February 3, 2020	-	-	12	-	-	-	-	-	-	-	-
BH20-05	0	February 3, 2020	-	-	11,169	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	23	249	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	71	-	-	-	-	-	-	-	-
	5	February 3, 2020	-	-	6,497	-	-	-	-	-	-	-	-
	5.5	February 3, 2020	-	-	8,927	-	-	-	-	-	-	-	-
	6	June 22, 2023	0	71	330	ND	ND	ND	ND	ND	ND	ND	1,400
BH20-06	0	February 3, 2020	-	-	446	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	-	32	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	360	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	3,805	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	10,381	-	-	-	-	-	-	-	-
	5	February 3, 2020	-	-	5,768	-	-	-	-	-	-	-	-
BH20-07	0	February 3, 2020	-	>1,500	428	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	37	673	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	1,832	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	2,362	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	4,848	-	-	-	-	-	-	-	-
	5	February 3, 2020	-	-	230	-	-	-	-	-	-	-	-

VERTEX

Client Name: Devon Energy Production Company, LP
Site Name: Cotton Draw Unit 1-12 CTB
NMOCD Tracking #: nAB1911927632, nAPP2312445915
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Table 3. Characterization Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH20-08	0	February 3, 2020	-	-	6,508	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	-	1,172	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	25	451	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	148	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	998	-	-	-	-	-	-	-	-
BH20-09	0	February 3, 2020	-	-	8,441	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	-	2,187	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	2,490	-	-	-	-	-	-	-	-
	3	February 3, 2020	-		4,669	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	6,599	-	-	-	-	-	-	-	-
	6	June 22, 2023	0	67	333	ND	ND	ND	ND	ND	ND	ND	ND
BH20-10	0	February 3, 2020	-	>1,500	2,627	ND	ND	ND	1,500	1,300	**1,500**	**2,800**	480
	1	February 3, 2020	-	10	9	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	15	-	-	-	-	-	-	-	-
	4	February 3, 2020	-	-	58	-	-	-	-	-	-	-	-
	5	February 3, 2020	-	-	78	-	-	-	-	-	-	-	-
BH20-11	0	February 3, 2020	-	34	ND	-	-	-	-	-	-	-	-
	1	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
BH20-12	0	February 7, 2020	-	135	ND	ND	ND	ND	11	ND	11	11	ND
	1	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	2	February 3, 2020	-	-	ND	-	-	-	-	-	-	-	-
	3	February 3, 2020	-	-	12	-	-	-	-	-	-	-	-
BH23-13	0	May 8, 2023	2	45	343	ND	ND	ND	ND	ND	ND	ND	270
	2	May 8, 2023	1	32	186	ND	ND	ND	ND	ND	ND	ND	240
	4	May 8, 2023	1	86	567	ND	ND	ND	ND	ND	ND	ND	470
BH23-14	0	May 8, 2023	0	47	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 8, 2023	0	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 8, 2023	0	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-15	0	May 8, 2023	2	1,030	ND	ND	ND	ND	5,600	2,600	**5,600**	**8,200**	ND
	2	May 8, 2023	0	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 8, 2023	0	36	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-16	0	May 8, 2023	0	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 8, 2023	0	17	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 8, 2023	0	40	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-17	0	May 8, 2023	0	24	2	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 8, 2023	0	62	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 8, 2023	0	41	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-18	0	May 8, 2023	0	550	ND	ND	ND	ND	180	290	180	470	ND
	2	May 8, 2023	0	63	209	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 8, 2023	0	41	431	ND	ND	ND	ND	ND	ND	ND	170
BH23-19	0	May 8, 2023	0	36	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 8, 2023	0	81	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 8, 2023	0	66	135	ND	ND	ND	ND	ND	ND	ND	ND
BH23-20	0	May 8, 2023	0	>1500	46	ND	ND	ND	3,000	1,900	**3,000**	**4,900**	ND
	2	May 8, 2023	0	64	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 8, 2023	0	51	658	ND	ND	ND	11	ND	11	11	430
BH23-21	0	May 9, 2023	0	58	819	ND	ND	ND	ND	ND	ND	ND	610
	2	May 9, 2023	0	65	515	ND	ND	ND	ND	ND	ND	ND	430
	4	May 9, 2023	0	24	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-22	0	May 9, 2023	0	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	0	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 9, 2023	0	0	408	ND	ND	ND	ND	ND	ND	ND	230

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Table 3. Characterization Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-23	0	May 9, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 9, 2023	0	-	1,232	ND	ND	ND	ND	ND	ND	ND	960
BH23-24	0	May 9, 2023	0	35	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	0	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3	May 9, 2023	0	38	62	ND	ND	ND	ND	ND	ND	ND	200
BH23-25	0	May 9, 2023	1	18	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3	May 9, 2023	0	34	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-26	0	May 9, 2023	0	-	11	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	1	-	1	ND	ND	ND	ND	ND	ND	ND	220
	3	May 9, 2023	1	-	1,734	ND	ND	ND	ND	ND	ND	ND	1,900
BH23-27	0	May 9, 2023	12	-	3,531	ND	ND	ND	3,800	2,000	**3,800**	**5,800**	3,800
	2	May 9, 2023	0	-	949	ND	ND	ND	ND	ND	ND	ND	1,100
	4	May 9, 2023	2	-	2,268	ND	ND	ND	ND	ND	ND	ND	2,100
BH23-28	0	May 9, 2023	0	117	881	ND	ND	ND	ND	ND	ND	ND	970
	2	May 9, 2023	0	36	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 9, 2023	0	34	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-29	0	May 9, 2023	0	65	ND	ND	ND	ND	110	99	110	209	ND
	2	May 9, 2023	0	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 9, 2023	0	88	ND	ND	ND	ND	ND	ND	ND	ND	220
BH23-30	0	May 9, 2023	2	459	ND	ND	ND	ND	600	570	600	1,170	ND
	2	May 9, 2023	0	79	ND	ND	ND	ND	ND	ND	ND	ND	84
	3	May 9, 2023	0	78	255	ND	ND	ND	63	62	63	125	320
BH23-31	0	May 9, 2023	0	52	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 9, 2023	0	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 9, 2023	0	78	226	ND	ND	ND	ND	ND	ND	ND	380
BH23-32	0	May 10, 2023	0	-	1	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 10, 2023	0	-	2,185	ND	ND	ND	ND	ND	ND	ND	1,800
BH23-33	0	May 10, 2023	0	-	82	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3	May 10, 2023	0	-	1,946	ND	ND	ND	ND	ND	ND	ND	1,600
BH23-34	0	May 10, 2023	0	24	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	24	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3	May 10, 2023	0	41	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-35	0	May 10, 2023	0	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 10, 2023	0	46	132	ND	ND	ND	ND	ND	ND	ND	61
BH23-36	0	May 10, 2023	0	-	503	ND	ND	ND	31	ND	31	31	360
	2	May 10, 2023	0	-	796	ND	ND	ND	ND	ND	ND	ND	690
	4	May 10, 2023	0	-	3,091	ND	ND	ND	ND	ND	ND	ND	2,600
BH23-37	0	May 10, 2023	0	-	642	ND	ND	ND	460	470	460	930	650
	2	May 10, 2023	0	-	1,441	ND	ND	ND	ND	ND	ND	ND	1,400
	3	May 10, 2023	0	-	4,059	ND	ND	ND	ND	ND	ND	ND	4,200
BH23-38	0	May 10, 2023	0	35	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	28	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3'	May 10, 2023	0	58	ND	ND	ND	ND	ND	ND	ND	ND	110
BH23-39	0	May 10, 2023	0	43	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 10, 2023	0	61	ND	ND	ND	ND	ND	ND	ND	ND	97
BH23-40	0	May 10, 2023	0	-	2,306	ND	ND	ND	70	110	70	180	2,300
	2	May 10, 2023	0	-	2,345	ND	ND	ND	ND	ND	ND	ND	2,300
	3	May 10, 2023	0	-	3,629	ND	ND	ND	14	ND	14	14	2,700

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						Volatile		Extractable					
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			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-41	0	May 10, 2023	0	38	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	37	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 10, 2023	0	75	567	ND	ND	ND	ND	ND	ND	ND	470
BH23-42	0	May 10, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 10, 2023	0	-	50	ND	ND	ND	ND	ND	ND	ND	160
	4	May 10, 2023	0	-	2,802	ND	ND	ND	ND	ND	ND	ND	2,200
BH23-43	0	May 10, 2023	0	-	1,955	ND	ND	ND	ND	ND	ND	ND	2,100
	2	May 10, 2023	0	-	2,335	ND	ND	ND	ND	ND	ND	ND	2,400
	4	May 10, 2023	0	-	1,083	ND	ND	ND	ND	ND	ND	ND	1,100
BH23-44	0	May 11, 2023	0	34	199	ND	ND	ND	ND	ND	ND	ND	84
	2	May 11, 2023	0	37	265	ND	ND	ND	ND	ND	ND	ND	180
	3.5	May 11, 2023	0	34	633	ND	ND	ND	ND	ND	ND	ND	370
BH23-45	0	May 11, 2023	0	27	129	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	49	90	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 11, 2023	0	50	199	ND	ND	ND	ND	ND	ND	ND	95
BH23-46	0	May 11, 2023	0	39	233	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	69	76	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 11, 2023	0	42	471	ND	ND	ND	ND	ND	ND	ND	370
BH23-47	0	May 11, 2023	0	58	484	ND	ND	ND	ND	ND	ND	ND	310
	2	May 11, 2023	0	82	470	ND	ND	ND	ND	ND	ND	ND	330
	4	May 11, 2023	0	77	334	ND	ND	ND	ND	ND	ND	ND	270
BH23-48	0	May 11, 2023	0	36	38	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	39	28	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	50	66	ND	ND	ND	ND	ND	ND	ND	ND
BH23-49	0	May 11, 2023	0	38	44	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	38	8	ND	ND	ND	ND	ND	ND	ND	ND
BH23-50	0	May 11, 2023	0	42	207	ND	ND	ND	ND	ND	ND	ND	88
	2	May 11, 2023	0	44	38	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	47	191	ND	ND	ND	ND	ND	ND	ND	ND
BH23-51	0	May 11, 2023	0	50	128	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	40	44	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	22	34	ND	ND	ND	ND	ND	ND	ND	ND
BH23-52	0	May 11, 2023	0	34	96	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	28	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	18	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-53	0	May 11, 2023	0	43	147	ND	ND	ND	ND	ND	ND	ND	89
	2	May 11, 2023	0	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	36	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-54	0	May 11, 2023	0	36	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 11, 2023	0	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 11, 2023	0	43	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-55	0	May 12, 2023	0	63	ND	ND	ND	ND	12	ND	12	12	ND
	2	May 12, 2023	0	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	43	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-56	0	May 12, 2023	0	580	ND	ND	ND	ND	400	250	400	650	ND
	2	May 12, 2023	0	45	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	60	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-57	0	May 12, 2023	0	521	ND	ND	ND	ND	260	190	260	450	ND
	2	May 12, 2023	0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-58	0	May 12, 2023	0	173	77	ND	ND	ND	84	88	84	172	160
	2	May 12, 2023	0	75	243	ND	ND	ND	ND	ND	ND	ND	300
	4	May 12, 2023	0	34	ND	ND	ND	ND	ND	ND	ND	ND	ND

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			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-59	0	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-60	0	May 12, 2023	0	562	ND	ND	ND	ND	270	320	270	590	ND
	2	May 12, 2023	0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	47	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-61	0	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3.5	May 12, 2023	0	-	444	ND	ND	ND	ND	ND	ND	ND	430
	6	June 22, 2023	0	33	360	ND	ND	ND	ND	ND	ND	ND	ND
BH23-62	0	May 12, 2023	0	-	ND	ND	ND	ND	41	82	41	123	ND
	2	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	May 12, 2023	0	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-63	0	June 22, 2023	0	28	205	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 22, 2023	0	31	200	ND	ND	ND	ND	ND	ND	ND	ND
BH23-64	0	June 22, 2023	0	29	240	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 22, 2023	0	23	255	ND	ND	ND	ND	ND	ND	ND	ND
BH23-65	0	June 22, 2023	0	14	245	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 22, 2023	0	17	233	ND	ND	ND	ND	ND	ND	ND	ND
BH23-66	0	June 24, 2023	0	34	245	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 24, 2023	0	26	152	ND	ND	ND	ND	ND	ND	ND	ND
BH23-67	0	June 24, 2023	0	35	195	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 24, 2023	0	12	157	ND	ND	ND	ND	ND	ND	ND	ND
BH23-68	0	June 24, 2023	0	47	1,345	ND	ND	ND	ND	ND	ND	ND	1,000
	2	June 24, 2023	0	70	405	ND	ND	ND	ND	ND	ND	ND	300
BH23-69	0	June 24, 2023	0	35	328	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 24, 2023	0	30	212	ND	ND	ND	ND	ND	ND	ND	ND
BH23-70	0	June 24, 2023	0	30	232	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 24, 2023	0	11	270	ND	ND	ND	ND	ND	ND	ND	ND
BH23-71	0	June 24, 2023	0	63	337	ND	ND	ND	ND	ND	ND	ND	240
	2	June 24, 2023	0	18	192	ND	ND	ND	ND	ND	ND	ND	ND
	4	June 24, 2023	0	30	187	ND	ND	ND	ND	ND	ND	ND	ND
BH23-72	0	June 24, 2023	0	36	307	ND	ND	ND	ND	ND	ND	ND	82
	2	June 24, 2023	0	25	255	ND	ND	ND	ND	ND	ND	ND	70
	4	June 24, 2023	0	45	200	ND	ND	ND	ND	ND	ND	ND	ND
BH23-73	0	June 24, 2023	0	45	272	ND	ND	ND	ND	ND	ND	ND	98
	2	June 24, 2023	0	74	275	ND	ND	ND	ND	ND	ND	ND	160
BH23-74	0	June 24, 2023	0	91	233	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 24, 2023	0	60	217	ND	ND	ND	ND	ND	ND	ND	ND
BH23-75	0	June 25, 2023	0	23	182	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 25, 2023	0	35	197	ND	ND	ND	ND	ND	ND	ND	ND
BH23-76	0	June 25, 2023	0	51	810	ND	ND	ND	ND	ND	ND	ND	510
	2	June 25, 2023	0	32	187	ND	ND	ND	ND	ND	ND	ND	130
	4	June 25, 2023	0	36	230	ND	ND	ND	ND	ND	ND	ND	87
BH23-77	0	June 25, 2023	0	650	217	ND	ND	ND	1,000	860	1,000	1,860	ND
	2	June 25, 2023	0	20	158	ND	ND	ND	ND	ND	ND	ND	ND
	4	June 25, 2023	0	33	215	ND	ND	ND	ND	ND	ND	ND	92
BH23-78	0	June 25, 2023	0	31	295	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 25, 2023	0	13	142	ND	ND	ND	ND	ND	ND	ND	ND
BH23-79	0	June 26, 2023	0	39	180	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 26, 2023	0	32	153	ND	ND	ND	ND	ND	ND	ND	100
BH23-80	0	June 26, 2023	22	1,004	180	ND	ND	ND	3,000	1,700	**3,000**	**4,700**	61
	2	June 26, 2023	0	35	178	ND	ND	ND	ND	ND	ND	ND	92
	4	June 26, 2023	0	31	550	ND	ND	ND	ND	ND	ND	ND	210

Client Name: Devon Energy Production Company, LP
Site Name: Cotton Draw Unit 1-12 CTB
NMOCD Tracking #: nAB1911927632, nAPP2312445915
Project #: 23E-02423
Lab Reports: 2002448, 2305494, 2305593, 2305697, 2305754, 2305809, 2306C86, 2306D50 and 2306E09

Table 3. Characterization Laboratory Results

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-81	0	June 26, 2023	0	30	212	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 26, 2023	0	37	120	ND	ND	ND	ND	ND	ND	ND	ND
BH23-82	0	June 26, 2023	0	21	200	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 26, 2023	0	30	173	ND	ND	ND	ND	ND	ND	ND	ND
BH23-83	0	June 26, 2023	0	35	325	ND	ND	ND	ND	ND	ND	ND	110
	2	June 26, 2023	0	23	177	ND	ND	ND	ND	ND	ND	ND	ND
BH23-84	0	June 26, 2023	0	41	257	ND	ND	ND	ND	ND	ND	ND	ND
	2	June 26, 2023	0	38	300	ND	ND	ND	ND	ND	ND	ND	61

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

Client Name: Devon Energy Production Company, LP
Site Name: Cotton Draw Unit 1-12 CTB
NMOCD Tracking #: nAB1911927632, nAPP2312445915
Project #: 23E-02423
Lab Reports: 885-7227-1 and 01058-0007

Table 4. Confirmatory Sample Field Screen and Laboratory Results

Sample Description			Petroleum Hydrocarbons						Inorganic
			Volatile		Extractable				
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
			Depth to Groundwater 51-100 feet bgs						
Backfill-01	0	June 28, 2024	ND	ND	ND	ND	ND	ND	60
Backfill-02	0	June 28, 2024	ND	ND	ND	ND	ND	ND	74
CW24-01	0-1	July 16, 2024	ND	ND	ND	32	ND	ND	ND
CW24-02	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-03	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-04	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-05	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-06	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-07	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CW24-08	0-1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CSW24-08*	-	-	-	-	-	-	-	-	-
CWS24-09	0-1	October 30, 2024	ND	ND	ND	ND	ND	ND	48.6
CS24-01	1	July 16, 2024	ND	ND	ND	10	ND	10	ND
CS24-02	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-03	1	July 16, 2024	ND	ND	ND	390	230	ND	ND
CS24-04	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-05	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-06	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-07	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-08	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-09	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-10	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-11	1	July 16, 2024	ND	ND	ND	ND	ND	ND	1200
CS24-12	1	July 16, 2024	ND	ND	ND	ND	ND	ND	310
CS24-13	1	July 16, 2024	ND	ND	ND	ND	ND	ND	530
CS24-14	1	July 16, 2024	ND	ND	ND	ND	ND	ND	66
CS24-15	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-16	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-17	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-18	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-19	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-20	1	July 16, 2024	ND	ND	ND	ND	ND	ND	ND
CS24-21	1	October 30, 2024	ND	ND	ND	ND	ND	ND	ND

APPENDIX A – Closure Criteria Research Documentation

Table 1. Closure Criteria Determination			
Site Name: Cotton Draw Unit 1-12 CTB			
Spill Coordinates: 32.143975,-103.732463		X: 619542	Y: 3557098
Site Specific Conditions		Value	Unit
1	Depth to Groundwater (nearest reference)	**>55**	feet
	Distance between release and nearest DTGW reference	**1,594**	feet
		0.30	miles
	Date of nearest DTGW reference measurement	**February 6, 2024**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	27,893	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	87,648	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	36,205	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	2,839	feet
	ii) Within 1000 feet of any fresh water well or spring	2, 3	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	9,552	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	**89,103**	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	**22,559**	feet
10	Within a 100-year Floodplain	500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	**1,144**	feet
11	Soil Type	Pajarito	
12	Ecological Classification	loamy fine sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

OSE POD Location Map



3/14/2024, 9:27:52 AM

Override 1

GIS WATERS PODs

- Active
- Pending
- Plugged

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Maxar

Online web user

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

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

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

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

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04792 POD1	CUB	ED	1	3	4	12	25S	31E	619688	3556651	487	55		
C 04635 POD1	CUB	ED	4	3	4	01	25S	31E	619958	3558078	1047	55		
C 03830 POD1	CUB	ED	4	2	4	02	25S	31E	618632	3558432	1599	450		
C 02570	CUB	ED	4	2	4	02	25S	31E	618704	3558489*	1607	895		
C 02568	CUB	ED	4	3	1	01	25S	31E	619103	3558892*	1828	1025		
C 02569	CUB	ED	4	4	2	02	25S	31E	618699	3558891*	1963	1016		
C 04620 POD1	CUB	LE	4	3	4	06	25S	32E	621445	3558018	2106	55		
C 02573	CUB	ED	1	4	2	02	25S	31E	618499	3559091*	2232			
C 02572	CUB	ED	4	2	2	02	25S	31E	618695	3559294*	2335	852		
C 02571	CUB	ED	4	1	2	02	25S	31E	618292	3559294*	2509	860		
C 04618 POD1	CUB	LE	3	4	3	18	25S	32E	621041	3554886	2687	55		
C 04722 POD2	CUB	LE	2	1	1	06	25S	32E	620808	3559499	2698	55		
C 02574	CUB	ED	1	1	2	02	25S	31E	618092	3559494*	2783			
C 04632 POD1	CUB	ED	1	2	2	10	25S	31E	616802	3557964	2866	55		
C 04795 POD1	CUB	LE	4	4	1	08	25S	32E	622865	3557423	3337			
C 04593 POD1	CUB	ED	3	4	4	34	24S	31E	616903	3559674	3674	55		
C 04654 POD1	CUB	ED	3	3	4	25	24S	31E	619764	3561226	4115	55		
C 04636 POD1	CUB	ED	3	4	3	25	24S	31E	619200	3561279	4176			
C 04643 POD1	C	ED	4	2	2	05	23S	27E	619200	3561279	4176	305	135	170
C 04633 POD1	CUB	ED	2	1	1	35	24S	31E	617394	3561170	4586			

***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
NA	CP 01985 POD1	2	4	2	17	19S	31E	604666	3614438

Driller License: 1184 **Driller Company:** WEST TEXAS WATER WELL SERVICE

Driller Name: RUSSELL SOUTHERLAND

Drill Start Date:	01/18/2024	**Drill Finish Date:**	01/18/2024	**Plug Date:**	
Log File Date:	02/05/2024	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	55 feet	**Depth Water:**	

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U.S. Fish and Wildlife Service
National Wetlands Inventory

Cotton Draw Unit 1-12 CTB
Watercourse 27,893ft



August 31, 2024

Wetlands

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

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

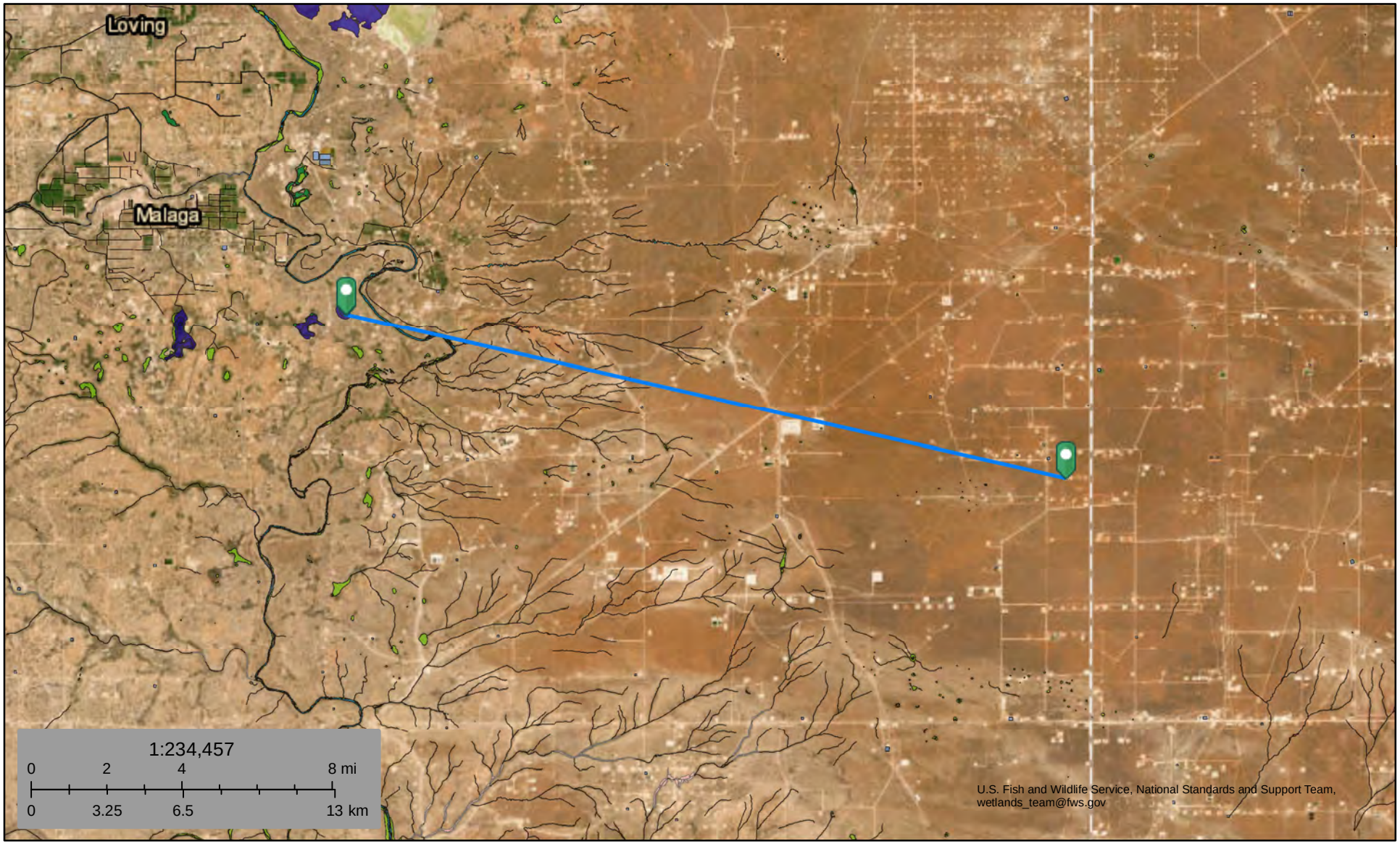
National Wetlands Inventory (NWI)
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U.S. Fish and Wildlife Service
National Wetlands Inventory

Cotton Draw Unit1-12 CTB
Lake 87,648ft



April 27, 2023

Wetlands

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

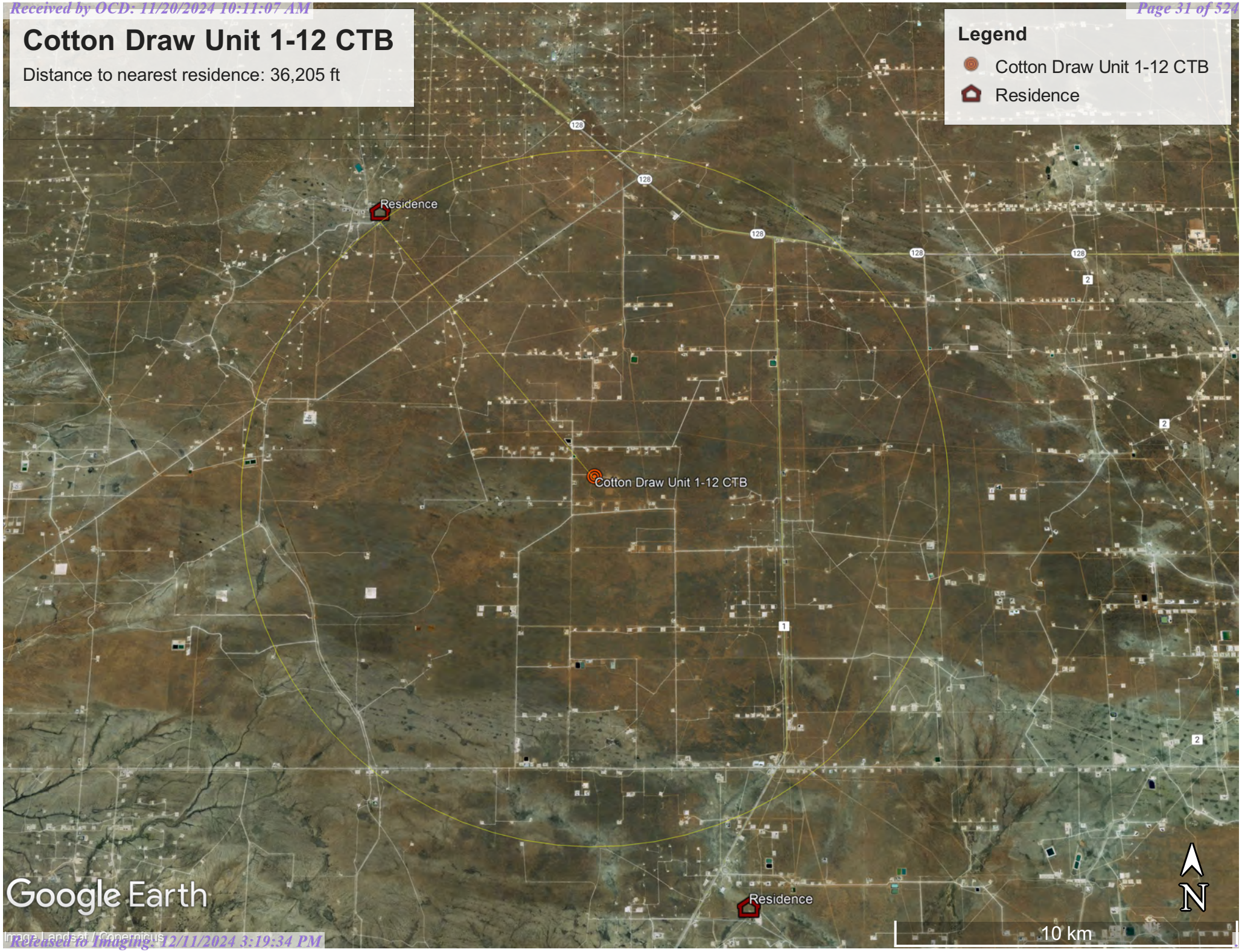
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National Wetlands Inventory (NWI)
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Cotton Draw Unit 1-12 CTB

Distance to nearest residence: 36,205 ft



Active & Inactive Points of Diversion

(with Ownership Information)

		(acre ft per annum)				(R=POD has been replaced and no longer serves this file, C=the file is closed)				(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)			(meters)
WR File Nbr	**Sub basin**	**Use**	**Diversion**	**Owner**	**County**	**POD Number**	**Well Tag**	**Code**	**Grant**	**Source**	**q64**	**q16**	**q4**	**Sec**	**Tws**	**Range**	**X**	**Y**	**Map**	**Distance**
C 04792	CUB	MON	0.000	DEVON ENERGY RESOURCES	ED	C 04792 POD1	NA				NW	SW	SE	12	25S	31E	619687.5	3556651.9		469.2
C 02245	C	STK	3.000	TWIN WELLS RANCH LLC	ED	C 02245						NW	NW	12	25S	31E	619018.0	3557785.0 *		864.0
C 04635	CUB	EXP	0.000	DEVON ENERGY	ED	C 04635 POD1	NA				SE	SW	SE	01	25S	31E	619957.6	3558078.3		1,064.8

Record Count: 3

Filters Applied:

UTM Filters (in meters):
Easting: 619542
Northing: 3557098
Radius: 1610.0

Sorted By: Distance

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

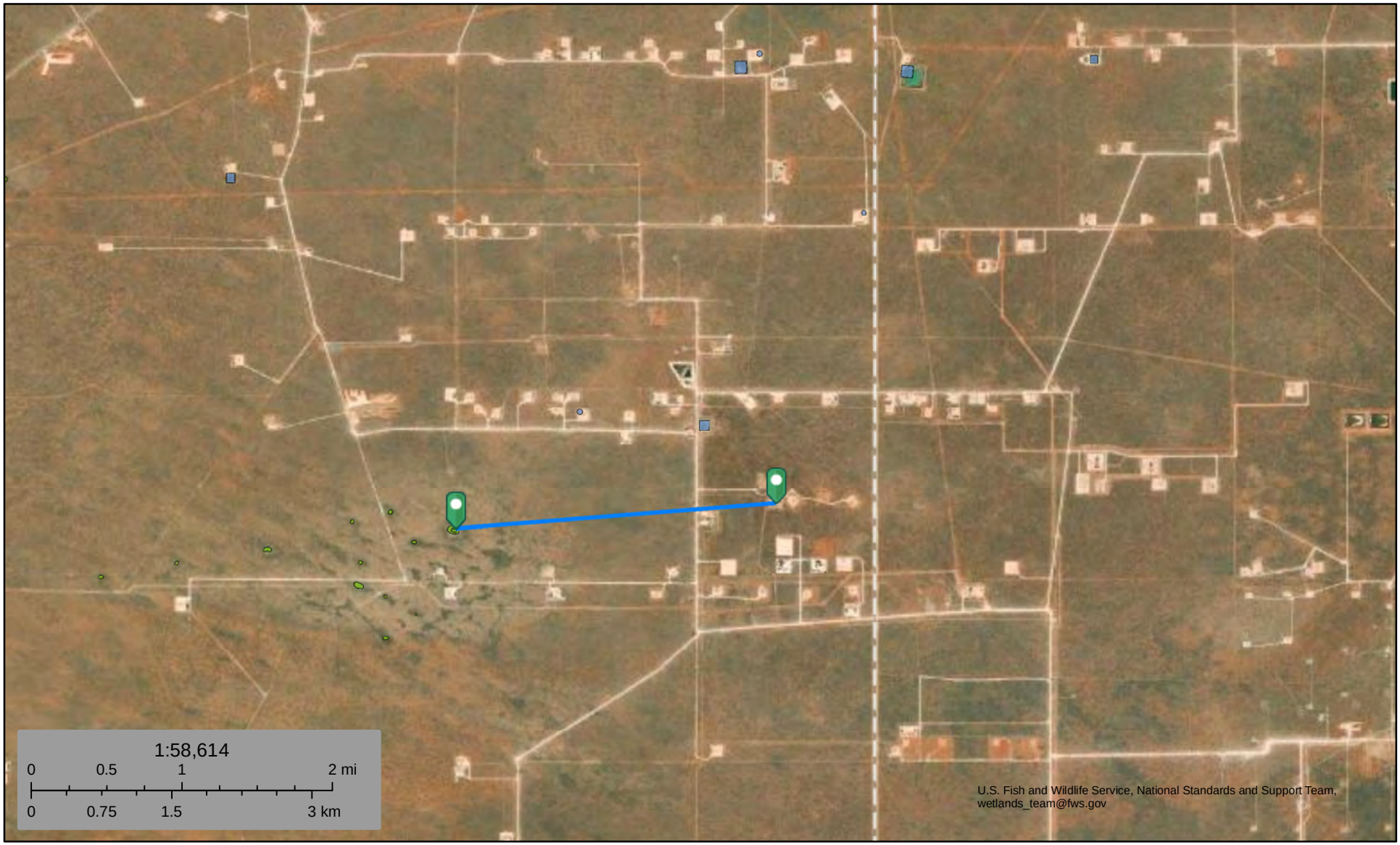
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U.S. Fish and Wildlife Service
National Wetlands Inventory

Cotton Draw Unit1-12CTB
Wetland 9,552ft



April 27, 2023

Wetlands

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

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National Wetlands Inventory (NWI)
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Cotton Draw 1-12 CTB Mines 89,103ft



3/22/2024, 3:34:09 PM

1:288,895

0 2 4 8 mi

0 3.25 6.5 13 km

Registered Mines

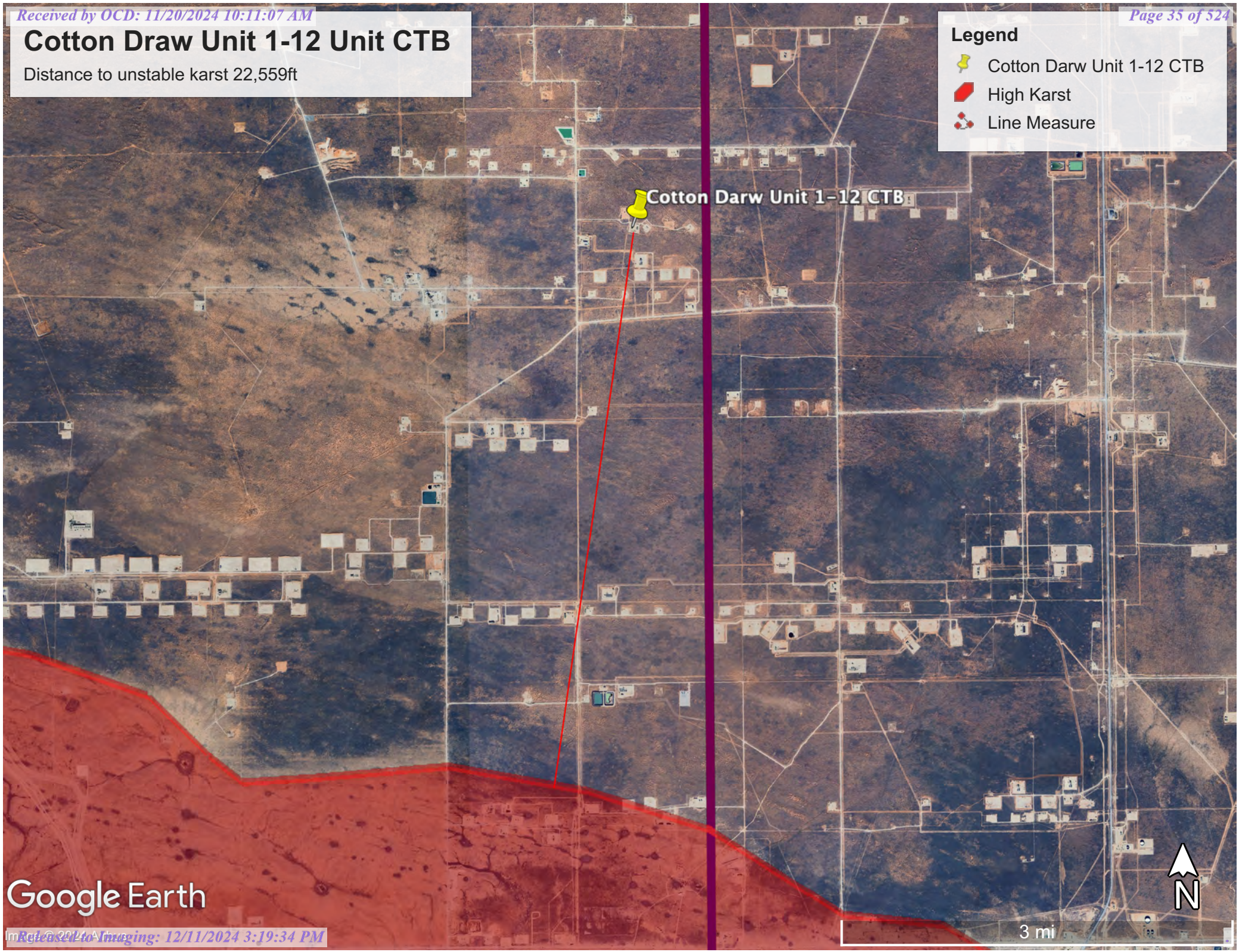
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Potash
- Salt

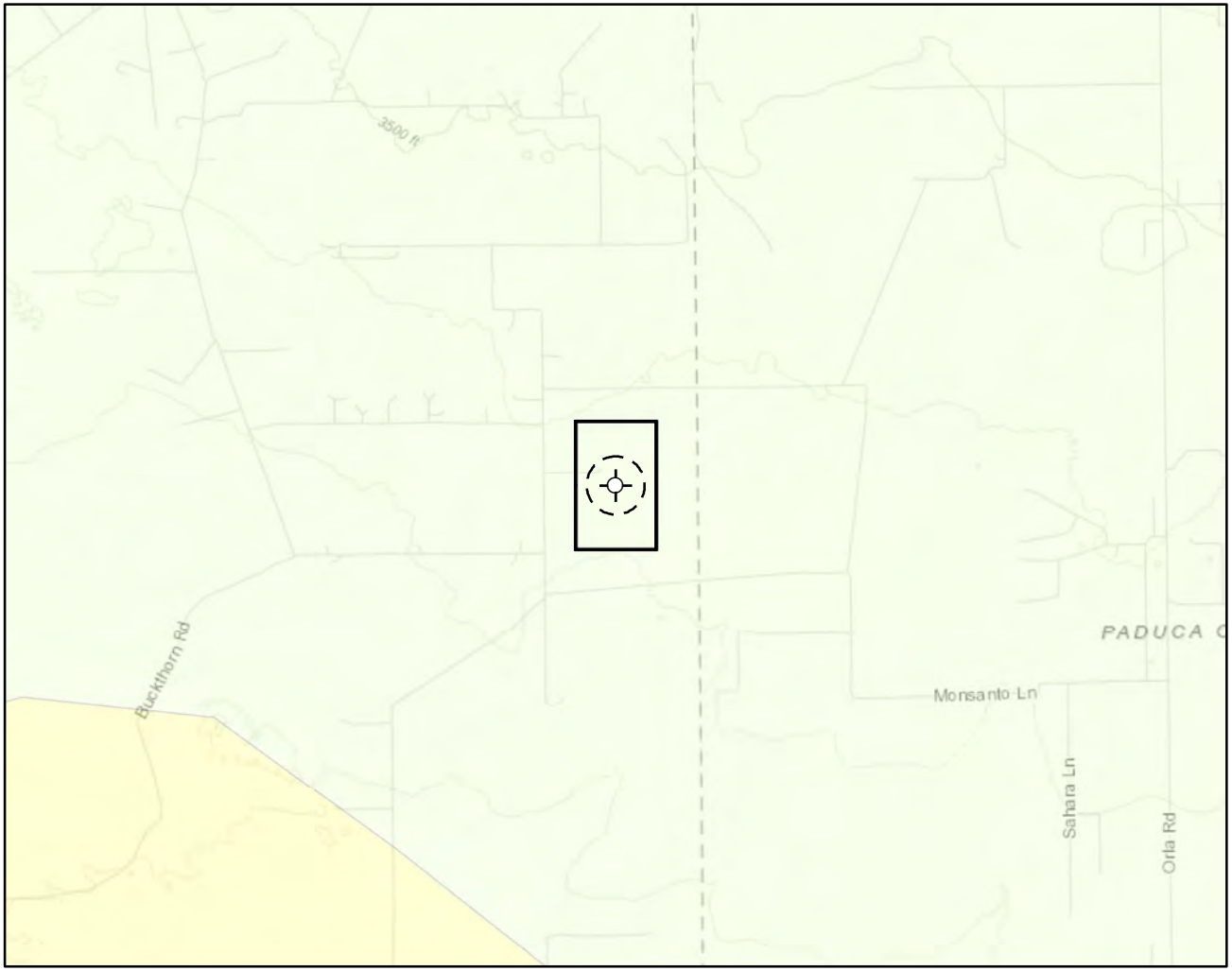
Earthstar Geographics

EMNRD MMD GIS Coordinator

Cotton Draw Unit 1-12 Unit CTB

Distance to unstable karst 22,559ft





Overview Map

0 0.25 0.5 1 mi



Detail Map

0 150 300 600 ft.

Karst Potential

- Critical
- High
- Medium
- Low

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

VERTEX

Map Center:
Lat/Long: 32.143975, -103.732000

NAD 1983 UTM Zone 13N
Date: Apr 28/23

N

Karst Potential Schematic
Cotton Draw Unit 1-12 CTB

FIGURE:
X

devon

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

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

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2023\23E-02423 - Cotton Draw Unit 1\Figure X Karst Potential Schematic Cotton Draw Unit 1(23E-02423)1.mxd

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National Flood Hazard Layer FIRMette

FEMA

103°44'16"W 32°8'54"N



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

1:6,000

103°43'38"W 32°8'23"N

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
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/27/2023 at 11:10 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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Cotton Draw Unit 1-12 Unit CTB

Distance to FEMA Flood Zone A: 14,569 ft

Legend

- FEMA Flood Zone A
- Cotton Draw Unit 1-12 CTB
- Line Measure

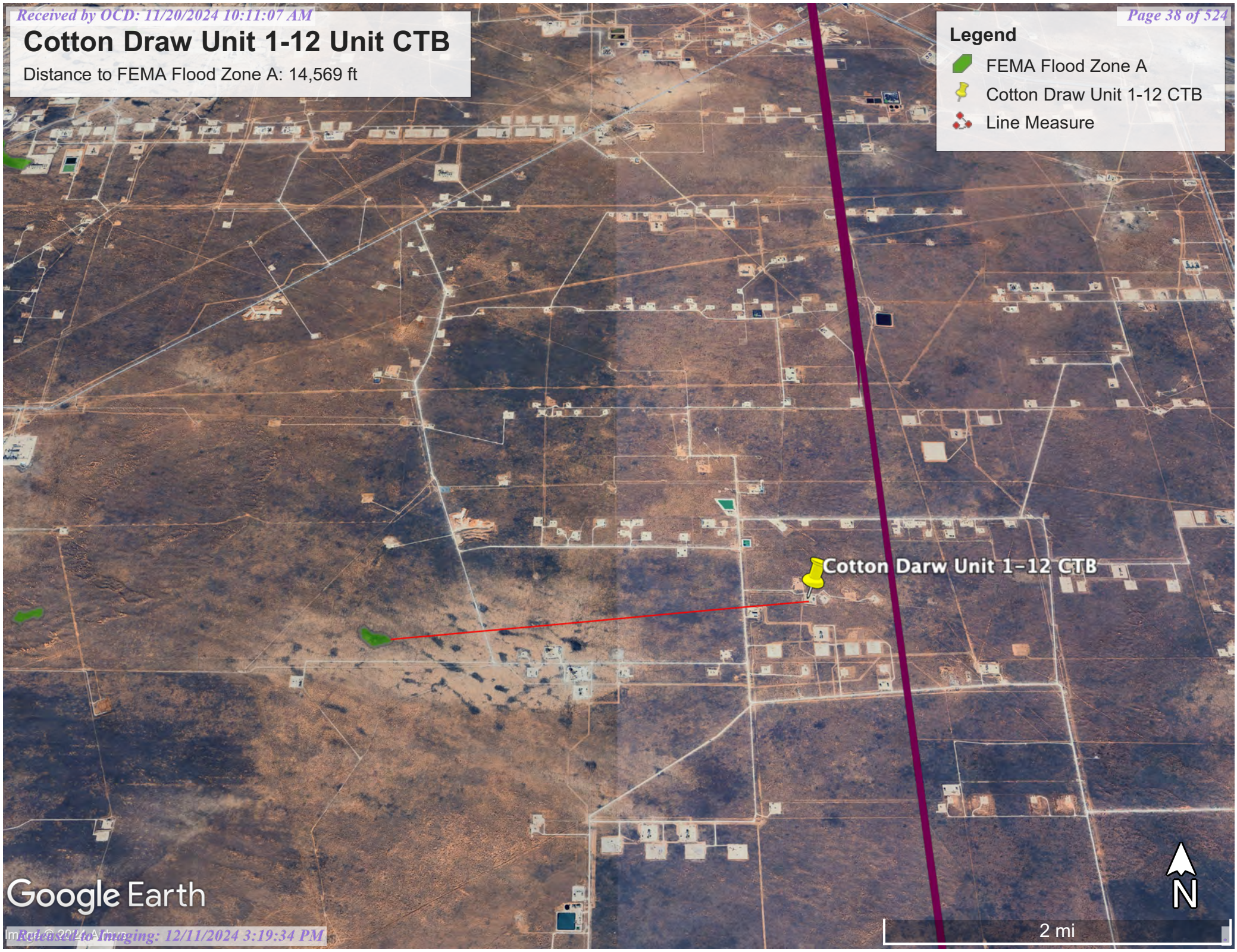


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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Eddy Area, New Mexico



April 27, 2023

Preface

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

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

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

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

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

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

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Eddy Area, New Mexico.....13
PA—Pajarito loamy fine sand, 0 to 3 percent slopes, eroded.....13
References.....15

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, Sep 8, 2022

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

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PA	Pajarito loamy fine sand, 0 to 3 percent slopes, eroded	7.2	100.0%
Totals for Area of Interest		**7.2**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

Eddy Area, New Mexico

PA—Pajarito loamy fine sand, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w54
Elevation: 2,700 to 5,500 feet
Mean annual precipitation: 5 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Pajarito

Setting

Landform: Plains, interdunes, dunes
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 13 inches: loamy fine sand
H2 - 13 to 36 inches: fine sandy loam
H3 - 36 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Berino

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

Wink

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

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USDA Natural Resources Conservation Service

Ecological site R070BD003NM
Loamy Sand

Accessed: 04/27/2023

General information

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

Figure 1. Mapped extent

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

Associated sites

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

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

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

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

Table 2. Representative physiographic features

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

Climatic features

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

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

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

Table 3. Representative climatic features

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

Influencing water features

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

Soil features

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

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

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

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

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

Characteristic soils are:
Maljamar
Berino
Parjarito
Palomas
Wink
Pyote

Table 4. Representative soil features

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

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

Ecological dynamics

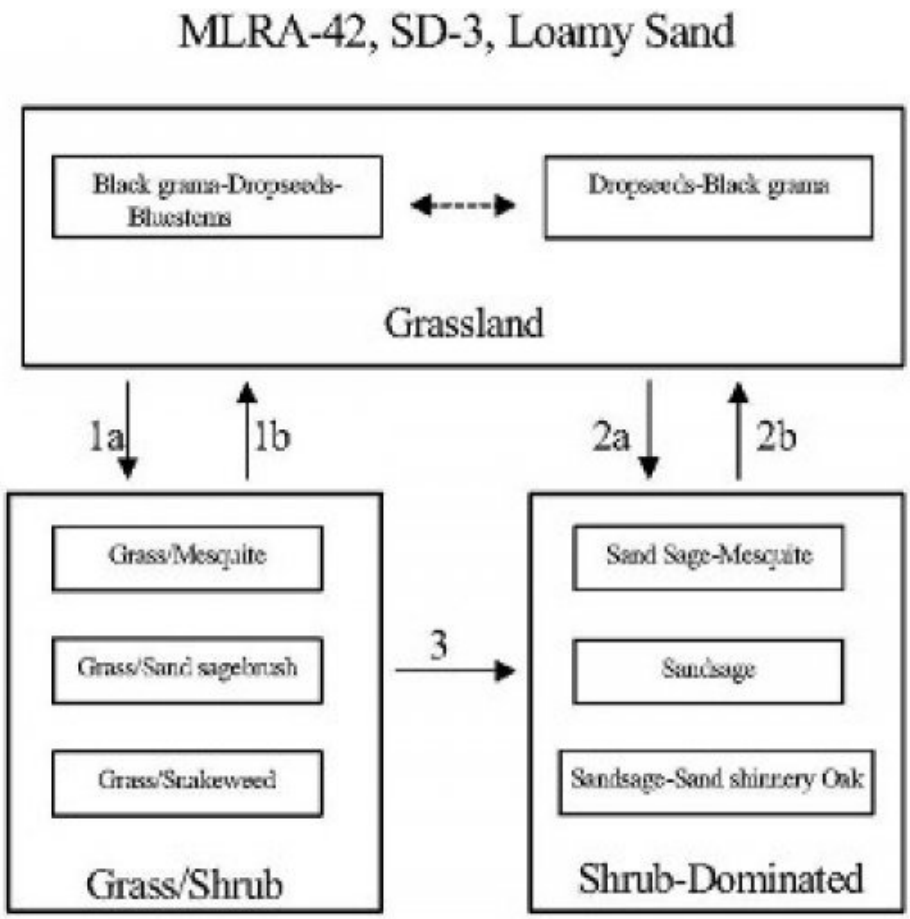
Overview

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

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

State and transition model

Plant Communities and Transitional Pathways (diagram):



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

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

3. Continued loss of grass cover, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

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

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

Table 5. Annual production by plant type

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

Table 6. Ground cover

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

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

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

State 2
Grass/Shrub

Community 2.1
Grass/Shrub



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

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

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

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

Additional community tables

Table 7. Community 1.1 plant community composition

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

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

Animal community

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

Hydrological functions

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

Recreational uses

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

Wood products

This site has no potential for wood products.

Other products

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

Other information

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

Inventory data references

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

Other references

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Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

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

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

Indicators

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

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

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

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

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

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

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

---

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

---

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

---

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

---

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

---

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

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

---

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

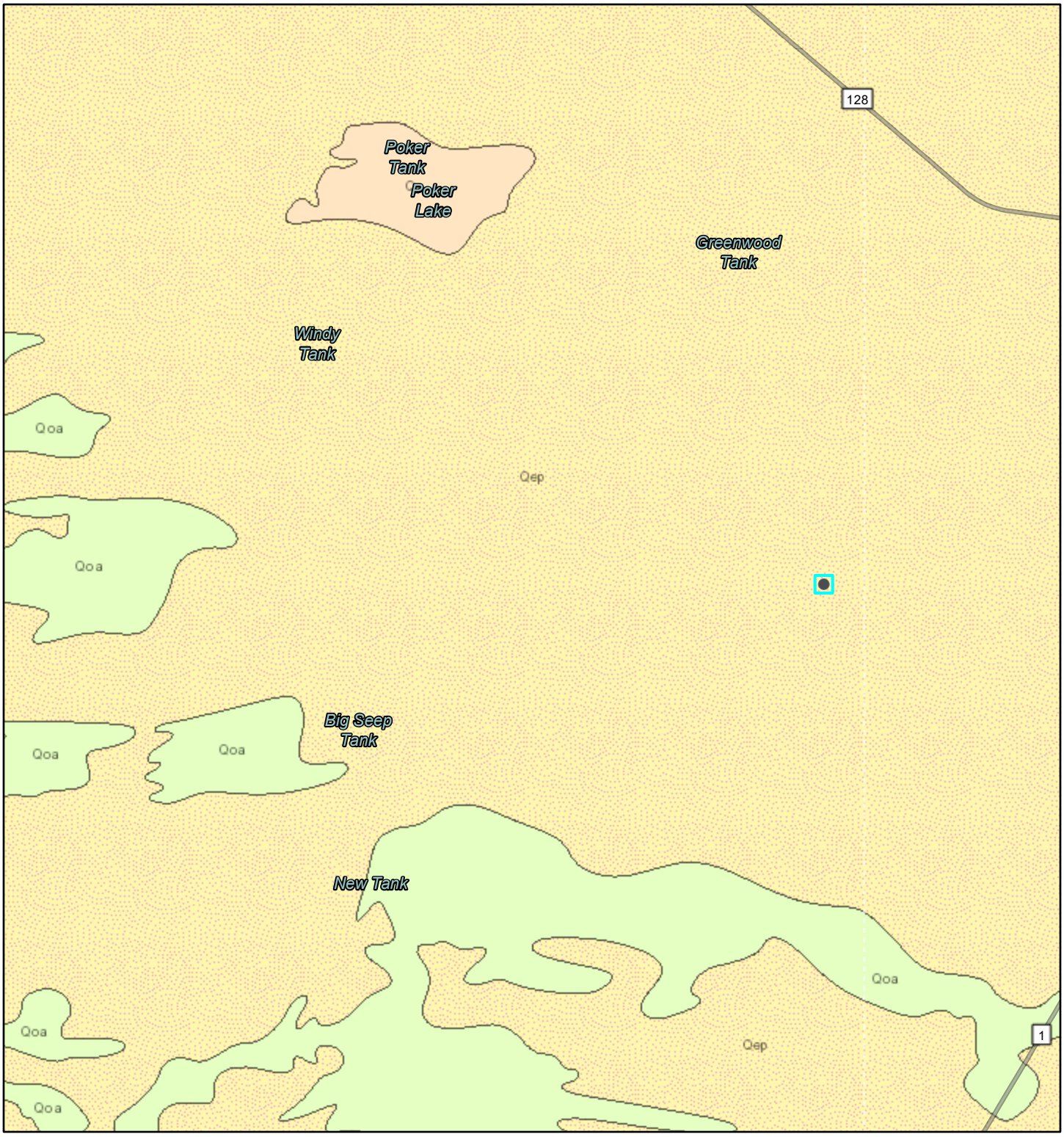
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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment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

---

17. **Perennial plant reproductive capability:**

Cotton Draw Unit 1-12 CTB Geology



4/27/2023, 9:24:30 AM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Units

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

Earthstar Geographics, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NMBGMR

ArcGIS Web AppBuilder

New Mexico Bureau of Geology | Bureau of Land Management | New Mexico Bureau of Geology and Mineral Resources | New Mexico Bureau of Geology & Mineral Resources |

APPENDIX B – Daily Field Report(s)

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	5/9/2023
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	5/10/2023 1:02 AM
Client Contact Name:	Wes Matthews	API #:	
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	5/9/2023 7:56 AM
Departed Site	5/9/2023 4:01 PM

Field Notes

8:11 Completed JSA on arrival. On site to continue delineation.

8:42 Mapped additional borehole locations and swept ground disturbance areas with magnetic locator.

15:56 Advanced boreholes BH23-21 through BH23-31 at previously approximated north edges of release.

15:57 Samples from each borehole were collected at 0, 2, and 4 feet bgs (or refusal depth).

Next Steps & Recommendations

1 Continue delineation.

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast



North of west entrance facing southeast.

Viewing Direction: South



South of west entrance facing south. Advanced BH23-29 west of BH23-28.

Viewing Direction: North



South of west entrance facing north. Advanced BH23-30 west of BH23-27.

Viewing Direction: South



South edge of pad facing south. Advanced BH23-31 south of BH23-30.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: South
	
West of tank battery facing west. Advanced BH23-21 northwest of BH23-17.	North side of pad facing south. Advanced BH23 -22 northwest of BH23-19.
Viewing Direction: South	**Viewing Direction**: Southeast
	
North side of pad facing south. Advanced BH23 -23 north of BH23-20.	North side of pad facing southeast. Advanced BH23-24 north of BH23-23.

Daily Site Visit Report

Viewing Direction: South



North side of pad facing south. Advanced BH23-25 northwest of BH23-24.

Viewing Direction: South



North side of pad facing south. Advanced BH23-26 west of BH23-25.

Viewing Direction: Southeast



South of west entrance facing southeast. Advanced BH23-27 west of BH23-26.

Viewing Direction: South



South of west entrance facing south. Advanced BH23-28 north of BH23-27.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Lakin Pullman

Signature:



Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/22/2023
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	6/22/2023 10:20 PM
Client Contact Name:	Jim Raley	API #:	
Client Contact Phone #:	575-748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	6/22/2023 8:00 AM
Departed Site	6/22/2023 2:30 PM

Field Notes

14:08 Completed safety paperwork on site

14:09 On site to complete delineation efforts

14:17 Obtained BH23-05, 09, and 61 all at 6’ depths to satisfy vertical extent of contamination.
All passed strictest NMOCD criteria.
*All hit refusal at 6’ depth

14:17 Obtained BH23-63, 64, and 65 on north end at 0’ and 2’ to satisfy horizontal extent of contamination.
All samples passed strictest NMOCD criteria.

14:16 Hydrovac on site to cut 4’ “L” shape around BH23-05, 09, and 61 for underground line locate. See pictures.

Next Steps & Recommendations

1 Send samples to lab.

Daily Site Visit Report

Site Photos

Viewing Direction: South



BH23-63 near cattle guard on east side

Viewing Direction: South



BH23-64 near cattle guard on west side

Viewing Direction: East



BH23-65 immediately west of fence for site near cattle guard

Viewing Direction: South



BH23-09

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: South
	
BH23-05	BH23-61

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/24/2023
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	6/24/2023 10:57 PM
Client Contact Name:	Jim Raley	API #:	
Client Contact Phone #:	575-748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	6/24/2023 9:15 AM
Departed Site	6/24/2023 3:45 PM

Field Notes

15:16 Completed safety paperwork on site and conducted initial line sweep with magnetic detector

15:16 On site to delineate release between separators on south side of pad

15:20 Obtained BH23-66 to 74 all at 0’ and 2’.
Took BH23-71 and 72 to 0’ , 2’ , and 4’ as this was center of release according to sat imagery

Next Steps & Recommendations

1 Continue delineation

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: South
	
BH23-69	BH23-70
Viewing Direction: South	**Viewing Direction**: North
	
BH23-71	BH23-72

Daily Site Visit Report

Viewing Direction: North



BH23-74 on immediate outside fence, within one-call.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/26/2023
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	6/26/2023 10:59 PM
Client Contact Name:	Jim Raley	API #:	
Client Contact Phone #:	575-748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	6/26/2023 9:00 AM
Departed Site	6/26/2023 2:30 PM

Field Notes

14:18 Completed safety paperwork on site and initial line sweep with magnetic locator

14:20 On site to complete delineation efforts in south area of pad near separators

14:19 Obtained BH23-79 to 84 all at depths of 0’ and 2’.
BH23-80 went to 4’ for vertical delineation purposes.

Next Steps & Recommendations

1 Send all samples to lab.
Determine work plan for remediation if needed.

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: South
	
AOI	BH23-79
Viewing Direction: South	**Viewing Direction**: North
	
BH23-80	BH23-81

Daily Site Visit Report

Viewing Direction: North



BH23-82

Viewing Direction: North



BH23-83

Viewing Direction: South



BH23-84

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	2/7/2024 3:25 AM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	
Departed Site	

Field Notes

10:48 Arrived on site

10:59 Slightly adjusted to the drilling spot to the south due to 811 call/underground lines

10:59 Began drilling

11:57 Drilling complete

12:04 Depth reach 55ft and was dry

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: North



Photo of site

Viewing Direction: South



Photo of depth reached

Viewing Direction: Northwest



Well is covered

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Wyatt Wadleigh

Signature:

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	2/9/2024 8:48 PM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	
Departed Site	

Field Notes

10:47 Arrived on site

10:50 Drill reach depth and was dry

10:52 Began plugging the well

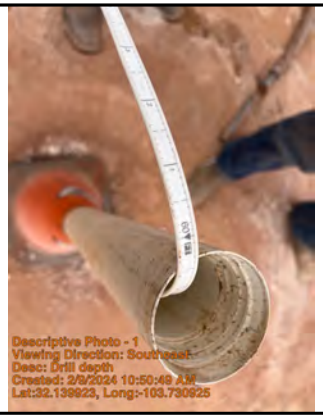
11:10 Well is plugged and covered

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast	**Viewing Direction**: East
	
Drill depth reached and was dry	Well is plugged and covered

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Wyatt Wadleigh

Signature:

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/28/2024
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	6/28/2024 9:37 PM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	6/28/2024 7:50 AM
Departed Site	6/28/2024 3:25 PM

Field Notes

9:40 Arrived on site and completed safety assessment for job and documents. Met with Devon contractors, discussing work plan for the day and safety and signing safety documents.

11:36 Discussed plans with Devon representatives. Determined backfill location and mobilized to Lealand LLC to collect 5 point composite backfill samples. Contacted Lea Land LLC to in inform of arrival for sampling backfill.

13:30 Returned to site and collected field screening samples in excavations.

15:25 Field screened samples listed in photos below.
Field screened for TPH with Dexsil Petroflag and chlorides with EC meter.
All screened below criteria.

15:26 Prepared backfill samples for lab.

Next Steps & Recommendations

1 Continue excavation on remaining 3 excavations

Daily Site Visit Report

Site Photos

Viewing Direction: East



Site information placard

Viewing Direction: Southwest



Backfill sample 1 at Lea Land

Viewing Direction: West



Backfill sample 2 at Lea Land

Viewing Direction: South



Excavation north of vertical separators. Field screen samples BS24-18 and -21 at 1ft and WS24-06 at 0-1ft

Daily Site Visit Report

Viewing Direction: South



Excavation north of horizontal separators. Field screen samples BS24-17 at 1ft and WS24-05 at 0-1ft

Viewing Direction: East



Excavation west of containment, center of pad. Field screen samples BS24-11 and -12 at 1ft and WS24-03 at 0-1ft

Viewing Direction: North



Backfill pile on liner

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Stephanie McCartyM

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	7/1/2024
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	7/2/2024 1:24 AM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	7/1/2024 10:09 AM
Departed Site	7/1/2024 5:00 PM

Field Notes

19:01 Arrived on site and completed safety paperwork. The excavation crew was already working upon arrival.

19:02 Tasked with collecting 5-point composite samples to help guide the ongoing excavations.

19:11 A hydrovac was on site before I arrived to spot check two areas adjacent to one of the 7 excavations. No buried lines were discovered. A crew was on site to power wash the lined containment on the east portion of the pad and did not affect any part of the excavation.

19:10 Nineteen 5-point composite samples were collected in 4 of the 7 excavations. All samples were field screened for chlorides using the EC meter and silver nitrate titration. TPH was screened using a petroflag. All 19 samples met criteria. No samples will be sent to the lab at this time.

19:12 All 7 excavations on the pad have been completed. Open pits were roped off for safety reasons.

19:13 Backfill for the open pits arrived throughout the day and is located on the north portion of the pad.

19:21 Eight 20-cubic yard trucks loads were hauled off site today for a total of 160 cubic yards of soil.

Next Steps & Recommendations

1

Daily Site Visit Report

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast	**Viewing Direction**: Northeast
	
1’ bgs excavation located on the southeast portion of the pad. Location of samples BS24-13 through BS24-16 and WS24-04.	1’ bgs excavation located north of the horizontal separators. Location of samples BS24-17 and WS24-05.

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: East
	
1’bgs excavation north of the heater treaters. Location of samples BS24-18 through BS24-21 and WS24-06.	1’ bgs excavation on the central portion of the pad. Location of samples BS24-11, BS24-12, and WS24-03.
Viewing Direction: South	**Viewing Direction**: Southeast
	
1’ bgs excavation located on the north central portion of the pad. Location of samples BS24-06 through BS24-10 and WS24-02.	1’bgs excavation on the northwest corner of the pad. Location of samples BS24-01 through BS24-05 and WS24-01.

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: North
	
Backfill pile on the northern portion of the pad.	Soil pile on the northern end of the pad.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: John Rewis

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	7/15/2024
Site Location Name:	Cotton Draw Unit 1-12 CTB	Report Run Date:	7/29/2024 4:06 PM
Client Contact Name:	Dale Woodall	API #:	
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	7/15/2024 9:24 AM
Departed Site	7/15/2024 3:00 PM

Field Notes

14:42 Make up JSA

14:43 Confirmation sampling event

14:43 Field screen samples

Next Steps & Recommendations

1 Jar samples and send off to lab for analysis

Daily Site Visit Report

Site Photos

Viewing Direction: South



CS24-20 and CWS-08

Viewing Direction: North



CS24-15 and CWS-06

Viewing Direction: South



CS24-16 to 19 and CWS24-07

Viewing Direction: South



CS24-11 to 14 and CWS24-05

Daily Site Visit Report

Viewing Direction: North



CS24-9 to 10 and CWS24-04

Viewing Direction: West



CS24-04 to 08 and CWS24-02 to 03

Viewing Direction: West



CS24-01 to 03 and CWS24-01

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Riley Plogger

Signature: 

Signature

APPENDIX C – Laboratory Data Report(s) and Chain of Custody Form(s)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 14, 2020

Natalie Gordon

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2002448

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 9 sample(s) on 2/11/2020 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH20-03 5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 2/7/2020 12:30:00 PM
Lab ID: 2002448-001 **Matrix:** SOIL **Received Date:** 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/13/2020 10:02:39 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/13/2020 10:02:39 AM
Surr: DNOP	82.6	55.1-146		%Rec	1	2/13/2020 10:02:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/12/2020 4:00:59 PM
Surr: BFB	85.0	66.6-105		%Rec	1	2/12/2020 4:00:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	2/12/2020 4:00:59 PM
Toluene	ND	0.049		mg/Kg	1	2/12/2020 4:00:59 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/12/2020 4:00:59 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/12/2020 4:00:59 PM
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	2/12/2020 4:00:59 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	2/12/2020 4:12:35 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2002448-002 **Matrix:** SOIL

Client Sample ID: BH20-10 0'
Collection Date: 2/7/2020 1:45:00 PM
Received Date: 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	1500	91		mg/Kg	10	2/13/2020 10:11:49 AM
Motor Oil Range Organics (MRO)	1300	450		mg/Kg	10	2/13/2020 10:11:49 AM
Surr: DNOP	0	55.1-146	S	%Rec	10	2/13/2020 10:11:49 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/12/2020 5:11:40 PM
Surr: BFB	78.8	66.6-105		%Rec	1	2/12/2020 5:11:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 5:11:40 PM
Toluene	ND	0.050		mg/Kg	1	2/12/2020 5:11:40 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/12/2020 5:11:40 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/12/2020 5:11:40 PM
Surr: 4-Bromofluorobenzene	87.4	80-120		%Rec	1	2/12/2020 5:11:40 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	480	60		mg/Kg	20	2/12/2020 4:24:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH20-10 1'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 2/7/2020 1:50:00 PM
Lab ID: 2002448-003 **Matrix:** SOIL **Received Date:** 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/13/2020 10:20:58 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/13/2020 10:20:58 AM
Surr: DNOP	87.8	55.1-146		%Rec	1	2/13/2020 10:20:58 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/12/2020 6:21:58 PM
Surr: BFB	84.5	66.6-105		%Rec	1	2/12/2020 6:21:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 6:21:58 PM
Toluene	ND	0.049		mg/Kg	1	2/12/2020 6:21:58 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/12/2020 6:21:58 PM
Xylenes, Total	ND	0.098		mg/Kg	1	2/12/2020 6:21:58 PM
Surr: 4-Bromofluorobenzene	93.3	80-120		%Rec	1	2/12/2020 6:21:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	2/12/2020 4:37:15 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH20-12 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 2/7/2020 2:30:00 PM
Lab ID: 2002448-004 **Matrix:** SOIL **Received Date:** 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	11	8.9		mg/Kg	1	2/13/2020 10:30:09 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/13/2020 10:30:09 AM
Surr: DNOP	87.5	55.1-146		%Rec	1	2/13/2020 10:30:09 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/12/2020 6:45:25 PM
Surr: BFB	78.0	66.6-105		%Rec	1	2/12/2020 6:45:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 6:45:25 PM
Toluene	ND	0.050		mg/Kg	1	2/12/2020 6:45:25 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/12/2020 6:45:25 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/12/2020 6:45:25 PM
Surr: 4-Bromofluorobenzene	86.4	80-120		%Rec	1	2/12/2020 6:45:25 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	2/12/2020 4:49:36 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2002448-005 **Matrix:** SOIL

Client Sample ID: SS20-04 0'
Collection Date: 2/7/2020 10:00:00 AM
Received Date: 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	31	9.1		mg/Kg	1	2/13/2020 10:39:18 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/13/2020 10:39:18 AM
Surr: DNOP	90.7	55.1-146		%Rec	1	2/13/2020 10:39:18 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/12/2020 7:08:55 PM
Surr: BFB	81.0	66.6-105		%Rec	1	2/12/2020 7:08:55 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 7:08:55 PM
Toluene	ND	0.050		mg/Kg	1	2/12/2020 7:08:55 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/12/2020 7:08:55 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/12/2020 7:08:55 PM
Surr: 4-Bromofluorobenzene	90.1	80-120		%Rec	1	2/12/2020 7:08:55 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	430	60		mg/Kg	20	2/12/2020 5:01:57 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2002448-006 **Matrix:** SOIL

Client Sample ID: SS20-02 0'
Collection Date: 2/7/2020 9:45:00 AM
Received Date: 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	82	8.9		mg/Kg	1	2/13/2020 10:48:31 AM
Motor Oil Range Organics (MRO)	93	45		mg/Kg	1	2/13/2020 10:48:31 AM
Surr: DNOP	96.6	55.1-146		%Rec	1	2/13/2020 10:48:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/12/2020 9:05:58 PM
Surr: BFB	83.1	66.6-105		%Rec	1	2/12/2020 9:05:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 9:05:58 PM
Toluene	ND	0.050		mg/Kg	1	2/12/2020 9:05:58 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/12/2020 9:05:58 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/12/2020 9:05:58 PM
Surr: 4-Bromofluorobenzene	92.6	80-120		%Rec	1	2/12/2020 9:05:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	2/12/2020 5:38:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2002448-007 **Matrix:** SOIL

Client Sample ID: SS20-05 0'
Collection Date: 2/7/2020 10:10:00 AM
Received Date: 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	50	9.0		mg/Kg	1	2/13/2020 10:57:41 AM
Motor Oil Range Organics (MRO)	58	45		mg/Kg	1	2/13/2020 10:57:41 AM
Surr: DNOP	93.8	55.1-146		%Rec	1	2/13/2020 10:57:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/12/2020 9:29:23 PM
Surr: BFB	79.4	66.6-105		%Rec	1	2/12/2020 9:29:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	2/12/2020 9:29:23 PM
Toluene	ND	0.049		mg/Kg	1	2/12/2020 9:29:23 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/12/2020 9:29:23 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/12/2020 9:29:23 PM
Surr: 4-Bromofluorobenzene	87.9	80-120		%Rec	1	2/12/2020 9:29:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	110	60		mg/Kg	20	2/13/2020 5:48:35 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2002448-008 **Matrix:** SOIL

Client Sample ID: SS20-09 0'
Collection Date: 2/7/2020 10:30:00 AM
Received Date: 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	120	9.6		mg/Kg	1	2/13/2020 11:06:51 AM
Motor Oil Range Organics (MRO)	160	48		mg/Kg	1	2/13/2020 11:06:51 AM
Surr: DNOP	113	55.1-146		%Rec	1	2/13/2020 11:06:51 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/12/2020 9:52:42 PM
Surr: BFB	79.3	66.6-105		%Rec	1	2/12/2020 9:52:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	2/12/2020 9:52:42 PM
Toluene	ND	0.049		mg/Kg	1	2/12/2020 9:52:42 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/12/2020 9:52:42 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/12/2020 9:52:42 PM
Surr: 4-Bromofluorobenzene	87.6	80-120		%Rec	1	2/12/2020 9:52:42 PM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	ND	60		mg/Kg	20	2/13/2020 6:00:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2002448**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: SS20-10 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 2/7/2020 10:40:00 AM
Lab ID: 2002448-009 **Matrix:** SOIL **Received Date:** 2/11/2020 2:55:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	650	99		mg/Kg	10	2/13/2020 11:16:00 AM
Motor Oil Range Organics (MRO)	730	500		mg/Kg	10	2/13/2020 11:16:00 AM
Surr: DNOP	0	55.1-146	S	%Rec	10	2/13/2020 11:16:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/12/2020 10:16:02 PM
Surr: BFB	82.6	66.6-105		%Rec	1	2/12/2020 10:16:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	2/12/2020 10:16:02 PM
Toluene	ND	0.047		mg/Kg	1	2/12/2020 10:16:02 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/12/2020 10:16:02 PM
Xylenes, Total	ND	0.095		mg/Kg	1	2/12/2020 10:16:02 PM
Surr: 4-Bromofluorobenzene	91.8	80-120		%Rec	1	2/12/2020 10:16:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	ND	60		mg/Kg	20	2/13/2020 6:38:13 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002448**

14-Feb-20

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-50417** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **50417** RunNo: **66519**

Prep Date: **2/12/2020** Analysis Date: **2/12/2020** SeqNo: **2285869** Units: **mg/Kg**

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

Sample ID: **LCS-50417** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **50417** RunNo: **66519**

Prep Date: **2/12/2020** Analysis Date: **2/12/2020** SeqNo: **2285870** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	90	110			

Sample ID: **MB-50442** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **50442** RunNo: **66549**

Prep Date: **2/13/2020** Analysis Date: **2/13/2020** SeqNo: **2287113** Units: **mg/Kg**

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

Sample ID: **LCS-50442** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **50442** RunNo: **66549**

Prep Date: **2/13/2020** Analysis Date: **2/13/2020** SeqNo: **2287114** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002448**
14-Feb-20

Client: Devon Energy
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-50407**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **50407**	RunNo: **66516**
Prep Date: **2/12/2020**	Analysis Date: **2/13/2020**	SeqNo: **2286218** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		87.7	55.1	146			

Sample ID: **LCS-50407**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **50407**	RunNo: **66516**
Prep Date: **2/12/2020**	Analysis Date: **2/13/2020**	SeqNo: **2286219** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	70	130			
Surr: DNOP	4.6		5.000		92.3	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002448**
14-Feb-20

Client: Devon Energy
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2002448-002ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH20-10 0'** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2285985** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.95	0	89.2	69.1	142			
Surr: BFB	890		998.0		89.2	66.6	105			

Sample ID: **2002448-002amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH20-10 0'** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2285986** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.93	0	88.3	69.1	142	1.05	20	
Surr: BFB	930		997.0		92.9	66.6	105	0	0	

Sample ID: **lcs-50397** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286000** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.8	80	120			
Surr: BFB	930		1000		93.3	66.6	105			

Sample ID: **mb-50397** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286001** 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		83.4	66.6	105			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002448**
14-Feb-20

Client: Devon Energy
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2002448-001ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH20-03 5'** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286011** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9980	0.01576	102	78.5	119			
Toluene	1.1	0.050	0.9980	0	107	75.7	123			
Ethylbenzene	1.1	0.050	0.9980	0	109	74.3	126			
Xylenes, Total	3.3	0.10	2.994	0	111	72.9	130			
Surr: 4-Bromofluorobenzene	0.93		0.9980		93.0	80	120			

Sample ID: **2002448-001amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH20-03 5'** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286012** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	0.9911	0.01576	96.0	78.5	119	6.43	20	
Toluene	1.0	0.050	0.9911	0	101	75.7	123	6.29	20	
Ethylbenzene	1.0	0.050	0.9911	0	105	74.3	126	5.07	20	
Xylenes, Total	3.1	0.099	2.973	0	106	72.9	130	5.88	20	
Surr: 4-Bromofluorobenzene	0.90		0.9911		91.1	80	120	0	0	

Sample ID: **LCS-50397** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286021** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.8	80	120			
Toluene	0.92	0.050	1.000	0	92.3	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.3	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.3	80	120			

Sample ID: **mb-50397** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50397** RunNo: **66521**
Prep Date: **2/11/2020** Analysis Date: **2/12/2020** SeqNo: **2286022** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		91.5	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **DEVON ENERGY** Work Order Number: **2002448** RcptNo: 1

Received By: **Isaiah Ortiz** **2/11/2020 2:55:00 PM** I-OK

Completed By: **Isaiah Ortiz** **2/11/2020 3:08:12 PM** I-OK

Reviewed By: YG 2/11/20

Chain of Custody

1. Is Chain of Custody sufficiently 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 ☑ TO
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: 2/11/20 (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Released to Imaging: 12/11/2024 3:19:34 PM
Received by OCD: 11/20/2024 10:11:07 AM

Chain-of-Custody Record

Client: Devon

Amanda Davis or Wes Mathews

Mailing Address: 6488 Seven Rivers Hwy

Artesia, NM 88210

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day

☑ Standard ☐ Rush

Project Name: Cotton Draw Unit 1-12 CTB

Project #: 20E-00141-009

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☐ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.3+0.2 CF = 2.5 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002943	BTEX MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
2/7	12:30	Soil	BH20-03 5'	4oz	1 ce	-001	✓	✓					✓			
	1:45		BH20-10 0'			-002	✓	✓					✓			
	1:50		BH20-10 1'			-003	✓	✓					✓			
	2:30		BH20-12 0'			-004	✓	✓					✓			
	10:00		SS20-04 0'			-005	✓	✓					✓			
	9:45		SS20-02 0'			-006	✓	✓					✓			
↓	10:10	↓	SS20-05 0'	↓	↓	-007	✓	✓					✓			
	10:30		SS20-09 0'			-008	✓	✓					✓			
	10:40		SS20-10 0'			-009	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2/10/20	1400				2/10/20	1400
2/10/20	1900			courier	2/11/20	1455

Remarks:
CC: Natalie Gordon
Direct Bill
Devon W/O#: 207744123

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 23, 2023

Kent Stallings

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2305593

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 33 sample(s) on 5/11/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 0 '
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 8:45:00 AM
Lab ID: 2305593-001 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/12/2023 8:29:44 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/12/2023 8:29:44 PM
Surr: DNOP	101	69-147		%Rec	1	5/12/2023 8:29:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 5:17:00 AM
Surr: BFB	88.0	15-244		%Rec	1	5/16/2023 5:17:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 5:17:00 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 5:17:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 5:17:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 5:17:00 AM
Surr: 4-Bromofluorobenzene	85.1	39.1-146		%Rec	1	5/16/2023 5:17:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	610	60		mg/Kg	20	5/16/2023 5:48:58 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 8:50:00 AM
Lab ID: 2305593-002 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 8:40:39 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 8:40:39 PM
Surr: DNOP	87.7	69-147		%Rec	1	5/12/2023 8:40:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 5:39:00 AM
Surr: BFB	86.0	15-244		%Rec	1	5/16/2023 5:39:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 5:39:00 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 5:39:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 5:39:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 5:39:00 AM
Surr: 4-Bromofluorobenzene	84.8	39.1-146		%Rec	1	5/16/2023 5:39:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	430	60		mg/Kg	20	5/16/2023 6:01:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-21 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 8:55:00 AM
Lab ID: 2305593-003 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 8:51:36 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 8:51:36 PM
Surr: DNOP	87.5	69-147		%Rec	1	5/12/2023 8:51:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 6:01:00 AM
Surr: BFB	87.4	15-244		%Rec	1	5/16/2023 6:01:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 6:01:00 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 6:01:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 6:01:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 6:01:00 AM
Surr: 4-Bromofluorobenzene	83.5	39.1-146		%Rec	1	5/16/2023 6:01:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 10:34:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-22 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:05:00 AM
Lab ID: 2305593-004 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 9:02:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 9:02:27 PM
Surr: DNOP	72.5	69-147		%Rec	1	5/12/2023 9:02:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 6:22:00 AM
Surr: BFB	83.3	15-244		%Rec	1	5/16/2023 6:22:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 6:22:00 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 6:22:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 6:22:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 6:22:00 AM
Surr: 4-Bromofluorobenzene	84.5	39.1-146		%Rec	1	5/16/2023 6:22:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 10:46:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-22 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 9:10:00 AM
Lab ID: 2305593-005 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/12/2023 9:13:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/12/2023 9:13:21 PM
Surr: DNOP	89.8	69-147		%Rec	1	5/12/2023 9:13:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 6:44:00 AM
Surr: BFB	86.2	15-244		%Rec	1	5/16/2023 6:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 6:44:00 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 6:44:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 6:44:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 6:44:00 AM
Surr: 4-Bromofluorobenzene	84.9	39.1-146		%Rec	1	5/16/2023 6:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 11:48:45 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-22 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:15:00 AM
Lab ID: 2305593-006 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/12/2023 9:24:12 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/12/2023 9:24:12 PM
Surr: DNOP	90.8	69-147		%Rec	1	5/12/2023 9:24:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 7:06:00 AM
Surr: BFB	87.4	15-244		%Rec	1	5/16/2023 7:06:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 7:06:00 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 7:06:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 7:06:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 7:06:00 AM
Surr: 4-Bromofluorobenzene	84.6	39.1-146		%Rec	1	5/16/2023 7:06:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	230	59		mg/Kg	20	5/17/2023 12:01:10 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-23 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:25:00 AM
Lab ID: 2305593-007 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 9:35:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 9:35:03 PM
Surr: DNOP	83.9	69-147		%Rec	1	5/12/2023 9:35:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 1:05:00 PM
Surr: BFB	87.1	15-244		%Rec	1	5/16/2023 1:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:05:00 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 1:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 1:05:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 1:05:00 PM
Surr: 4-Bromofluorobenzene	86.0	39.1-146		%Rec	1	5/16/2023 1:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	59		mg/Kg	20	5/17/2023 12:13:34 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-23 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:30:00 AM
Lab ID: 2305593-008 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 9:45:55 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 9:45:55 PM
Surr: DNOP	92.2	69-147		%Rec	1	5/12/2023 9:45:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 1:27:00 PM
Surr: BFB	87.0	15-244		%Rec	1	5/16/2023 1:27:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:27:00 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 1:27:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 1:27:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 1:27:00 PM
Surr: 4-Bromofluorobenzene	86.2	39.1-146		%Rec	1	5/16/2023 1:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/17/2023 12:50:48 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-23 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:35:00 AM
Lab ID: 2305593-009 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 10:07:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 10:07:35 PM
Surr: DNOP	85.8	69-147		%Rec	1	5/12/2023 10:07:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 1:49:00 PM
Surr: BFB	88.6	15-244		%Rec	1	5/16/2023 1:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:49:00 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 1:49:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 1:49:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/16/2023 1:49:00 PM
Surr: 4-Bromofluorobenzene	87.5	39.1-146		%Rec	1	5/16/2023 1:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	960	60		mg/Kg	20	5/17/2023 1:03:12 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-24 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 9:50:00 AM
Lab ID: 2305593-010 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 10:18:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 10:18:27 PM
Surr: DNOP	80.5	69-147		%Rec	1	5/12/2023 10:18:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 2:10:00 PM
Surr: BFB	91.9	15-244		%Rec	1	5/16/2023 2:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 2:10:00 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 2:10:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 2:10:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 2:10:00 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	5/16/2023 2:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 4:41:55 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-24 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 9:55:00 AM
Lab ID: 2305593-011 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/12/2023 10:29:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 10:29:19 PM
Surr: DNOP	87.6	69-147		%Rec	1	5/12/2023 10:29:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 2:32:00 PM
Surr: BFB	89.2	15-244		%Rec	1	5/16/2023 2:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 2:32:00 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 2:32:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 2:32:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/16/2023 2:32:00 PM
Surr: 4-Bromofluorobenzene	85.7	39.1-146		%Rec	1	5/16/2023 2:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	59		mg/Kg	20	5/16/2023 5:18:57 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-24 3'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 10:00:00 AM
Lab ID: 2305593-012 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 10:40:11 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 10:40:11 PM
Surr: DNOP	82.5	69-147		%Rec	1	5/12/2023 10:40:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 2:54:00 PM
Surr: BFB	89.6	15-244		%Rec	1	5/16/2023 2:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 2:54:00 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 2:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 2:54:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 2:54:00 PM
Surr: 4-Bromofluorobenzene	86.8	39.1-146		%Rec	1	5/16/2023 2:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	200	60		mg/Kg	20	5/16/2023 5:56:00 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-25 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 10:10:00 AM
Lab ID: 2305593-013 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 10:51:01 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 10:51:01 PM
Surr: DNOP	110	69-147		%Rec	1	5/12/2023 10:51:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 3:15:00 PM
Surr: BFB	88.1	15-244		%Rec	1	5/16/2023 3:15:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 3:15:00 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 3:15:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 3:15:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 3:15:00 PM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/16/2023 3:15:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 6:08:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-25 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 10:15:00 AM
Lab ID: 2305593-014 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/12/2023 11:01:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 11:01:50 PM
Surr: DNOP	85.4	69-147		%Rec	1	5/12/2023 11:01:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 3:44:00 PM
Surr: BFB	85.0	15-244		%Rec	1	5/16/2023 3:44:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 3:44:00 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 3:44:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 3:44:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/16/2023 3:44:00 PM
Surr: 4-Bromofluorobenzene	84.6	39.1-146		%Rec	1	5/16/2023 3:44:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 6:45:23 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-25 3'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 10:20:00 AM
Lab ID: 2305593-015 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 11:12:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 11:12:42 PM
Surr: DNOP	85.2	69-147		%Rec	1	5/12/2023 11:12:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 4:05:00 PM
Surr: BFB	86.6	15-244		%Rec	1	5/16/2023 4:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 4:05:00 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 4:05:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 4:05:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/16/2023 4:05:00 PM
Surr: 4-Bromofluorobenzene	86.1	39.1-146		%Rec	1	5/16/2023 4:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 6:57:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-26 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 10:45:00 AM
Lab ID: 2305593-016 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/12/2023 11:23:32 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 11:23:32 PM
Surr: DNOP	84.1	69-147		%Rec	1	5/12/2023 11:23:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 4:27:00 PM
Surr: BFB	93.7	15-244		%Rec	1	5/16/2023 4:27:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 4:27:00 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 4:27:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 4:27:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 4:27:00 PM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/16/2023 4:27:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 7:10:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-26 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 10:50:00 AM
Lab ID: 2305593-017 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2023 10:38:11 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 10:38:11 AM
Surr: DNOP	97.6	69-147		%Rec	1	5/16/2023 10:38:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/15/2023 11:10:00 PM
Surr: BFB	82.3	15-244		%Rec	1	5/15/2023 11:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/15/2023 11:10:00 PM
Toluene	ND	0.049		mg/Kg	1	5/15/2023 11:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/15/2023 11:10:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/15/2023 11:10:00 PM
Surr: 4-Bromofluorobenzene	83.9	39.1-146		%Rec	1	5/15/2023 11:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	220	61		mg/Kg	20	5/16/2023 7:22:26 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-26 3'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 10:55:00 AM
Lab ID: 2305593-018 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 10:48:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 10:48:46 AM
Surr: DNOP	96.0	69-147		%Rec	1	5/16/2023 10:48:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/15/2023 11:32:00 PM
Surr: BFB	86.3	15-244		%Rec	1	5/15/2023 11:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/15/2023 11:32:00 PM
Toluene	ND	0.049		mg/Kg	1	5/15/2023 11:32:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/15/2023 11:32:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/15/2023 11:32:00 PM
Surr: 4-Bromofluorobenzene	84.0	39.1-146		%Rec	1	5/15/2023 11:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1900	60		mg/Kg	20	5/16/2023 7:34:47 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-27 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 11:05:00 AM
Lab ID: 2305593-019 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	3800	99		mg/Kg	10	5/16/2023 12:01:23 PM
Motor Oil Range Organics (MRO)	2000	500		mg/Kg	10	5/16/2023 12:01:23 PM
Surr: DNOP	0	69-147	S	%Rec	10	5/16/2023 12:01:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/15/2023 11:53:00 PM
Surr: BFB	85.8	15-244		%Rec	1	5/15/2023 11:53:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/15/2023 11:53:00 PM
Toluene	ND	0.048		mg/Kg	1	5/15/2023 11:53:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/15/2023 11:53:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/15/2023 11:53:00 PM
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/15/2023 11:53:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	3800	150		mg/Kg	50	5/17/2023 10:52:54 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-27 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 11:10:00 AM
Lab ID: 2305593-020 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 11:40:07 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 11:40:07 AM
Surr: DNOP	98.5	69-147		%Rec	1	5/16/2023 11:40:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 12:15:00 AM
Surr: BFB	85.1	15-244		%Rec	1	5/16/2023 12:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 12:15:00 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 12:15:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 12:15:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 12:15:00 AM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/16/2023 12:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1100	60		mg/Kg	20	5/16/2023 7:59:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-27 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 11:15:00 AM
Lab ID: 2305593-021 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2023 6:06:49 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 6:06:49 PM
Surr: DNOP	90.9	69-147		%Rec	1	5/16/2023 6:06:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 6:40:59 PM
Surr: BFB	97.4	15-244		%Rec	1	5/16/2023 6:40:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 6:40:59 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 6:40:59 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 6:40:59 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 6:40:59 PM
Surr: 4-Bromofluorobenzene	84.0	39.1-146		%Rec	1	5/16/2023 6:40:59 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2100	60		mg/Kg	20	5/16/2023 8:11:48 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-28 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 11:30:00 AM
Lab ID: 2305593-022 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/16/2023 6:17:43 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/16/2023 6:17:43 PM
Surr: DNOP	69.3	69-147		%Rec	1	5/16/2023 6:17:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 7:51:17 PM
Surr: BFB	93.7	15-244		%Rec	1	5/16/2023 7:51:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 7:51:17 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 7:51:17 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 7:51:17 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 7:51:17 PM
Surr: 4-Bromofluorobenzene	83.5	39.1-146		%Rec	1	5/16/2023 7:51:17 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	970	60		mg/Kg	20	5/16/2023 8:24:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-28 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 11:35:00 AM
Lab ID: 2305593-023 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	5/16/2023 6:28:37 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	5/16/2023 6:28:37 PM
Surr: DNOP	99.9	69-147		%Rec	1	5/16/2023 6:28:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 9:01:37 PM
Surr: BFB	97.9	15-244		%Rec	1	5/16/2023 9:01:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 9:01:37 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 9:01:37 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 9:01:37 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 9:01:37 PM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/16/2023 9:01:37 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 8:36:30 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-28 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 11:40:00 AM
Lab ID: 2305593-024 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 6:39:31 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 6:39:31 PM
Surr: DNOP	98.1	69-147		%Rec	1	5/16/2023 6:39:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 9:25:00 PM
Surr: BFB	84.0	15-244		%Rec	1	5/16/2023 9:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 9:25:00 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 9:25:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 9:25:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/16/2023 9:25:00 PM
Surr: 4-Bromofluorobenzene	80.9	39.1-146		%Rec	1	5/16/2023 9:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 9:13:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-29 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 11:55:00 AM
Lab ID: 2305593-025 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	110	8.9		mg/Kg	1	5/16/2023 6:50:25 PM
Motor Oil Range Organics (MRO)	99	45		mg/Kg	1	5/16/2023 6:50:25 PM
Surr: DNOP	106	69-147		%Rec	1	5/16/2023 6:50:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 9:48:21 PM
Surr: BFB	85.2	15-244		%Rec	1	5/16/2023 9:48:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 9:48:21 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 9:48:21 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 9:48:21 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 9:48:21 PM
Surr: 4-Bromofluorobenzene	81.5	39.1-146		%Rec	1	5/16/2023 9:48:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 9:25:53 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-29 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 12:00:00 PM
Lab ID: 2305593-026 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/16/2023 7:01:20 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/16/2023 7:01:20 PM
Surr: DNOP	97.7	69-147		%Rec	1	5/16/2023 7:01:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 10:11:41 PM
Surr: BFB	90.4	15-244		%Rec	1	5/16/2023 10:11:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 10:11:41 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 10:11:41 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 10:11:41 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 10:11:41 PM
Surr: 4-Bromofluorobenzene	83.5	39.1-146		%Rec	1	5/16/2023 10:11:41 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 9:38:14 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-29 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 12:05:00 PM
Lab ID: 2305593-027 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/16/2023 7:12:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 7:12:08 PM
Surr: DNOP	90.3	69-147		%Rec	1	5/16/2023 7:12:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 10:35:02 PM
Surr: BFB	79.2	15-244		%Rec	1	5/16/2023 10:35:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 10:35:02 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 10:35:02 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 10:35:02 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 10:35:02 PM
Surr: 4-Bromofluorobenzene	80.6	39.1-146		%Rec	1	5/16/2023 10:35:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	220	60		mg/Kg	20	5/16/2023 9:50:34 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-30 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 12:20:00 PM
Lab ID: 2305593-028 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	600	8.8		mg/Kg	1	5/16/2023 9:33:20 PM
Motor Oil Range Organics (MRO)	570	44		mg/Kg	1	5/16/2023 9:33:20 PM
Surr: DNOP	111	69-147		%Rec	1	5/16/2023 9:33:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 10:58:19 PM
Surr: BFB	79.8	15-244		%Rec	1	5/16/2023 10:58:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 10:58:19 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 10:58:19 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 10:58:19 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 10:58:19 PM
Surr: 4-Bromofluorobenzene	80.7	39.1-146		%Rec	1	5/16/2023 10:58:19 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/16/2023 10:02:55 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-30 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 12:25:00 PM
Lab ID: 2305593-029 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/16/2023 7:22:59 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/16/2023 7:22:59 PM
Surr: DNOP	93.6	69-147		%Rec	1	5/16/2023 7:22:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 11:21:38 PM
Surr: BFB	69.9	15-244		%Rec	1	5/16/2023 11:21:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 11:21:38 PM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 11:21:38 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 11:21:38 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 11:21:38 PM
Surr: 4-Bromofluorobenzene	80.5	39.1-146		%Rec	1	5/16/2023 11:21:38 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	84	60		mg/Kg	20	5/16/2023 10:15:16 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-30 3'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 12:30:00 PM
Lab ID: 2305593-030 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	63	9.3		mg/Kg	1	5/16/2023 7:33:51 PM
Motor Oil Range Organics (MRO)	62	46		mg/Kg	1	5/16/2023 7:33:51 PM
Surr: DNOP	93.8	69-147		%Rec	1	5/16/2023 7:33:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 11:45:05 PM
Surr: BFB	69.1	15-244		%Rec	1	5/16/2023 11:45:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 11:45:05 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 11:45:05 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 11:45:05 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 11:45:05 PM
Surr: 4-Bromofluorobenzene	78.5	39.1-146		%Rec	1	5/16/2023 11:45:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	320	60		mg/Kg	20	5/17/2023 8:49:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-31 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 12:40:00 PM
Lab ID: 2305593-031 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/16/2023 7:44:43 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 7:44:43 PM
Surr: DNOP	93.9	69-147		%Rec	1	5/16/2023 7:44:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/17/2023 12:31:41 AM
Surr: BFB	84.8	15-244		%Rec	1	5/17/2023 12:31:41 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 12:31:41 AM
Toluene	ND	0.048		mg/Kg	1	5/17/2023 12:31:41 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/17/2023 12:31:41 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/17/2023 12:31:41 AM
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/17/2023 12:31:41 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/17/2023 9:02:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-31 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/9/2023 12:45:00 PM
Lab ID: 2305593-032 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/16/2023 8:06:23 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/16/2023 8:06:23 PM
Surr: DNOP	95.0	69-147		%Rec	1	5/16/2023 8:06:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/17/2023 12:54:59 AM
Surr: BFB	87.0	15-244		%Rec	1	5/17/2023 12:54:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/17/2023 12:54:59 AM
Toluene	ND	0.049		mg/Kg	1	5/17/2023 12:54:59 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/17/2023 12:54:59 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/17/2023 12:54:59 AM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/17/2023 12:54:59 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/17/2023 9:14:39 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305593**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-31 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/9/2023 12:50:00 PM
Lab ID: 2305593-033 **Matrix:** SOIL **Received Date:** 5/11/2023 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 8:17:17 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 8:17:17 PM
Surr: DNOP	98.6	69-147		%Rec	1	5/16/2023 8:17:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/17/2023 1:18:25 AM
Surr: BFB	67.5	15-244		%Rec	1	5/17/2023 1:18:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 1:18:25 AM
Toluene	ND	0.048		mg/Kg	1	5/17/2023 1:18:25 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/17/2023 1:18:25 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/17/2023 1:18:25 AM
Surr: 4-Bromofluorobenzene	78.0	39.1-146		%Rec	1	5/17/2023 1:18:25 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	380	60		mg/Kg	20	5/17/2023 9:51:41 PM

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74979** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **74979** RunNo: **96806**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511156** Units: **mg/Kg**

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

Sample ID: **LCS-74979** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **74979** RunNo: **96806**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Sample ID: **MB-74993** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **74993** RunNo: **96806**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511194** Units: **mg/Kg**

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

Sample ID: **LCS-74993** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **74993** RunNo: **96806**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511195** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.2	90	110			

Sample ID: **MB-74991** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **74991** RunNo: **96813**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511568** Units: **mg/Kg**

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

Sample ID: **LCS-74991** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **74991** RunNo: **96813**
Prep Date: **5/16/2023** Analysis Date: **5/16/2023** SeqNo: **3511569** 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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75001** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **75001** RunNo: **96821**

Prep Date: **5/17/2023** Analysis Date: **5/17/2023** SeqNo: **3512896** Units: **mg/Kg**

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

Sample ID: **LCS-75001** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **75001** RunNo: **96821**

Prep Date: **5/17/2023** Analysis Date: **5/17/2023** SeqNo: **3512897** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Sample ID: **MB-75006** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **75006** RunNo: **96821**

Prep Date: **5/17/2023** Analysis Date: **5/17/2023** SeqNo: **3512943** Units: **mg/Kg**

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

Sample ID: **LCS-75006** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **75006** RunNo: **96821**

Prep Date: **5/17/2023** Analysis Date: **5/17/2023** SeqNo: **3512944** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305593-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-21 2'**	Batch ID: **74902**	RunNo: **96715**							
Prep Date: **5/11/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508357**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.5	47.71	0	81.2	54.2	135			
Surr: DNOP	4.1		4.771		85.6	69	147			

Sample ID: **2305593-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-21 2'**	Batch ID: **74902**	RunNo: **96715**							
Prep Date: **5/11/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508358**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.8	48.83	0	84.3	54.2	135	6.06	29.2	
Surr: DNOP	4.3		4.883		87.8	69	147	0	0	

Sample ID: **LCS-74902**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **74902**	RunNo: **96715**							
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508385**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	61.9	130			
Surr: DNOP	4.4		5.000		88.6	69	147			

Sample ID: **MB-74902**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **74902**	RunNo: **96715**							
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508387**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.2		10.00		82.2	69	147			

Sample ID: **LCS-74924**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **74924**	RunNo: **96749**							
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509530**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.3	61.9	130			
Surr: DNOP	4.6		5.000		92.2	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74924**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **74924**	RunNo: **96749**							
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509531**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		89.9	69	147			

Sample ID: **MB-74969**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **74969**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510134**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		94.9	69	147			

Sample ID: **2305593-021AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-27 4'**	Batch ID: **74966**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510880**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.9	49.26	0	88.7	54.2	135			
Surr: DNOP	4.4		4.926		89.0	69	147			

Sample ID: **2305593-021AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-27 4'**	Batch ID: **74966**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510881**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.8	49.16	0	91.6	54.2	135	2.96	29.2	
Surr: DNOP	4.7		4.916		95.9	69	147	0	0	

Sample ID: **LCS-74966**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **74966**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510946**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.1	61.9	130			
Surr: DNOP	4.8		5.000		96.4	69	147			

Sample ID: **LCS-74969**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **74969**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510973**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74969**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **74969**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510973**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.3	69	147			

Sample ID: **MB-74966**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **74966**	RunNo: **96783**							
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510974**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		91.2	69	147			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-74896**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **74896**	RunNo: **96758**							
Prep Date: **5/11/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509390**	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	870		1000		87.1	15	244			

Sample ID: **lcs-74896**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **74896**	RunNo: **96758**							
Prep Date: **5/11/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509391**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.6	70	130			
Surr: BFB	1900		1000		189	15	244			

Sample ID: **LCS-74888**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **74888**	RunNo: **96758**							
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509411**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	77.2	70	130			
Surr: BFB	1900		1000		194	15	244			

Sample ID: **MB-74888**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **74888**	RunNo: **96758**							
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509412**	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	860		1000		86.5	15	244			

Sample ID: **lcs-74920**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **74920**	RunNo: **96786**							
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510635**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.9	70	130			
Surr: BFB	5200		1000		522	15	244			S

Sample ID: **mb-74920**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **74920**	RunNo: **96786**							
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510636**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-74920**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74920**	RunNo: **96786**
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510636** Units: **mg/Kg**

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

Sample ID: **2305593-021ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-27 4'**	Batch ID: **74920**	RunNo: **96786**
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510638** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	23.83	0	91.4	70	130			
Surr: BFB	4800		953.3		507	15	244			S

Sample ID: **2305593-021amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-27 4'**	Batch ID: **74920**	RunNo: **96786**
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510639** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.8	23.85	0	89.8	70	130	1.71	20	
Surr: BFB	4800		954.2		501	15	244	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-74896** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **74896** RunNo: **96758**
Prep Date: **5/11/2023** Analysis Date: **5/15/2023** SeqNo: **3509443** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.7	39.1	146			

Sample ID: **lcs-74896** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **74896** RunNo: **96758**
Prep Date: **5/11/2023** Analysis Date: **5/15/2023** SeqNo: **3509444** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.5	70	130			
Toluene	0.91	0.050	1.000	0	90.6	70	130			
Ethylbenzene	0.88	0.050	1.000	0	88.2	70	130			
Xylenes, Total	2.6	0.10	3.000	0	87.8	70	130			
Surr: 4-Bromofluorobenzene	0.87		1.000		87.0	39.1	146			

Sample ID: **LCS-74888** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **74888** RunNo: **96758**
Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.4	70	130			
Toluene	0.89	0.050	1.000	0	89.3	70	130			
Ethylbenzene	0.87	0.050	1.000	0	86.5	70	130			
Xylenes, Total	2.6	0.10	3.000	0	85.6	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		85.7	39.1	146			

Sample ID: **MB-74888** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **74888** RunNo: **96758**
Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.84		1.000		84.0	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305593**
23-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74920** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **74920** RunNo: **96786**
Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3510692** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.025	1.000	0	78.5	70	130			
Toluene	0.81	0.050	1.000	0	81.0	70	130			
Ethylbenzene	0.82	0.050	1.000	0	81.7	70	130			
Xylenes, Total	2.5	0.10	3.000	0	82.1	70	130			
Surr: 4-Bromofluorobenzene	0.88		1.000		88.4	39.1	146			

Sample ID: **mb-74920** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **74920** RunNo: **96786**
Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3510693** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.9	39.1	146			

Sample ID: **2305593-022ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-28 0'** Batch ID: **74920** RunNo: **96786**
Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3510711** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.70	0.023	0.9355	0	75.1	70	130			
Toluene	0.73	0.047	0.9355	0.01562	76.1	70	130			
Ethylbenzene	0.74	0.047	0.9355	0	79.3	70	130			
Xylenes, Total	2.2	0.094	2.806	0	80.1	70	130			
Surr: 4-Bromofluorobenzene	0.79		0.9355		84.7	39.1	146			

Sample ID: **2305593-022amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-28 0'** Batch ID: **74920** RunNo: **96786**
Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3510713** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.75	0.023	0.9390	0	79.9	70	130	6.56	20	
Toluene	0.78	0.047	0.9390	0.01562	80.9	70	130	6.42	20	
Ethylbenzene	0.79	0.047	0.9390	0	83.8	70	130	5.94	20	
Xylenes, Total	2.4	0.094	2.817	0	84.2	70	130	5.33	20	
Surr: 4-Bromofluorobenzene	0.79		0.9390		84.1	39.1	146	0	0	

Qualifiers:

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

Page 166 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2305593 RcptNo: 1

Received By: Juan Rojas 5/11/2023 8:00:00 AM

Completed By: Cheyenne Cason 5/11/2023 9:07:36 AM

Reviewed By: KDH 5.11.23

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: JMS 5/11/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: Mailing address, phone number and Email are missing on COC- TMC 5/10/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes	Yogi		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Cotton Draw Unit 1-12 CTB

Project #:

23E-02423

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 Yogi

Cooler Temp(including CF): 2.6-0 = 2.6

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. 2305593	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/09/23	8:45	Soil	BH22-21 0'	1, 4oz jar		001	X	X					X			
05/09/23	8:50	Soil	BH22-21 2'	1, 4oz jar		002	X	X					X			
05/09/23	8:55	Soil	BH22-21 4'	1, 4oz jar		003	X	X					X			
05/09/23	9:05	Soil	BH22-22 0'	1, 4oz jar		004	X	X					X			
05/09/23	9:10	Soil	BH22-22 2'	1, 4oz jar		005	X	X					X			
05/09/23	9:15	Soil	BH22-22 3.5'	1, 4oz jar		006	X	X					X			
05/09/23	9:25	Soil	BH22-23 0'	1, 4oz jar		007	X	X					X			
05/09/23	9:30	Soil	BH22-23 2'	1, 4oz jar		008	X	X					X			
05/09/23	9:35	Soil	BH22-23 3.5'	1, 4oz jar		009	X	X					X			
05/09/23	9:50	Soil	BH22-24 0'	1, 4oz jar		010	X	X					X			
05/09/23	9:55	Soil	BH22-24 2'	1, 4oz jar		011	X	X					X			
05/09/23	10:00	Soil	BH22-24 3'	1, 4oz jar		012	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
5-10-23	0700	Lobo Pullman			5/10/23	700
5/10/23	1900				5/11/23	8:00

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

Sample names BH22 and BH23 Per Erin 1/3 one 5/11/23

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

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Yoyo

Cooler Temp(including CF): 7.6-0=7.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305593	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/09/23	10:10	Soil	BH22-25 0'	1, 4oz jar		~~001~~ 013	X	X					X			
05/09/23	10:15	Soil	BH22-25 2'	1, 4oz jar		014	X	X					X			
05/09/23	10:20	Soil	BH22-25 3'	1, 4oz jar		015	X	X					X			
05/09/23	10:45	Soil	BH22-26 0'	1, 4oz jar		016	X	X					X			
05/09/23	10:50	Soil	BH22-26 2'	1, 4oz jar		017	X	X					X			
05/09/23	10:55	Soil	BH22-26 3'	1, 4oz jar		018	X	X					X			
05/09/23	11:05	Soil	BH22-27 0'	1, 4oz jar		019	X	X					X			
05/09/23	11:10	Soil	BH22-27 2'	1, 4oz jar		020	X	X					X			
05/09/23	11:15	Soil	BH22-27 4'	1, 4oz jar		021	X	X					X			
05/09/23	11:30	Soil	BH22-28 0'	1, 4oz jar		022	X	X					X			
05/09/23	11:35	Soil	BH22-28 2'	1, 4oz jar		023	X	X					X			
05/09/23	11:40	Soil	BH22-28 4'	1, 4oz jar		024	X	X					X			

Analysis Request: BTEX / MTBE / TMB's (8021); TPH:8015D(GRO / DRO / MRO); 8081 Pesticides/8082 PCB's; EDB (Method 504.1); PAHs by 8310 or 8270SIMS; RCRA 8 Metals; Cl, F, Br, NO_3, NO_2, PO_4, SO_4; 8260 (VOA); 8270 (Semi-VOA); Total Coliform (Present/Absent)

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-10-23	0700	L.Pullman				
5/10/23	1900				5/10/23	700
5/10/23	1900				5/11/23	8:00

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

2/3

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

Chain of Custody Record

Client: Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☐ Yes ☐ No 2nd 5/11/23

# of Coolers: 1 2 Yogi

Cooler Temp(including CF): 2.6-0=2.6

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. 2305593	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/09/23	11:55	Soil	BH22-29 0'	1, 4oz jar		025	X	X					X			
05/09/23	12:00	Soil	BH22-29 2'	1, 4oz jar		026	X	X					X			
05/09/23	12:05	Soil	BH22-29 4'	1, 4oz jar		027	X	X					X			
05/09/23	12:20	Soil	BH22-30 0'	1, 4oz jar		028	X	X					X			
05/09/23	12:25	Soil	BH22-30 2'	1, 4oz jar		029	X	X					X			
05/09/23	12:30	Soil	BH22-30 3'	1, 4oz jar		030	X	X					X			
05/09/23	12:40	Soil	BH22-31 0'	1, 4oz jar		031	X	X					X			
05/09/23	12:45	Soil	BH22-31 2'	1, 4oz jar		032	X	X					X			
05/09/23	12:50	Soil	BH22-31 3.5'	1, 4oz jar		033	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
5-10-23	07:00	Robert Pullman				
5/10/23	1900				5/10/23	700
5/10/23	1900			courier	5/11/23	9:00

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

3/3

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 23, 2023

Kent Stallings

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2305494

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 24 sample(s) on 5/10/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 0 '
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:20:00 AM
Lab ID: 2305494-001 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/12/2023 11:34:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/12/2023 11:34:20 PM
Surr: DNOP	112	69-147		%Rec	1	5/12/2023 11:34:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 12:42:55 AM
Surr: BFB	68.4	15-244		%Rec	1	5/13/2023 12:42:55 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 12:42:55 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 12:42:55 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 12:42:55 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 12:42:55 AM
Surr: 4-Bromofluorobenzene	82.7	39.1-146		%Rec	1	5/13/2023 12:42:55 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	270	60		mg/Kg	20	5/16/2023 12:06:12 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:25:00 AM
Lab ID: 2305494-002 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/12/2023 11:45:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/12/2023 11:45:07 PM
Surr: DNOP	116	69-147		%Rec	1	5/12/2023 11:45:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 1:53:20 AM
Surr: BFB	66.8	15-244		%Rec	1	5/13/2023 1:53:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 1:53:20 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 1:53:20 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 1:53:20 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/13/2023 1:53:20 AM
Surr: 4-Bromofluorobenzene	82.1	39.1-146		%Rec	1	5/13/2023 1:53:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	5/16/2023 12:18:32 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-13 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:30:00 AM
Lab ID: 2305494-003 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/13/2023 12:06:40 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 12:06:40 AM
Surr: DNOP	84.0	69-147		%Rec	1	5/13/2023 12:06:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/13/2023 3:03:49 AM
Surr: BFB	70.8	15-244		%Rec	1	5/13/2023 3:03:49 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 3:03:49 AM
Toluene	ND	0.047		mg/Kg	1	5/13/2023 3:03:49 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/13/2023 3:03:49 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/13/2023 3:03:49 AM
Surr: 4-Bromofluorobenzene	82.8	39.1-146		%Rec	1	5/13/2023 3:03:49 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	470	60		mg/Kg	20	5/16/2023 12:30:52 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-14 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:40:00 AM
Lab ID: 2305494-004 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/13/2023 12:17:29 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/13/2023 12:17:29 AM
Surr: DNOP	84.4	69-147		%Rec	1	5/13/2023 12:17:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 3:27:20 AM
Surr: BFB	68.6	15-244		%Rec	1	5/13/2023 3:27:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 3:27:20 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 3:27:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 3:27:20 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 3:27:20 AM
Surr: 4-Bromofluorobenzene	82.5	39.1-146		%Rec	1	5/13/2023 3:27:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/16/2023 1:07:53 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-14 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:45:00 AM
Lab ID: 2305494-005 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/13/2023 12:28:20 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/13/2023 12:28:20 AM
Surr: DNOP	87.8	69-147		%Rec	1	5/13/2023 12:28:20 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 3:50:49 AM
Surr: BFB	81.2	15-244		%Rec	1	5/13/2023 3:50:49 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 3:50:49 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 3:50:49 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 3:50:49 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/13/2023 3:50:49 AM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/13/2023 3:50:49 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/16/2023 1:20:14 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-14 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 11:50:00 AM
Lab ID: 2305494-006 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/13/2023 12:39:12 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 12:39:12 AM
Surr: DNOP	88.4	69-147		%Rec	1	5/13/2023 12:39:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/13/2023 4:14:20 AM
Surr: BFB	67.9	15-244		%Rec	1	5/13/2023 4:14:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 4:14:20 AM
Toluene	ND	0.050		mg/Kg	1	5/13/2023 4:14:20 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/13/2023 4:14:20 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/13/2023 4:14:20 AM
Surr: 4-Bromofluorobenzene	83.3	39.1-146		%Rec	1	5/13/2023 4:14:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	5/16/2023 1:32:35 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/8/2023 12:05:00 PM
Lab ID: 2305494-007 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	5600	99		mg/Kg	10	5/15/2023 11:59:01 AM
Motor Oil Range Organics (MRO)	2600	490		mg/Kg	10	5/15/2023 11:59:01 AM
Surr: DNOP	0	69-147	S	%Rec	10	5/15/2023 11:59:01 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 4:37:44 AM
Surr: BFB	66.1	15-244		%Rec	1	5/13/2023 4:37:44 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 4:37:44 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 4:37:44 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 4:37:44 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/13/2023 4:37:44 AM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/13/2023 4:37:44 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 12:51:10 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-15 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 12:10:00 PM
Lab ID: 2305494-008 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/13/2023 1:00:58 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 1:00:58 AM
Surr: DNOP	101	69-147		%Rec	1	5/13/2023 1:00:58 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 5:01:09 AM
Surr: BFB	75.6	15-244		%Rec	1	5/13/2023 5:01:09 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 5:01:09 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 5:01:09 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 5:01:09 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 5:01:09 AM
Surr: 4-Bromofluorobenzene	86.1	39.1-146		%Rec	1	5/13/2023 5:01:09 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 1:03:35 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-15 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 12:15:00 PM
Lab ID: 2305494-009 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/13/2023 1:11:52 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/13/2023 1:11:52 AM
Surr: DNOP	84.2	69-147		%Rec	1	5/13/2023 1:11:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/13/2023 5:24:33 AM
Surr: BFB	76.7	15-244		%Rec	1	5/13/2023 5:24:33 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 5:24:33 AM
Toluene	ND	0.050		mg/Kg	1	5/13/2023 5:24:33 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/13/2023 5:24:33 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/13/2023 5:24:33 AM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/13/2023 5:24:33 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	59		mg/Kg	20	5/16/2023 2:05:37 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-16 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 12:30:00 PM
Lab ID: 2305494-010 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/13/2023 1:22:45 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/13/2023 1:22:45 AM
Surr: DNOP	79.6	69-147		%Rec	1	5/13/2023 1:22:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 5:47:54 AM
Surr: BFB	81.7	15-244		%Rec	1	5/13/2023 5:47:54 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 5:47:54 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 5:47:54 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 5:47:54 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 5:47:54 AM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	5/13/2023 5:47:54 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 2:18:01 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-16 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 12:35:00 PM
Lab ID: 2305494-011 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/13/2023 1:33:40 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/13/2023 1:33:40 AM
Surr: DNOP	88.3	69-147		%Rec	1	5/13/2023 1:33:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 6:34:28 AM
Surr: BFB	83.8	15-244		%Rec	1	5/13/2023 6:34:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 6:34:28 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 6:34:28 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 6:34:28 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 6:34:28 AM
Surr: 4-Bromofluorobenzene	88.3	39.1-146		%Rec	1	5/13/2023 6:34:28 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 2:30:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-16 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 12:40:00 PM
Lab ID: 2305494-012 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/13/2023 1:44:35 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 1:44:35 AM
Surr: DNOP	95.8	69-147		%Rec	1	5/13/2023 1:44:35 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 6:57:50 AM
Surr: BFB	69.0	15-244		%Rec	1	5/13/2023 6:57:50 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 6:57:50 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 6:57:50 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 6:57:50 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 6:57:50 AM
Surr: 4-Bromofluorobenzene	83.0	39.1-146		%Rec	1	5/13/2023 6:57:50 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 2:42:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-17 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/8/2023 2:30:00 PM
Lab ID: 2305494-013 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/13/2023 2:06:23 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/13/2023 2:06:23 AM
Surr: DNOP	90.4	69-147		%Rec	1	5/13/2023 2:06:23 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 7:21:17 AM
Surr: BFB	60.8	15-244		%Rec	1	5/13/2023 7:21:17 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 7:21:17 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 7:21:17 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 7:21:17 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 7:21:17 AM
Surr: 4-Bromofluorobenzene	81.5	39.1-146		%Rec	1	5/13/2023 7:21:17 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 2:55:14 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-17 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 2:35:00 PM
Lab ID: 2305494-014 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/13/2023 2:17:27 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/13/2023 2:17:27 AM
Surr: DNOP	118	69-147		%Rec	1	5/13/2023 2:17:27 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 7:44:45 AM
Surr: BFB	72.5	15-244		%Rec	1	5/13/2023 7:44:45 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 7:44:45 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 7:44:45 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 7:44:45 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/13/2023 7:44:45 AM
Surr: 4-Bromofluorobenzene	83.8	39.1-146		%Rec	1	5/13/2023 7:44:45 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 3:07:39 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-17 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 2:40:00 PM
Lab ID: 2305494-015 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/13/2023 2:28:29 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 2:28:29 AM
Surr: DNOP	88.3	69-147		%Rec	1	5/13/2023 2:28:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 8:08:16 AM
Surr: BFB	74.7	15-244		%Rec	1	5/13/2023 8:08:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 8:08:16 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 8:08:16 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 8:08:16 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/13/2023 8:08:16 AM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/13/2023 8:08:16 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 3:20:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-18 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 2:45:00 PM
Lab ID: 2305494-016 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	180	9.9		mg/Kg	1	5/13/2023 2:39:30 AM
Motor Oil Range Organics (MRO)	290	49		mg/Kg	1	5/13/2023 2:39:30 AM
Surr: DNOP	100	69-147		%Rec	1	5/13/2023 2:39:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/13/2023 8:31:45 AM
Surr: BFB	60.4	15-244		%Rec	1	5/13/2023 8:31:45 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 8:31:45 AM
Toluene	ND	0.049		mg/Kg	1	5/13/2023 8:31:45 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/13/2023 8:31:45 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/13/2023 8:31:45 AM
Surr: 4-Bromofluorobenzene	81.5	39.1-146		%Rec	1	5/13/2023 8:31:45 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 3:32:28 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-18 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 2:50:00 PM
Lab ID: 2305494-017 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/13/2023 2:50:31 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/13/2023 2:50:31 AM
Surr: DNOP	105	69-147		%Rec	1	5/13/2023 2:50:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 8:55:10 AM
Surr: BFB	68.2	15-244		%Rec	1	5/13/2023 8:55:10 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 8:55:10 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 8:55:10 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 8:55:10 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/13/2023 8:55:10 AM
Surr: 4-Bromofluorobenzene	83.4	39.1-146		%Rec	1	5/13/2023 8:55:10 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 4:09:41 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-18 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 2:55:00 PM
Lab ID: 2305494-018 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/13/2023 3:01:30 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/13/2023 3:01:30 AM
Surr: DNOP	96.8	69-147		%Rec	1	5/13/2023 3:01:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/13/2023 9:18:30 AM
Surr: BFB	72.0	15-244		%Rec	1	5/13/2023 9:18:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 9:18:30 AM
Toluene	ND	0.050		mg/Kg	1	5/13/2023 9:18:30 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/13/2023 9:18:30 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/13/2023 9:18:30 AM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/13/2023 9:18:30 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	170	60		mg/Kg	20	5/16/2023 4:22:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/8/2023 3:00:00 PM
Lab ID: 2305494-019 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/13/2023 3:12:28 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/13/2023 3:12:28 AM
Surr: DNOP	89.8	69-147		%Rec	1	5/13/2023 3:12:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/13/2023 9:41:53 AM
Surr: BFB	89.8	15-244		%Rec	1	5/13/2023 9:41:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/13/2023 9:41:53 AM
Toluene	ND	0.048		mg/Kg	1	5/13/2023 9:41:53 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/13/2023 9:41:53 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/13/2023 9:41:53 AM
Surr: 4-Bromofluorobenzene	88.0	39.1-146		%Rec	1	5/13/2023 9:41:53 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 4:34:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-19 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 3:05:00 PM
Lab ID: 2305494-020 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/13/2023 3:23:25 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/13/2023 3:23:25 AM
Surr: DNOP	91.1	69-147		%Rec	1	5/13/2023 3:23:25 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/13/2023 10:05:11 AM
Surr: BFB	72.3	15-244		%Rec	1	5/13/2023 10:05:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/13/2023 10:05:11 AM
Toluene	ND	0.050		mg/Kg	1	5/13/2023 10:05:11 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/13/2023 10:05:11 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/13/2023 10:05:11 AM
Surr: 4-Bromofluorobenzene	84.5	39.1-146		%Rec	1	5/13/2023 10:05:11 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 4:46:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-19 3.5'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 3:10:00 PM
Lab ID: 2305494-021 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/12/2023 7:46:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 7:46:05 PM
Surr: DNOP	88.4	69-147		%Rec	1	5/12/2023 7:46:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 2:24:00 AM
Surr: BFB	85.1	15-244		%Rec	1	5/16/2023 2:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 2:24:00 AM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 2:24:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 2:24:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 2:24:00 AM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/16/2023 2:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 4:59:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-20 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/8/2023 3:20:00 PM
Lab ID: 2305494-022 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	3000	100		mg/Kg	10	5/12/2023 4:42:14 PM
Motor Oil Range Organics (MRO)	1900	500		mg/Kg	10	5/12/2023 4:42:14 PM
Surr: DNOP	0	69-147	S	%Rec	10	5/12/2023 4:42:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 3:29:00 AM
Surr: BFB	87.8	15-244		%Rec	1	5/16/2023 3:29:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 3:29:00 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 3:29:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 3:29:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 3:29:00 AM
Surr: 4-Bromofluorobenzene	83.3	39.1-146		%Rec	1	5/16/2023 3:29:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 5:11:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-20 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 3:25:00 PM
Lab ID: 2305494-023 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/12/2023 8:07:49 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/12/2023 8:07:49 PM
Surr: DNOP	88.1	69-147		%Rec	1	5/12/2023 8:07:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 4:34:00 AM
Surr: BFB	86.0	15-244		%Rec	1	5/16/2023 4:34:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 4:34:00 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 4:34:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 4:34:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 4:34:00 AM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	5/16/2023 4:34:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	5/16/2023 5:24:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305494**
Date Reported: **5/23/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-20 3.5'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/8/2023 3:30:00 PM
Lab ID: 2305494-024 **Matrix:** SOIL **Received Date:** 5/10/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	11	9.2		mg/Kg	1	5/12/2023 8:18:47 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/12/2023 8:18:47 PM
Surr: DNOP	90.6	69-147		%Rec	1	5/12/2023 8:18:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 4:56:00 AM
Surr: BFB	85.7	15-244		%Rec	1	5/16/2023 4:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 4:56:00 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 4:56:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 4:56:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 4:56:00 AM
Surr: 4-Bromofluorobenzene	85.4	39.1-146		%Rec	1	5/16/2023 4:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	430	60		mg/Kg	20	5/16/2023 5:36:33 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74968**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **74968**	RunNo: **96777**							
Prep Date: **5/15/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509658**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74968**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **74968**	RunNo: **96777**							
Prep Date: **5/15/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509659**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Sample ID: **MB-74979**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **74979**	RunNo: **96806**							
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3511156**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74979**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **74979**	RunNo: **96806**							
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3511157**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305494-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-13 2'**	Batch ID: **74890**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508330** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.8	48.92	0	85.9	54.2	135			
Surr: DNOP	4.4		4.892		90.7	69	147			

Sample ID: **2305494-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-13 2'**	Batch ID: **74890**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508331** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	49.95	0	83.5	54.2	135	0.677	29.2	
Surr: DNOP	4.4		4.995		87.7	69	147	0	0	

Sample ID: **LCS-74890**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74890**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.4	61.9	130			
Surr: DNOP	4.6		5.000		92.8	69	147			

Sample ID: **LCS-74902**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74902**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508385** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	61.9	130			
Surr: DNOP	4.4		5.000		88.6	69	147			

Sample ID: **MB-74890**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74890**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508386** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		114	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74902**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74902**	RunNo: **96715**
Prep Date: **5/11/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508387** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.2		10.00		82.2	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74868**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74868**	RunNo: **96712**
Prep Date: **5/10/2023**	Analysis Date: **5/12/2023**	SeqNo: **3508415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.6	70	130			
Surr: BFB	4600		1000		464	15	244			S

Sample ID: **mb-74868**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74868**	RunNo: **96712**
Prep Date: **5/10/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508416** 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	630		1000		62.6	15	244			

Sample ID: **2305494-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-13 0 '**	Batch ID: **74868**	RunNo: **96712**
Prep Date: **5/10/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508432** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.49	0	78.3	70	130			
Surr: BFB	4700		979.4		478	15	244			S

Sample ID: **2305494-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-13 0 '**	Batch ID: **74868**	RunNo: **96712**
Prep Date: **5/10/2023**	Analysis Date: **5/13/2023**	SeqNo: **3508433** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.49	0	77.1	70	130	1.54	20	
Surr: BFB	4500		979.4		463	15	244	0	0	S

Sample ID: **LCS-74888**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74888**	RunNo: **96758**
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509411** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	77.2	70	130			
Surr: BFB	1900		1000		194	15	244			

Sample ID: **MB-74888**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74888**	RunNo: **96758**
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509412** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74888**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74888**	RunNo: **96758**
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509412** 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	860		1000		86.5	15	244			

Sample ID: **2305494-021AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-19 3.5'**	Batch ID: **74888**	RunNo: **96798**
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510971** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	4.9	24.73	0	67.4	70	130			S
Surr: BFB	1800		989.1		178	15	244			

Sample ID: **2305494-021AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-19 3.5'**	Batch ID: **74888**	RunNo: **96798**
Prep Date: **5/11/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510972** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	5.0	24.90	0	64.5	70	130	3.79	20	S
Surr: BFB	1800		996.0		178	15	244	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74868** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **74868** RunNo: **96712**

Prep Date: **5/10/2023** Analysis Date: **5/12/2023** SeqNo: **3508463** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.74	0.025	1.000	0	74.0	70	130			
Toluene	0.78	0.050	1.000	0	78.2	70	130			
Ethylbenzene	0.79	0.050	1.000	0	78.7	70	130			
Xylenes, Total	2.4	0.10	3.000	0	79.1	70	130			
Surr: 4-Bromofluorobenzene	0.85		1.000		85.0	39.1	146			

Sample ID: **mb-74868** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **74868** RunNo: **96712**

Prep Date: **5/10/2023** Analysis Date: **5/13/2023** SeqNo: **3508464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.81		1.000		81.1	39.1	146			

Sample ID: **2305494-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-13 2'** Batch ID: **74868** RunNo: **96712**

Prep Date: **5/10/2023** Analysis Date: **5/13/2023** SeqNo: **3508467** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.72	0.024	0.9542	0	75.0	70	130			
Toluene	0.76	0.048	0.9542	0.01598	78.5	70	130			
Ethylbenzene	0.78	0.048	0.9542	0	81.6	70	130			
Xylenes, Total	2.3	0.095	2.863	0	81.8	70	130			
Surr: 4-Bromofluorobenzene	0.80		0.9542		84.2	39.1	146			

Sample ID: **2305494-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-13 2'** Batch ID: **74868** RunNo: **96712**

Prep Date: **5/10/2023** Analysis Date: **5/13/2023** SeqNo: **3508468** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.024	0.9551	0	70.3	70	130	6.30	20	
Toluene	0.72	0.048	0.9551	0.01598	73.7	70	130	5.99	20	
Ethylbenzene	0.73	0.048	0.9551	0	76.2	70	130	6.71	20	
Xylenes, Total	2.2	0.096	2.865	0	76.9	70	130	6.12	20	
Surr: 4-Bromofluorobenzene	0.82		0.9551		85.5	39.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305494**

23-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74888** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **74888** RunNo: **96758**

Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.4	70	130			
Toluene	0.89	0.050	1.000	0	89.3	70	130			
Ethylbenzene	0.87	0.050	1.000	0	86.5	70	130			
Xylenes, Total	2.6	0.10	3.000	0	85.6	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		85.7	39.1	146			

Sample ID: **MB-74888** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **74888** RunNo: **96758**

Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.84		1.000		84.0	39.1	146			

Sample ID: **2305494-022ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-20 0'** Batch ID: **74888** RunNo: **96758**

Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509468** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9833	0	85.5	70	130			
Toluene	0.87	0.049	0.9833	0	88.6	70	130			
Ethylbenzene	0.86	0.049	0.9833	0	87.7	70	130			
Xylenes, Total	2.6	0.098	2.950	0	88.5	70	130			
Surr: 4-Bromofluorobenzene	0.85		0.9833		86.2	39.1	146			

Sample ID: **2305494-022amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-20 0'** Batch ID: **74888** RunNo: **96758**

Prep Date: **5/11/2023** Analysis Date: **5/16/2023** SeqNo: **3509469** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	0.9921	0	87.2	70	130	2.85	20	
Toluene	0.86	0.050	0.9921	0	86.5	70	130	1.59	20	
Ethylbenzene	0.84	0.050	0.9921	0	84.2	70	130	3.17	20	
Xylenes, Total	2.5	0.099	2.976	0	84.1	70	130	4.19	20	
Surr: 4-Bromofluorobenzene	0.86		0.9921		86.6	39.1	146	0	0	

Qualifiers:

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

Page 202 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2305494

RcptNo: 1

Received By: Tracy Casarrubias 5/10/2023 7:40:00 AM

Completed By: Tracy Casarrubias 5/10/2023 8:19:04 AM

Reviewed By: KPA 5.10.23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: TMC 5/10/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address, phone number and Email are missing on COC- TMC 5/10/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes	Morty		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Cotton Draw Unit 1-12 CTB

Project #:

23E-02423

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☒ Yes ☐ No mark

# of Coolers: 1

Cooler Temp(including CF): 3.3-0=3.3°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305494	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/08/23	11:20	Soil	BH22-13 0'	1, 4oz jar		001	X	X					X			
05/08/23	11:25	Soil	BH22-13 2'	1, 4oz jar		002	X	X					X			
05/08/23	11:30	Soil	BH22-13 4'	1, 4oz jar		003	X	X					X			
05/08/23	11:40	Soil	BH22-14 0'	1, 4oz jar		004	X	X					X			
05/08/23	11:45	Soil	BH22-14 2'	1, 4oz jar		005	X	X					X			
05/08/23	11:50	Soil	BH22-14 4'	1, 4oz jar		006	X	X					X			
05/08/23	12:05	Soil	BH22-15 0'	1, 4oz jar		007	X	X					X			
05/08/23	12:10	Soil	BH22-15 2'	1, 4oz jar		008	X	X					X			
05/08/23	12:15	Soil	BH22-15 4'	1, 4oz jar		009	X	X					X			
05/08/23	12:30	Soil	BH22-16 0'	1, 4oz jar		010	X	X					X			
05/08/23	12:35	Soil	BH22-16 2'	1, 4oz jar		011	X	X					X			
05/08/23	12:40	Soil	BH22-16 4'	1, 4oz jar		012	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-9-23	07:30	Lab Pullman				
5/9/23	1900			Courier	5/10/23	7:40

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

1/2

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

Chain-of-Custody Record

Client: Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Cotton Draw Unit 1-12 CTB

Project #:

23E-02423

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☒ Yes ☐ No many

# of Coolers: 1

Cooler Temp(including CF): 3.3-0=3.3°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305494	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/08/23	14:30	Soil	BH22-17 0'	1, 4oz jar		013	X	X					X			
05/08/23	14:35	Soil	BH22-17 2'	1, 4oz jar		014	X	X					X			
05/08/23	14:40	Soil	BH22-17 4'	1, 4oz jar		015	X	X					X			
05/08/23	14:45	Soil	BH22-18 0'	1, 4oz jar		016	X	X					X			
05/08/23	14:50	Soil	BH22-18 2'	1, 4oz jar		017	X	X					X			
05/08/23	14:55	Soil	BH22-18 4'	1, 4oz jar		018	X	X					X			
05/08/23	15:00	Soil	BH22-19 0'	1, 4oz jar		019	X	X					X			
05/08/23	15:05	Soil	BH22-19 2'	1, 4oz jar		020	X	X					X			
05/08/23	15:10	Soil	BH22-19 3.5'	1, 4oz jar		021	X	X					X			
05/08/23	15:20	Soil	BH22-20 0'	1, 4oz jar		022	X	X					X			
05/08/23	15:25	Soil	BH22-20 2'	1, 4oz jar		023	X	X					X			
05/08/23	15:30	Soil	BH22-20 3.5'	1, 4oz jar		024	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-9-2023	07:00	[signature]	[signature]		5/9/23	700
5/9/23	1900	[signature]	[signature]	Courier	5/10/23	7:40

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

2/2

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 24, 2023

Kent Stallings

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2305697

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 36 sample(s) on 5/12/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-32 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 8:20:00 AM
Lab ID: 2305697-001 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 1:07:12 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 1:07:12 AM
Surr: DNOP	86.5	69-147		%Rec	1	5/17/2023 1:07:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 12:39:05 AM
Surr: BFB	81.6	15-244		%Rec	1	5/16/2023 12:39:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 12:39:05 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 12:39:05 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 12:39:05 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 12:39:05 AM
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/16/2023 12:39:05 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 2:23:17 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-32 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 8:25:00 AM
Lab ID: 2305697-002 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 1:18:18 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 1:18:18 AM
Surr: DNOP	96.8	69-147		%Rec	1	5/17/2023 1:18:18 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 1:49:00 AM
Surr: BFB	78.9	15-244		%Rec	1	5/16/2023 1:49:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 1:49:00 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 1:49:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 1:49:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/16/2023 1:49:00 AM
Surr: 4-Bromofluorobenzene	82.8	39.1-146		%Rec	1	5/16/2023 1:49:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 2:35:37 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-32 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 8:30:00 AM
Lab ID: 2305697-003 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/17/2023 1:29:23 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/17/2023 1:29:23 AM
Surr: DNOP	99.2	69-147		%Rec	1	5/17/2023 1:29:23 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 2:59:24 AM
Surr: BFB	67.2	15-244		%Rec	1	5/16/2023 2:59:24 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 2:59:24 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 2:59:24 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 2:59:24 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/16/2023 2:59:24 AM
Surr: 4-Bromofluorobenzene	79.9	39.1-146		%Rec	1	5/16/2023 2:59:24 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1800	60		mg/Kg	20	5/18/2023 3:12:40 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-33 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 8:40:00 AM
Lab ID: 2305697-004 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/17/2023 1:40:26 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/17/2023 1:40:26 AM
Surr: DNOP	102	69-147		%Rec	1	5/17/2023 1:40:26 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 3:22:48 AM
Surr: BFB	76.8	15-244		%Rec	1	5/16/2023 3:22:48 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 3:22:48 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 3:22:48 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 3:22:48 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 3:22:48 AM
Surr: 4-Bromofluorobenzene	81.9	39.1-146		%Rec	1	5/16/2023 3:22:48 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 3:49:41 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-33 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 8:45:00 AM
Lab ID: 2305697-005 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2023 1:51:29 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 1:51:29 AM
Surr: DNOP	99.3	69-147		%Rec	1	5/17/2023 1:51:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 3:46:11 AM
Surr: BFB	83.9	15-244		%Rec	1	5/16/2023 3:46:11 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 3:46:11 AM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 3:46:11 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 3:46:11 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2023 3:46:11 AM
Surr: 4-Bromofluorobenzene	83.4	39.1-146		%Rec	1	5/16/2023 3:46:11 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 4:26:42 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-33 3'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 8:50:00 AM
Lab ID: 2305697-006 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/17/2023 2:02:29 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 2:02:29 AM
Surr: DNOP	104	69-147		%Rec	1	5/17/2023 2:02:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 4:09:28 AM
Surr: BFB	79.4	15-244		%Rec	1	5/16/2023 4:09:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 4:09:28 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 4:09:28 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 4:09:28 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 4:09:28 AM
Surr: 4-Bromofluorobenzene	82.5	39.1-146		%Rec	1	5/16/2023 4:09:28 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1600	60		mg/Kg	20	5/18/2023 5:03:45 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-34 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 9:00:00 AM
Lab ID: 2305697-007 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/17/2023 2:13:29 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 2:13:29 AM
Surr: DNOP	96.1	69-147		%Rec	1	5/17/2023 2:13:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 4:32:47 AM
Surr: BFB	81.5	15-244		%Rec	1	5/16/2023 4:32:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 4:32:47 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 4:32:47 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 4:32:47 AM
Xylenes, Total	ND	0.093		mg/Kg	1	5/16/2023 4:32:47 AM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/16/2023 4:32:47 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 5:40:48 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-34 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:05:00 AM
Lab ID: 2305697-008 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2023 2:24:28 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 2:24:28 AM
Surr: DNOP	98.8	69-147		%Rec	1	5/17/2023 2:24:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 4:56:07 AM
Surr: BFB	80.1	15-244		%Rec	1	5/16/2023 4:56:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 4:56:07 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 4:56:07 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 4:56:07 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/16/2023 4:56:07 AM
Surr: 4-Bromofluorobenzene	82.8	39.1-146		%Rec	1	5/16/2023 4:56:07 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 8:18:07 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-34 3'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:10:00 AM
Lab ID: 2305697-009 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 2:46:10 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 2:46:10 AM
Surr: DNOP	99.9	69-147		%Rec	1	5/17/2023 2:46:10 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 10:27:36 AM
Surr: BFB	86.7	15-244		%Rec	1	5/16/2023 10:27:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 10:27:36 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 10:27:36 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 10:27:36 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 10:27:36 AM
Surr: 4-Bromofluorobenzene	83.5	39.1-146		%Rec	1	5/16/2023 10:27:36 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 8:30:27 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-35 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:15:00 AM
Lab ID: 2305697-010 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/17/2023 2:57:06 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/17/2023 2:57:06 AM
Surr: DNOP	97.3	69-147		%Rec	1	5/17/2023 2:57:06 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/16/2023 11:14:19 AM
Surr: BFB	75.6	15-244		%Rec	1	5/16/2023 11:14:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/16/2023 11:14:19 AM
Toluene	ND	0.047		mg/Kg	1	5/16/2023 11:14:19 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/16/2023 11:14:19 AM
Xylenes, Total	ND	0.093		mg/Kg	1	5/16/2023 11:14:19 AM
Surr: 4-Bromofluorobenzene	80.9	39.1-146		%Rec	1	5/16/2023 11:14:19 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 8:42:48 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-35 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:20:00 AM
Lab ID: 2305697-011 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2023 3:08:00 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 3:08:00 AM
Surr: DNOP	98.9	69-147		%Rec	1	5/17/2023 3:08:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 11:37:47 AM
Surr: BFB	89.1	15-244		%Rec	1	5/16/2023 11:37:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 11:37:47 AM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 11:37:47 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 11:37:47 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 11:37:47 AM
Surr: 4-Bromofluorobenzene	83.7	39.1-146		%Rec	1	5/16/2023 11:37:47 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 8:55:08 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-35 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 9:25:00 AM
Lab ID: 2305697-012 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 3:18:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 3:18:52 AM
Surr: DNOP	99.2	69-147		%Rec	1	5/17/2023 3:18:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 12:01:07 PM
Surr: BFB	84.0	15-244		%Rec	1	5/16/2023 12:01:07 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 12:01:07 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 12:01:07 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 12:01:07 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 12:01:07 PM
Surr: 4-Bromofluorobenzene	81.3	39.1-146		%Rec	1	5/16/2023 12:01:07 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	61	60		mg/Kg	20	5/18/2023 9:07:28 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-36 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:40:00 AM
Lab ID: 2305697-013 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	31	9.2		mg/Kg	1	5/17/2023 3:29:45 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/17/2023 3:29:45 AM
Surr: DNOP	101	69-147		%Rec	1	5/17/2023 3:29:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 12:24:32 PM
Surr: BFB	83.8	15-244		%Rec	1	5/16/2023 12:24:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 12:24:32 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 12:24:32 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 12:24:32 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 12:24:32 PM
Surr: 4-Bromofluorobenzene	81.9	39.1-146		%Rec	1	5/16/2023 12:24:32 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	360	60		mg/Kg	20	5/18/2023 9:19:48 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-36 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 9:45:00 AM
Lab ID: 2305697-014 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/17/2023 3:40:35 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 3:40:35 AM
Surr: DNOP	99.6	69-147		%Rec	1	5/17/2023 3:40:35 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2023 12:47:56 PM
Surr: BFB	85.6	15-244		%Rec	1	5/16/2023 12:47:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 12:47:56 PM
Toluene	ND	0.048		mg/Kg	1	5/16/2023 12:47:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2023 12:47:56 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 12:47:56 PM
Surr: 4-Bromofluorobenzene	82.7	39.1-146		%Rec	1	5/16/2023 12:47:56 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	690	60		mg/Kg	20	5/18/2023 9:32:09 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-36 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 9:50:00 AM
Lab ID: 2305697-015 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 3:51:20 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 3:51:20 AM
Surr: DNOP	99.7	69-147		%Rec	1	5/17/2023 3:51:20 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2023 1:11:21 PM
Surr: BFB	99.4	15-244		%Rec	1	5/16/2023 1:11:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:11:21 PM
Toluene	ND	0.050		mg/Kg	1	5/16/2023 1:11:21 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/16/2023 1:11:21 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/16/2023 1:11:21 PM
Surr: 4-Bromofluorobenzene	80.4	39.1-146		%Rec	1	5/16/2023 1:11:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	2600	150		mg/Kg	50	5/19/2023 10:04:14 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-37 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 10:00:00 AM
Lab ID: 2305697-016 **Matrix:** SOIL
Received Date: 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	460	9.9		mg/Kg	1	5/17/2023 4:02:00 AM
Motor Oil Range Organics (MRO)	470	49		mg/Kg	1	5/17/2023 4:02:00 AM
Surr: DNOP	106	69-147		%Rec	1	5/17/2023 4:02:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 1:34:53 PM
Surr: BFB	87.7	15-244		%Rec	1	5/16/2023 1:34:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:34:53 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 1:34:53 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 1:34:53 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/16/2023 1:34:53 PM
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/16/2023 1:34:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	650	60		mg/Kg	20	5/18/2023 9:56:50 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-37 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 10:05:00 AM
Lab ID: 2305697-017 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2023 4:23:19 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 4:23:19 AM
Surr: DNOP	105	69-147		%Rec	1	5/17/2023 4:23:19 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 1:58:19 PM
Surr: BFB	88.9	15-244		%Rec	1	5/16/2023 1:58:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/16/2023 1:58:19 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 1:58:19 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 1:58:19 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/16/2023 1:58:19 PM
Surr: 4-Bromofluorobenzene	82.9	39.1-146		%Rec	1	5/16/2023 1:58:19 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1400	60		mg/Kg	20	5/18/2023 10:09:11 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-37 3'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 10:10:00 AM
Lab ID: 2305697-018 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/17/2023 4:33:55 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/17/2023 4:33:55 AM
Surr: DNOP	93.0	69-147		%Rec	1	5/17/2023 4:33:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/16/2023 2:21:52 PM
Surr: BFB	91.8	15-244		%Rec	1	5/16/2023 2:21:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/16/2023 2:21:52 PM
Toluene	ND	0.049		mg/Kg	1	5/16/2023 2:21:52 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/16/2023 2:21:52 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/16/2023 2:21:52 PM
Surr: 4-Bromofluorobenzene	83.0	39.1-146		%Rec	1	5/16/2023 2:21:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	4200	150		mg/Kg	50	5/19/2023 10:16:38 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-38 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 10:20:00 AM
Lab ID: 2305697-019 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/17/2023 1:14:55 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/17/2023 1:14:55 AM
Surr: DNOP	88.5	69-147		%Rec	1	5/17/2023 1:14:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/19/2023 11:51:13 AM
Surr: BFB	78.7	15-244		%Rec	1	5/19/2023 11:51:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/19/2023 11:51:13 AM
Toluene	ND	0.046		mg/Kg	1	5/19/2023 11:51:13 AM
Ethylbenzene	ND	0.046		mg/Kg	1	5/19/2023 11:51:13 AM
Xylenes, Total	ND	0.092		mg/Kg	1	5/19/2023 11:51:13 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/19/2023 11:51:13 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 10:58:35 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-38 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 10:25:00 AM
Lab ID: 2305697-020 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/17/2023 1:38:42 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 1:38:42 AM
Surr: DNOP	88.6	69-147		%Rec	1	5/17/2023 1:38:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/19/2023 12:14:35 PM
Surr: BFB	73.0	15-244		%Rec	1	5/19/2023 12:14:35 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/19/2023 12:14:35 PM
Toluene	ND	0.050		mg/Kg	1	5/19/2023 12:14:35 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/19/2023 12:14:35 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/19/2023 12:14:35 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	5/19/2023 12:14:35 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:10:55 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-38 3'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 10:30:00 AM
Lab ID: 2305697-021 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/17/2023 2:02:28 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 2:02:28 AM
Surr: DNOP	88.1	69-147		%Rec	1	5/17/2023 2:02:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/19/2023 12:37:53 PM
Surr: BFB	87.6	15-244		%Rec	1	5/19/2023 12:37:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 12:37:53 PM
Toluene	ND	0.048		mg/Kg	1	5/19/2023 12:37:53 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/19/2023 12:37:53 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/19/2023 12:37:53 PM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	5/19/2023 12:37:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	110	60		mg/Kg	20	5/18/2023 11:23:16 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-39 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 10:35:00 AM
Lab ID: 2305697-022 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/17/2023 2:26:13 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/17/2023 2:26:13 AM
Surr: DNOP	87.2	69-147		%Rec	1	5/17/2023 2:26:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/19/2023 1:01:20 PM
Surr: BFB	78.0	15-244		%Rec	1	5/19/2023 1:01:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 1:01:20 PM
Toluene	ND	0.048		mg/Kg	1	5/19/2023 1:01:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/19/2023 1:01:20 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/19/2023 1:01:20 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/19/2023 1:01:20 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:35:36 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-39 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 10:40:00 AM
Lab ID: 2305697-023 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/17/2023 6:41:18 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 6:41:18 PM
Surr: DNOP	98.6	69-147		%Rec	1	5/17/2023 6:41:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/17/2023 1:47:00 PM
Surr: BFB	91.3	15-244		%Rec	1	5/17/2023 1:47:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/17/2023 1:47:00 PM
Toluene	ND	0.050		mg/Kg	1	5/17/2023 1:47:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/17/2023 1:47:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/17/2023 1:47:00 PM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/17/2023 1:47:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:47:57 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-39 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 10:45:00 AM
Lab ID: 2305697-024 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/17/2023 6:52:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 6:52:21 PM
Surr: DNOP	137	69-147		%Rec	1	5/17/2023 6:52:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/17/2023 2:53:00 PM
Surr: BFB	89.6	15-244		%Rec	1	5/17/2023 2:53:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 2:53:00 PM
Toluene	ND	0.048		mg/Kg	1	5/17/2023 2:53:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/17/2023 2:53:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/17/2023 2:53:00 PM
Surr: 4-Bromofluorobenzene	85.8	39.1-146		%Rec	1	5/17/2023 2:53:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	97	60		mg/Kg	20	5/18/2023 12:00:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-40 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 11:00:00 AM
Lab ID: 2305697-025 **Matrix:** SOIL
Received Date: 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	70	9.8		mg/Kg	1	5/17/2023 7:03:23 PM
Motor Oil Range Organics (MRO)	110	49		mg/Kg	1	5/17/2023 7:03:23 PM
Surr: DNOP	98.9	69-147		%Rec	1	5/17/2023 7:03:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/17/2023 3:58:00 PM
Surr: BFB	85.8	15-244		%Rec	1	5/17/2023 3:58:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 3:58:00 PM
Toluene	ND	0.047		mg/Kg	1	5/17/2023 3:58:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/17/2023 3:58:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/17/2023 3:58:00 PM
Surr: 4-Bromofluorobenzene	85.1	39.1-146		%Rec	1	5/17/2023 3:58:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	2300	150		mg/Kg	50	5/19/2023 10:29:02 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-40 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 11:05:00 AM
Lab ID: 2305697-026 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/17/2023 7:25:12 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 7:25:12 PM
Surr: DNOP	91.9	69-147		%Rec	1	5/17/2023 7:25:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/17/2023 4:20:00 PM
Surr: BFB	91.4	15-244		%Rec	1	5/17/2023 4:20:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 4:20:00 PM
Toluene	ND	0.047		mg/Kg	1	5/17/2023 4:20:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/17/2023 4:20:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/17/2023 4:20:00 PM
Surr: 4-Bromofluorobenzene	86.4	39.1-146		%Rec	1	5/17/2023 4:20:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2300	60		mg/Kg	20	5/18/2023 1:14:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-40 3'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 11:10:00 AM
Lab ID: 2305697-027 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	14	9.0		mg/Kg	1	5/17/2023 7:36:11 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/17/2023 7:36:11 PM
Surr: DNOP	98.5	69-147		%Rec	1	5/17/2023 7:36:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/17/2023 4:41:00 PM
Surr: BFB	84.2	15-244		%Rec	1	5/17/2023 4:41:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 4:41:00 PM
Toluene	ND	0.048		mg/Kg	1	5/17/2023 4:41:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/17/2023 4:41:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/17/2023 4:41:00 PM
Surr: 4-Bromofluorobenzene	82.1	39.1-146		%Rec	1	5/17/2023 4:41:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	2700	150		mg/Kg	50	5/19/2023 10:41:27 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-41 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 11:20:00 AM
Lab ID: 2305697-028 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/17/2023 7:47:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 7:47:10 PM
Surr: DNOP	99.6	69-147		%Rec	1	5/17/2023 7:47:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/17/2023 5:03:00 PM
Surr: BFB	83.4	15-244		%Rec	1	5/17/2023 5:03:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 5:03:00 PM
Toluene	ND	0.046		mg/Kg	1	5/17/2023 5:03:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/17/2023 5:03:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/17/2023 5:03:00 PM
Surr: 4-Bromofluorobenzene	82.2	39.1-146		%Rec	1	5/17/2023 5:03:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 1:39:02 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-41 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 11:25:00 AM
Lab ID: 2305697-029 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/17/2023 7:58:09 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2023 7:58:09 PM
Surr: DNOP	96.4	69-147		%Rec	1	5/17/2023 7:58:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/17/2023 5:25:00 PM
Surr: BFB	87.1	15-244		%Rec	1	5/17/2023 5:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/17/2023 5:25:00 PM
Toluene	ND	0.049		mg/Kg	1	5/17/2023 5:25:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/17/2023 5:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/17/2023 5:25:00 PM
Surr: 4-Bromofluorobenzene	83.4	39.1-146		%Rec	1	5/17/2023 5:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 1:51:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-41 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 11:30:00 AM
Lab ID: 2305697-030 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2023 8:09:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 8:09:09 PM
Surr: DNOP	97.3	69-147		%Rec	1	5/17/2023 8:09:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/17/2023 5:46:00 PM
Surr: BFB	84.6	15-244		%Rec	1	5/17/2023 5:46:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 5:46:00 PM
Toluene	ND	0.049		mg/Kg	1	5/17/2023 5:46:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/17/2023 5:46:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/17/2023 5:46:00 PM
Surr: 4-Bromofluorobenzene	83.5	39.1-146		%Rec	1	5/17/2023 5:46:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	470	59		mg/Kg	20	5/18/2023 2:03:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-42 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 11:40:00 AM
Lab ID: 2305697-031 **Matrix:** SOIL
Received Date: 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/17/2023 8:20:08 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/17/2023 8:20:08 PM
Surr: DNOP	77.8	69-147		%Rec	1	5/17/2023 8:20:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/17/2023 6:08:00 PM
Surr: BFB	84.0	15-244		%Rec	1	5/17/2023 6:08:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 6:08:00 PM
Toluene	ND	0.046		mg/Kg	1	5/17/2023 6:08:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/17/2023 6:08:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	5/17/2023 6:08:00 PM
Surr: 4-Bromofluorobenzene	83.1	39.1-146		%Rec	1	5/17/2023 6:08:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 2:40:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-42 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 11:45:00 AM
Lab ID: 2305697-032 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/17/2023 8:31:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 8:31:07 PM
Surr: DNOP	92.0	69-147		%Rec	1	5/17/2023 8:31:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/17/2023 6:29:00 PM
Surr: BFB	85.7	15-244		%Rec	1	5/17/2023 6:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 6:29:00 PM
Toluene	ND	0.046		mg/Kg	1	5/17/2023 6:29:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/17/2023 6:29:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/17/2023 6:29:00 PM
Surr: 4-Bromofluorobenzene	83.8	39.1-146		%Rec	1	5/17/2023 6:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	160	60		mg/Kg	20	5/18/2023 2:53:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-42 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 11:50:00 AM
Lab ID: 2305697-033 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 8:42:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 8:42:05 PM
Surr: DNOP	96.3	69-147		%Rec	1	5/17/2023 8:42:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/17/2023 7:35:00 PM
Surr: BFB	83.6	15-244		%Rec	1	5/17/2023 7:35:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 7:35:00 PM
Toluene	ND	0.046		mg/Kg	1	5/17/2023 7:35:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/17/2023 7:35:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	5/17/2023 7:35:00 PM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/17/2023 7:35:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	2200	150		mg/Kg	50	5/19/2023 10:53:51 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-43 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 12:00:00 PM
Lab ID: 2305697-034 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 8:53:03 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 8:53:03 PM
Surr: DNOP	81.2	69-147		%Rec	1	5/17/2023 8:53:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/17/2023 7:56:00 PM
Surr: BFB	89.9	15-244		%Rec	1	5/17/2023 7:56:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	5/17/2023 7:56:00 PM
Toluene	ND	0.047		mg/Kg	1	5/17/2023 7:56:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/17/2023 7:56:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/17/2023 7:56:00 PM
Surr: 4-Bromofluorobenzene	85.7	39.1-146		%Rec	1	5/17/2023 7:56:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2100	60		mg/Kg	20	5/18/2023 3:42:30 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-43 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/10/2023 12:05:00 PM
Lab ID: 2305697-035 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 9:03:54 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2023 9:03:54 PM
Surr: DNOP	135	69-147		%Rec	1	5/17/2023 9:03:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/17/2023 8:18:00 PM
Surr: BFB	86.3	15-244		%Rec	1	5/17/2023 8:18:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/17/2023 8:18:00 PM
Toluene	ND	0.049		mg/Kg	1	5/17/2023 8:18:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/17/2023 8:18:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/17/2023 8:18:00 PM
Surr: 4-Bromofluorobenzene	81.5	39.1-146		%Rec	1	5/17/2023 8:18:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	2400	60		mg/Kg	20	5/18/2023 3:54:51 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305697**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-43 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/10/2023 12:10:00 PM
Lab ID: 2305697-036 **Matrix:** SOIL **Received Date:** 5/12/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/17/2023 9:14:49 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2023 9:14:49 PM
Surr: DNOP	98.9	69-147		%Rec	1	5/17/2023 9:14:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/17/2023 8:39:00 PM
Surr: BFB	84.7	15-244		%Rec	1	5/17/2023 8:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/17/2023 8:39:00 PM
Toluene	ND	0.047		mg/Kg	1	5/17/2023 8:39:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/17/2023 8:39:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/17/2023 8:39:00 PM
Surr: 4-Bromofluorobenzene	83.1	39.1-146		%Rec	1	5/17/2023 8:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1100	60		mg/Kg	20	5/18/2023 4:07:12 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75006**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75006**	RunNo: **96821**							
Prep Date: **5/17/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512943**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75006**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75006**	RunNo: **96821**							
Prep Date: **5/17/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512944**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Sample ID: **MB-75015**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75015**	RunNo: **96821**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3512975**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75015**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75015**	RunNo: **96821**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3512976**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Sample ID: **MB-75028**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75028**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514287**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75028**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75028**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514288**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74969**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510134** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		94.9	69	147			

Sample ID: **LCS-74977**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74977**	RunNo: **96783**
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510137** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.2	61.9	130			
Surr: DNOP	4.6		5.000		91.8	69	147			

Sample ID: **MB-74977**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74977**	RunNo: **96783**
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510138** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		93.9	69	147			

Sample ID: **MB-74975**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74975**	RunNo: **96800**
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510665** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.1		10.00		71.0	69	147			

Sample ID: **LCS-74975**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74975**	RunNo: **96800**
Prep Date: **5/16/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510666** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.1	61.9	130			
Surr: DNOP	3.9		5.000		78.7	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74969**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510973** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.3	69	147			

Sample ID: **LCS-74973**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74973**	RunNo: **96825**
Prep Date: **5/16/2023**	Analysis Date: **5/17/2023**	SeqNo: **3511917** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.8	61.9	130			
Surr: DNOP	4.7		5.000		93.4	69	147			

Sample ID: **MB-74973**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74973**	RunNo: **96825**
Prep Date: **5/16/2023**	Analysis Date: **5/17/2023**	SeqNo: **3511920** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.2	69	147			

Sample ID: **2305697-023AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-39 2'**	Batch ID: **74973**	RunNo: **96825**
Prep Date: **5/16/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512538** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.5	47.44	0	94.2	54.2	135			
Surr: DNOP	4.4		4.744		93.8	69	147			

Sample ID: **2305697-023AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-39 2'**	Batch ID: **74973**	RunNo: **96825**
Prep Date: **5/16/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.3	46.64	0	92.0	54.2	135	4.04	29.2	
Surr: DNOP	4.1		4.664		87.1	69	147	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74930**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **74930**	RunNo: **96762**							
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509509**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	70	130			
Surr: BFB	4800		1000		483	15	244			S

Sample ID: **mb-74930**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **74930**	RunNo: **96762**							
Prep Date: **5/12/2023**	Analysis Date: **5/15/2023**	SeqNo: **3509510**	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	810		1000		81.0	15	244			

Sample ID: **2305697-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH23-32 0'**	Batch ID: **74930**	RunNo: **96762**							
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509554**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.37	0	79.9	70	130			
Surr: BFB	4800		974.7		495	15	244			S

Sample ID: **2305697-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH23-32 0'**	Batch ID: **74930**	RunNo: **96762**							
Prep Date: **5/12/2023**	Analysis Date: **5/16/2023**	SeqNo: **3509555**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.41	0	78.8	70	130	1.17	20	
Surr: BFB	4700		976.6		485	15	244	0	0	S

Sample ID: **mb-74959**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **74959**	RunNo: **96808**							
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512645**	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	860		1000		86.1	15	244			

Sample ID: **lcs-74959**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **74959**	RunNo: **96808**							
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512646**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74959**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512646** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.5	70	130			
Surr: BFB	1900		1000		192	15	244			

Sample ID: **2305697-023ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-39 2'**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512648** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.80	0	96.8	70	130			
Surr: BFB	2000		992.1		206	15	244			

Sample ID: **2305697-023amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-39 2'**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512649** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.75	0	92.2	70	130	4.98	20	
Surr: BFB	2000		990.1		202	15	244	0	0	

Sample ID: **lcs-74950**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74950**	RunNo: **96874**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514220** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.7	70	130			
Surr: BFB	5000		1000		497	15	244			S

Sample ID: **mb-74950**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74950**	RunNo: **96874**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514221** 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	720		1000		72.2	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74930** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **74930** RunNo: **96762**

Prep Date: **5/12/2023** Analysis Date: **5/15/2023** SeqNo: **3509516** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.025	1.000	0	80.2	70	130			
Toluene	0.82	0.050	1.000	0	82.4	70	130			
Ethylbenzene	0.82	0.050	1.000	0	82.2	70	130			
Xylenes, Total	2.5	0.10	3.000	0	82.7	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		86.1	39.1	146			

Sample ID: **mb-74930** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **74930** RunNo: **96762**

Prep Date: **5/12/2023** Analysis Date: **5/15/2023** SeqNo: **3509517** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.84		1.000		83.9	39.1	146			

Sample ID: **2305697-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-32 2'** Batch ID: **74930** RunNo: **96762**

Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3509581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.72	0.024	0.9606	0	75.1	70	130			
Toluene	0.74	0.048	0.9606	0	77.5	70	130			
Ethylbenzene	0.76	0.048	0.9606	0	78.6	70	130			
Xylenes, Total	2.3	0.096	2.882	0	78.8	70	130			
Surr: 4-Bromofluorobenzene	0.82		0.9606		84.9	39.1	146			

Sample ID: **2305697-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **BH23-32 2'** Batch ID: **74930** RunNo: **96762**

Prep Date: **5/12/2023** Analysis Date: **5/16/2023** SeqNo: **3509582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.024	0.9588	0	71.8	70	130	4.78	20	
Toluene	0.72	0.048	0.9588	0	74.9	70	130	3.68	20	
Ethylbenzene	0.73	0.048	0.9588	0	75.9	70	130	3.75	20	
Xylenes, Total	2.2	0.096	2.876	0	75.8	70	130	4.13	20	
Surr: 4-Bromofluorobenzene	0.78		0.9588		81.5	39.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-74959**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512676** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.84		1.000		84.0	39.1	146			

Sample ID: **lcs-74959**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512677** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.7	70	130			
Toluene	0.88	0.050	1.000	0	87.9	70	130			
Ethylbenzene	0.86	0.050	1.000	0	85.5	70	130			
Xylenes, Total	2.5	0.10	3.000	0	84.9	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		85.5	39.1	146			

Sample ID: **2305697-024ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-39 4'**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512680** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9461	0	93.0	70	130			
Toluene	0.88	0.047	0.9461	0	92.5	70	130			
Ethylbenzene	0.86	0.047	0.9461	0	91.2	70	130			
Xylenes, Total	2.6	0.095	2.838	0	90.4	70	130			
Surr: 4-Bromofluorobenzene	0.83		0.9461		87.5	39.1	146			

Sample ID: **2305697-024amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-39 4'**	Batch ID: **74959**	RunNo: **96808**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3512681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9506	0	91.2	70	130	1.37	20	
Toluene	0.86	0.048	0.9506	0	90.5	70	130	1.67	20	
Ethylbenzene	0.84	0.048	0.9506	0	88.8	70	130	2.23	20	
Xylenes, Total	2.5	0.095	2.852	0	88.1	70	130	2.14	20	
Surr: 4-Bromofluorobenzene	0.82		0.9506		86.6	39.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305697**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-74950**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74950**	RunNo: **96874**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514224** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.6	70	130			
Toluene	0.96	0.050	1.000	0	95.6	70	130			
Ethylbenzene	0.97	0.050	1.000	0	97.4	70	130			
Xylenes, Total	2.9	0.10	3.000	0	97.4	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: **mb-74950**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74950**	RunNo: **96874**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514225** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	39.1	146			

Qualifiers:

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

Page 250 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2305697

RcptNo: 1

Received By: Juan Rojas 5/12/2023 7:30:00 AM

Completed By: Cheyenne Cason 5/12/2023 9:56:23 AM

Reviewed By: 5/12/23

Chain of Custody

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

Log In

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

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

Adjusted? _____ KPA 5.12-23

Checked by: KPA 5/11/23 5.12.23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

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

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush 5 day

Project Name: **Cotton Draw Unit 1-12 CTB**

Project #: **23E-02423**

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Mo. ty

Cooler Temp(including CF): 0.6+0.1=0.7

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305697	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/10/23	8:20	Soil	BH22-32 0'	1, 4oz jar		001	X	X					X			
05/10/23	8:25	Soil	BH22-32 2'	1, 4oz jar		002	X	X					X			
05/10/23	8:30	Soil	BH22-32 4'	1, 4oz jar		003	X	X					X			
05/10/23	8:40	Soil	BH22-33 0'	1, 4oz jar		004	X	X					X			
05/10/23	8:45	Soil	BH22-33 2'	1, 4oz jar		005	X	X					X			
05/10/23	8:50	Soil	BH22-33 3'	1, 4oz jar		006	X	X					X			
05/10/23	9:00	Soil	BH22-34 0'	1, 4oz jar		007	X	X					X			
05/10/23	9:05	Soil	BH22-34 2'	1, 4oz jar		008	X	X					X			
05/10/23	9:10	Soil	BH22-34 3'	1, 4oz jar		009	X	X					X			
05/10/23	9:15	Soil	BH22-35 0'	1, 4oz jar		010	X	X					X			
05/10/23	9:20	Soil	BH22-35 2'	1, 4oz jar		011	X	X					X			
05/10/23	9:25	Soil	BH22-35 3.5'	1, 4oz jar		012	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
5-11-2023	0700	Lakin Pullman				
5/11/23	1900			courier	5/12/23	7:30

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

Samples are BH23 not BH22 per Email 5/12/23 1/3

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

Chain of Custody Record

Client: Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Days

Project Name: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ~~☐~~ Yes ☐ No

# of Coolers: 1 Marty

Cooler Temp(including CF): 0.6 to. 1 = 0.7

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. 2305697	(BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl, F, Br, NO_3, NO_2, PO_4, SO_4)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/10/23	9:40	Soil	BH22-36 0'	1, 4oz jar		~~00~~ 013	X	X					X			
05/10/23	9:45	Soil	BH22-36 2'	1, 4oz jar		014	X	X					X			
05/10/23	9:50	Soil	BH22-36 4'	1, 4oz jar		015	X	X					X			
05/10/23	10:00	Soil	BH22-37 0'	1, 4oz jar		016	X	X					X			
05/10/23	10:05	Soil	BH22-37 2'	1, 4oz jar		017	X	X					X			
05/10/23	10:10	Soil	BH22-37 3'	1, 4oz jar		018	X	X					X			
05/10/23	10:20	Soil	BH22-38 0'	1, 4oz jar		019	X	X					X			
05/10/23	10:25	Soil	BH22-38 2'	1, 4oz jar		020	X	X					X			
05/10/23	10:30	Soil	BH22-38 3'	1, 4oz jar		021	X	X					X			
05/10/23	10:35	Soil	BH22-39 0'	1, 4oz jar		~~023~~ 022	X	X					X			
05/10/23	10:40	Soil	BH22-39 2'	1, 4oz jar		~~024~~ 023	X	X					X			
05/10/23	10:45	Soil	BH22-39 4'	1, 4oz jar		~~025~~ 024	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-11-2023	07:00	Labor Pullman				
5/11/23	1900				5/11/23	1700
			Received by:	Via:	Date	Time
			courier		5/12/23	7:30

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

2/3

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

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush 5 Day

Project Name: **Cotton Draw Unit 1-12 CTB**

Project #: **23E-02423**

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 No. +y

Cooler Temp(including CF): 0.6+0.1=0.7

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. 2305697	(BTEX) / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/10/23	11:00	Soil	BH22-40 0'	1, 4oz jar		~~026~~ 025	X	X					X			
05/10/23	11:05	Soil	BH22-40 2'	1, 4oz jar		026	X	X					X			
05/10/23	11:10	Soil	BH22-40 3'	1, 4oz jar		027	X	X					X			
05/10/23	11:20	Soil	BH22-41 0'	1, 4oz jar		028	X	X					X			
05/10/23	11:25	Soil	BH22-41 2'	1, 4oz jar		029	X	X					X			
05/10/23	11:30	Soil	BH22-41 4'	1, 4oz jar		030	X	X					X			
05/10/23	11:40	Soil	BH22-42 0'	1, 4oz jar		031	X	X					X			
05/10/23	11:45	Soil	BH22-42 2'	1, 4oz jar		032	X	X					X			
05/10/23	11:50	Soil	BH22-42 4'	1, 4oz jar		033	X	X					X			
05/10/23	12:00	Soil	BH22-43 0'	1, 4oz jar		034	X	X					X			
05/10/23	12:05	Soil	BH22-43 2'	1, 4oz jar		035	X	X					X			
05/10/23	12:10	Soil	BH22-43 4'	1, 4oz jar		036	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-11-2023	07:00	Laton Pullman				
5/11/23	1900				5/11/23	1700
				courier	5/12/23	7:30

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

3/3

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

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

May 24, 2023

Kent Stallings

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2305754

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 33 sample(s) on 5/13/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-44 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 9:00:00 AM
Lab ID: 2305754-001 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/16/2023 2:09:02 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/16/2023 2:09:02 PM
Surr: DNOP	108	69-147		%Rec	1	5/16/2023 2:09:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 12:33:00 AM
Surr: BFB	87.0	15-244		%Rec	1	5/20/2023 12:33:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 12:33:00 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 12:33:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 12:33:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 12:33:00 AM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	5/20/2023 12:33:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	84	60		mg/Kg	20	5/18/2023 4:44:14 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-44 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 9:05:00 AM
Lab ID: 2305754-002 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/16/2023 2:19:55 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 2:19:55 PM
Surr: DNOP	97.1	69-147		%Rec	1	5/16/2023 2:19:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 1:38:00 AM
Surr: BFB	86.7	15-244		%Rec	1	5/20/2023 1:38:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 1:38:00 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 1:38:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 1:38:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2023 1:38:00 AM
Surr: 4-Bromofluorobenzene	84.7	39.1-146		%Rec	1	5/20/2023 1:38:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	180	60		mg/Kg	20	5/18/2023 4:56:34 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-44 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 9:10:00 AM
Lab ID: 2305754-003 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/16/2023 2:30:49 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/16/2023 2:30:49 PM
Surr: DNOP	97.4	69-147		%Rec	1	5/16/2023 2:30:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 2:43:00 AM
Surr: BFB	87.8	15-244		%Rec	1	5/20/2023 2:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 2:43:00 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 2:43:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 2:43:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 2:43:00 AM
Surr: 4-Bromofluorobenzene	85.9	39.1-146		%Rec	1	5/20/2023 2:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	370	60		mg/Kg	20	5/18/2023 5:08:55 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-45 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 9:20:00 AM
Lab ID: 2305754-004 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2023 2:41:41 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 2:41:41 PM
Surr: DNOP	105	69-147		%Rec	1	5/16/2023 2:41:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 3:04:00 AM
Surr: BFB	89.5	15-244		%Rec	1	5/20/2023 3:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 3:04:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 3:04:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 3:04:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 3:04:00 AM
Surr: 4-Bromofluorobenzene	84.7	39.1-146		%Rec	1	5/20/2023 3:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	61		mg/Kg	20	5/18/2023 5:21:15 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-45 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 9:25:00 AM
Lab ID: 2305754-005 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/16/2023 2:52:32 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/16/2023 2:52:32 PM
Surr: DNOP	97.6	69-147		%Rec	1	5/16/2023 2:52:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 3:26:00 AM
Surr: BFB	87.3	15-244		%Rec	1	5/20/2023 3:26:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 3:26:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 3:26:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 3:26:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 3:26:00 AM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/20/2023 3:26:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 5:33:35 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-45 3.5'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 9:30:00 AM
Lab ID: 2305754-006 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/16/2023 3:03:21 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/16/2023 3:03:21 PM
Surr: DNOP	96.0	69-147		%Rec	1	5/16/2023 3:03:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 3:48:00 AM
Surr: BFB	86.8	15-244		%Rec	1	5/20/2023 3:48:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 3:48:00 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 3:48:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 3:48:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2023 3:48:00 AM
Surr: 4-Bromofluorobenzene	84.7	39.1-146		%Rec	1	5/20/2023 3:48:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	95	60		mg/Kg	20	5/18/2023 6:10:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-46 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 9:35:00 AM
Lab ID: 2305754-007 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/16/2023 3:14:10 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/16/2023 3:14:10 PM
Surr: DNOP	97.6	69-147		%Rec	1	5/16/2023 3:14:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 4:09:00 AM
Surr: BFB	85.4	15-244		%Rec	1	5/20/2023 4:09:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 4:09:00 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 4:09:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 4:09:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 4:09:00 AM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/20/2023 4:09:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 6:22:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-46 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 9:40:00 AM
Lab ID: 2305754-008 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/16/2023 3:24:58 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/16/2023 3:24:58 PM
Surr: DNOP	97.1	69-147		%Rec	1	5/16/2023 3:24:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 4:31:00 AM
Surr: BFB	86.5	15-244		%Rec	1	5/20/2023 4:31:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 4:31:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 4:31:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 4:31:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 4:31:00 AM
Surr: 4-Bromofluorobenzene	84.8	39.1-146		%Rec	1	5/20/2023 4:31:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 6:35:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-46 3.5'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 9:45:00 AM
Lab ID: 2305754-009 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2023 3:35:47 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 3:35:47 PM
Surr: DNOP	100	69-147		%Rec	1	5/16/2023 3:35:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 4:53:00 AM
Surr: BFB	88.9	15-244		%Rec	1	5/20/2023 4:53:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 4:53:00 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 4:53:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 4:53:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 4:53:00 AM
Surr: 4-Bromofluorobenzene	85.1	39.1-146		%Rec	1	5/20/2023 4:53:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	370	60		mg/Kg	20	5/18/2023 10:05:13 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-47 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 10:05:00 AM
Lab ID: 2305754-010 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 3:47:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/16/2023 3:47:19 PM
Surr: DNOP	101	69-147		%Rec	1	5/16/2023 3:47:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 5:14:00 AM
Surr: BFB	91.9	15-244		%Rec	1	5/20/2023 5:14:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 5:14:00 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 5:14:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 5:14:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 5:14:00 AM
Surr: 4-Bromofluorobenzene	85.4	39.1-146		%Rec	1	5/20/2023 5:14:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	310	60		mg/Kg	20	5/18/2023 10:17:33 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-47 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 10:10:00 AM
Lab ID: 2305754-011 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/16/2023 4:08:40 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/16/2023 4:08:40 PM
Surr: DNOP	99.2	69-147		%Rec	1	5/16/2023 4:08:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 5:57:00 AM
Surr: BFB	85.9	15-244		%Rec	1	5/20/2023 5:57:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 5:57:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 5:57:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 5:57:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 5:57:00 AM
Surr: 4-Bromofluorobenzene	84.5	39.1-146		%Rec	1	5/20/2023 5:57:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	330	60		mg/Kg	20	5/18/2023 10:54:36 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-47 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 10:15:00 AM
Lab ID: 2305754-012 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/16/2023 4:19:28 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/16/2023 4:19:28 PM
Surr: DNOP	103	69-147		%Rec	1	5/16/2023 4:19:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 6:19:00 AM
Surr: BFB	87.4	15-244		%Rec	1	5/20/2023 6:19:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 6:19:00 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 6:19:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 6:19:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/20/2023 6:19:00 AM
Surr: 4-Bromofluorobenzene	85.5	39.1-146		%Rec	1	5/20/2023 6:19:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	270	60		mg/Kg	20	5/18/2023 11:06:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-48 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 10:20:00 AM
Lab ID: 2305754-013 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/17/2023 4:46:22 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/17/2023 4:46:22 PM
Surr: DNOP	82.0	69-147		%Rec	1	5/17/2023 4:46:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 6:41:00 AM
Surr: BFB	86.8	15-244		%Rec	1	5/20/2023 6:41:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 6:41:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 6:41:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 6:41:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 6:41:00 AM
Surr: 4-Bromofluorobenzene	85.3	39.1-146		%Rec	1	5/20/2023 6:41:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:19:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-48 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/11/2023 10:25:00 AM
Lab ID: 2305754-014 **Matrix:** SOIL
Received Date: 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/16/2023 4:40:59 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 4:40:59 PM
Surr: DNOP	92.5	69-147		%Rec	1	5/16/2023 4:40:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 7:02:00 AM
Surr: BFB	85.0	15-244		%Rec	1	5/20/2023 7:02:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 7:02:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 7:02:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 7:02:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 7:02:00 AM
Surr: 4-Bromofluorobenzene	84.9	39.1-146		%Rec	1	5/20/2023 7:02:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:31:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-48 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 10:30:00 AM
Lab ID: 2305754-015 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/16/2023 4:51:43 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/16/2023 4:51:43 PM
Surr: DNOP	95.0	69-147		%Rec	1	5/16/2023 4:51:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 7:24:00 AM
Surr: BFB	90.2	15-244		%Rec	1	5/20/2023 7:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 7:24:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 7:24:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 7:24:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 7:24:00 AM
Surr: 4-Bromofluorobenzene	86.7	39.1-146		%Rec	1	5/20/2023 7:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:43:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-49 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 10:55:00 AM
Lab ID: 2305754-016 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2023 5:02:26 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2023 5:02:26 PM
Surr: DNOP	95.6	69-147		%Rec	1	5/16/2023 5:02:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 7:46:00 AM
Surr: BFB	87.8	15-244		%Rec	1	5/20/2023 7:46:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 7:46:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 7:46:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 7:46:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 7:46:00 AM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/20/2023 7:46:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/18/2023 11:56:20 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-49 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:00:00 AM
Lab ID: 2305754-017 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/16/2023 5:13:09 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/16/2023 5:13:09 PM
Surr: DNOP	93.9	69-147		%Rec	1	5/16/2023 5:13:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 8:07:00 AM
Surr: BFB	89.7	15-244		%Rec	1	5/20/2023 8:07:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 8:07:00 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 8:07:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 8:07:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/20/2023 8:07:00 AM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/20/2023 8:07:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	61		mg/Kg	20	5/19/2023 12:08:41 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-49 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:05:00 AM
Lab ID: 2305754-018 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	5/16/2023 5:23:51 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	5/16/2023 5:23:51 PM
Surr: DNOP	102	69-147		%Rec	1	5/16/2023 5:23:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 8:29:00 AM
Surr: BFB	88.3	15-244		%Rec	1	5/20/2023 8:29:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 8:29:00 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 8:29:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 8:29:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 8:29:00 AM
Surr: 4-Bromofluorobenzene	85.7	39.1-146		%Rec	1	5/20/2023 8:29:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 12:21:01 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-50 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:15:00 AM
Lab ID: 2305754-019 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	5/16/2023 5:34:32 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/16/2023 5:34:32 PM
Surr: DNOP	90.7	69-147		%Rec	1	5/16/2023 5:34:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 8:51:00 AM
Surr: BFB	87.8	15-244		%Rec	1	5/20/2023 8:51:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 8:51:00 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 8:51:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 8:51:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2023 8:51:00 AM
Surr: 4-Bromofluorobenzene	85.4	39.1-146		%Rec	1	5/20/2023 8:51:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	88	60		mg/Kg	20	5/19/2023 12:33:22 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-50 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:20:00 AM
Lab ID: 2305754-020 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	5/16/2023 5:45:17 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/16/2023 5:45:17 PM
Surr: DNOP	99.6	69-147		%Rec	1	5/16/2023 5:45:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 9:12:00 AM
Surr: BFB	85.5	15-244		%Rec	1	5/20/2023 9:12:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 9:12:00 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 9:12:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 9:12:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2023 9:12:00 AM
Surr: 4-Bromofluorobenzene	85.4	39.1-146		%Rec	1	5/20/2023 9:12:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 12:45:42 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-50 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:25:00 AM
Lab ID: 2305754-021 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/19/2023 9:33:57 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/19/2023 9:33:57 PM
Surr: DNOP	118	69-147		%Rec	1	5/19/2023 9:33:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/19/2023 9:19:00 PM
Surr: BFB	90.4	15-244		%Rec	1	5/19/2023 9:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/18/2023 8:16:00 PM
Toluene	ND	0.049		mg/Kg	1	5/18/2023 8:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/18/2023 8:16:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/18/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	84.8	39.1-146		%Rec	1	5/18/2023 8:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 1:22:45 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-51 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:35:00 AM
Lab ID: 2305754-022 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/19/2023 9:44:53 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/19/2023 9:44:53 PM
Surr: DNOP	133	69-147		%Rec	1	5/19/2023 9:44:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/19/2023 9:40:00 PM
Surr: BFB	87.5	15-244		%Rec	1	5/19/2023 9:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/18/2023 8:37:00 PM
Toluene	ND	0.049		mg/Kg	1	5/18/2023 8:37:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/18/2023 8:37:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/18/2023 8:37:00 PM
Surr: 4-Bromofluorobenzene	84.9	39.1-146		%Rec	1	5/18/2023 8:37:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 1:35:05 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-51 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:40:00 AM
Lab ID: 2305754-023 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/19/2023 9:55:46 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/19/2023 9:55:46 PM
Surr: DNOP	109	69-147		%Rec	1	5/19/2023 9:55:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/19/2023 10:02:00 PM
Surr: BFB	84.8	15-244		%Rec	1	5/19/2023 10:02:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/18/2023 8:59:00 PM
Toluene	ND	0.048		mg/Kg	1	5/18/2023 8:59:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/18/2023 8:59:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/18/2023 8:59:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/18/2023 8:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 1:47:25 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-51 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 11:45:00 AM
Lab ID: 2305754-024 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/19/2023 10:17:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/19/2023 10:17:19 PM
Surr: DNOP	124	69-147		%Rec	1	5/19/2023 10:17:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/19/2023 10:23:00 PM
Surr: BFB	91.4	15-244		%Rec	1	5/19/2023 10:23:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/18/2023 9:21:00 PM
Toluene	ND	0.049		mg/Kg	1	5/18/2023 9:21:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/18/2023 9:21:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/18/2023 9:21:00 PM
Surr: 4-Bromofluorobenzene	81.5	39.1-146		%Rec	1	5/18/2023 9:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	5/19/2023 1:59:46 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-52 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:00:00 PM
Lab ID: 2305754-025 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/18/2023 12:58:03 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/18/2023 12:58:03 PM
Surr: DNOP	90.3	69-147		%Rec	1	5/18/2023 12:58:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 7:21:54 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.023		mg/Kg	1	5/18/2023 10:43:38 PM
Toluene	ND	0.046		mg/Kg	1	5/18/2023 10:43:38 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/18/2023 10:43:38 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/18/2023 10:43:38 PM
Surr: 1,2-Dichloroethane-d4	115	64.8-147		%Rec	1	5/18/2023 10:43:38 PM
Surr: 4-Bromofluorobenzene	97.0	62.1-144		%Rec	1	5/18/2023 10:43:38 PM
Surr: Dibromofluoromethane	123	73-145		%Rec	1	5/18/2023 10:43:38 PM
Surr: Toluene-d8	96.5	70-130		%Rec	1	5/18/2023 10:43:38 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/18/2023 10:43:38 PM
Surr: BFB	104	70-130		%Rec	1	5/18/2023 10:43:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-52 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:05:00 PM
Lab ID: 2305754-026 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2023 1:08:49 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 1:08:49 PM
Surr: DNOP	110	69-147		%Rec	1	5/18/2023 1:08:49 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 7:34:18 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 1:42:19 AM
Toluene	ND	0.047		mg/Kg	1	5/19/2023 1:42:19 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/19/2023 1:42:19 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/19/2023 1:42:19 AM
Surr: 1,2-Dichloroethane-d4	112	64.8-147		%Rec	1	5/19/2023 1:42:19 AM
Surr: 4-Bromofluorobenzene	96.6	62.1-144		%Rec	1	5/19/2023 1:42:19 AM
Surr: Dibromofluoromethane	120	73-145		%Rec	1	5/19/2023 1:42:19 AM
Surr: Toluene-d8	93.2	70-130		%Rec	1	5/19/2023 1:42:19 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/19/2023 1:42:19 AM
Surr: BFB	104	70-130		%Rec	1	5/19/2023 1:42:19 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-52 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:10:00 PM
Lab ID: 2305754-027 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2023 4:03:29 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 4:03:29 PM
Surr: DNOP	114	69-147		%Rec	1	5/18/2023 4:03:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 9:01:11 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 2:12:08 AM
Toluene	ND	0.047		mg/Kg	1	5/19/2023 2:12:08 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/19/2023 2:12:08 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/19/2023 2:12:08 AM
Surr: 1,2-Dichloroethane-d4	112	64.8-147		%Rec	1	5/19/2023 2:12:08 AM
Surr: 4-Bromofluorobenzene	97.5	62.1-144		%Rec	1	5/19/2023 2:12:08 AM
Surr: Dibromofluoromethane	117	73-145		%Rec	1	5/19/2023 2:12:08 AM
Surr: Toluene-d8	97.2	70-130		%Rec	1	5/19/2023 2:12:08 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/19/2023 2:12:08 AM
Surr: BFB	106	70-130		%Rec	1	5/19/2023 2:12:08 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-53 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:20:00 PM
Lab ID: 2305754-028 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/18/2023 4:36:07 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 4:36:07 PM
Surr: DNOP	82.3	69-147		%Rec	1	5/18/2023 4:36:07 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	89	60		mg/Kg	20	5/19/2023 9:13:36 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 2:41:56 AM
Toluene	ND	0.047		mg/Kg	1	5/19/2023 2:41:56 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/19/2023 2:41:56 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/19/2023 2:41:56 AM
Surr: 1,2-Dichloroethane-d4	110	64.8-147		%Rec	1	5/19/2023 2:41:56 AM
Surr: 4-Bromofluorobenzene	95.5	62.1-144		%Rec	1	5/19/2023 2:41:56 AM
Surr: Dibromofluoromethane	119	73-145		%Rec	1	5/19/2023 2:41:56 AM
Surr: Toluene-d8	96.0	70-130		%Rec	1	5/19/2023 2:41:56 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/19/2023 2:41:56 AM
Surr: BFB	104	70-130		%Rec	1	5/19/2023 2:41:56 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-53 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:25:00 PM
Lab ID: 2305754-029 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/18/2023 4:46:58 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/18/2023 4:46:58 PM
Surr: DNOP	98.1	69-147		%Rec	1	5/18/2023 4:46:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	59		mg/Kg	20	5/19/2023 9:26:01 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/19/2023 3:11:40 AM
Toluene	ND	0.049		mg/Kg	1	5/19/2023 3:11:40 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/19/2023 3:11:40 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/19/2023 3:11:40 AM
Surr: 1,2-Dichloroethane-d4	111	64.8-147		%Rec	1	5/19/2023 3:11:40 AM
Surr: 4-Bromofluorobenzene	97.6	62.1-144		%Rec	1	5/19/2023 3:11:40 AM
Surr: Dibromofluoromethane	115	73-145		%Rec	1	5/19/2023 3:11:40 AM
Surr: Toluene-d8	95.9	70-130		%Rec	1	5/19/2023 3:11:40 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/19/2023 3:11:40 AM
Surr: BFB	105	70-130		%Rec	1	5/19/2023 3:11:40 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-53 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:30:00 PM
Lab ID: 2305754-030 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2023 4:57:46 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 4:57:46 PM
Surr: DNOP	105	69-147		%Rec	1	5/18/2023 4:57:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 9:38:25 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/19/2023 3:41:38 AM
Toluene	ND	0.050		mg/Kg	1	5/19/2023 3:41:38 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/19/2023 3:41:38 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/19/2023 3:41:38 AM
Surr: 1,2-Dichloroethane-d4	113	64.8-147		%Rec	1	5/19/2023 3:41:38 AM
Surr: 4-Bromofluorobenzene	97.8	62.1-144		%Rec	1	5/19/2023 3:41:38 AM
Surr: Dibromofluoromethane	117	73-145		%Rec	1	5/19/2023 3:41:38 AM
Surr: Toluene-d8	95.4	70-130		%Rec	1	5/19/2023 3:41:38 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/19/2023 3:41:38 AM
Surr: BFB	107	70-130		%Rec	1	5/19/2023 3:41:38 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-54 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:40:00 PM
Lab ID: 2305754-031 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2023 5:08:33 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 5:08:33 PM
Surr: DNOP	91.4	69-147		%Rec	1	5/18/2023 5:08:33 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 9:50:50 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.025		mg/Kg	1	5/19/2023 4:11:25 AM
Toluene	ND	0.050		mg/Kg	1	5/19/2023 4:11:25 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/19/2023 4:11:25 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/19/2023 4:11:25 AM
Surr: 1,2-Dichloroethane-d4	114	64.8-147		%Rec	1	5/19/2023 4:11:25 AM
Surr: 4-Bromofluorobenzene	94.6	62.1-144		%Rec	1	5/19/2023 4:11:25 AM
Surr: Dibromofluoromethane	117	73-145		%Rec	1	5/19/2023 4:11:25 AM
Surr: Toluene-d8	95.9	70-130		%Rec	1	5/19/2023 4:11:25 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/19/2023 4:11:25 AM
Surr: BFB	105	70-130		%Rec	1	5/19/2023 4:11:25 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-54 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:45:00 PM
Lab ID: 2305754-032 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/18/2023 5:19:18 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 5:19:18 PM
Surr: DNOP	86.2	69-147		%Rec	1	5/18/2023 5:19:18 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 10:03:14 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.024		mg/Kg	1	5/19/2023 4:41:11 AM
Toluene	ND	0.049		mg/Kg	1	5/19/2023 4:41:11 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/19/2023 4:41:11 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/19/2023 4:41:11 AM
Surr: 1,2-Dichloroethane-d4	115	64.8-147		%Rec	1	5/19/2023 4:41:11 AM
Surr: 4-Bromofluorobenzene	101	62.1-144		%Rec	1	5/19/2023 4:41:11 AM
Surr: Dibromofluoromethane	120	73-145		%Rec	1	5/19/2023 4:41:11 AM
Surr: Toluene-d8	93.5	70-130		%Rec	1	5/19/2023 4:41:11 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/19/2023 4:41:11 AM
Surr: BFB	104	70-130		%Rec	1	5/19/2023 4:41:11 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305754**
Date Reported: **5/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-54 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/11/2023 12:50:00 PM
Lab ID: 2305754-033 **Matrix:** SOIL **Received Date:** 5/13/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2023 5:30:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2023 5:30:03 PM
Surr: DNOP	92.1	69-147		%Rec	1	5/18/2023 5:30:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 10:40:28 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JR**
Benzene	ND	0.023		mg/Kg	1	5/19/2023 5:11:00 AM
Toluene	ND	0.047		mg/Kg	1	5/19/2023 5:11:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/19/2023 5:11:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/19/2023 5:11:00 AM
Surr: 1,2-Dichloroethane-d4	110	64.8-147		%Rec	1	5/19/2023 5:11:00 AM
Surr: 4-Bromofluorobenzene	96.8	62.1-144		%Rec	1	5/19/2023 5:11:00 AM
Surr: Dibromofluoromethane	118	73-145		%Rec	1	5/19/2023 5:11:00 AM
Surr: Toluene-d8	96.5	70-130		%Rec	1	5/19/2023 5:11:00 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/19/2023 5:11:00 AM
Surr: BFB	107	70-130		%Rec	1	5/19/2023 5:11:00 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75028**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75028**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514287**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75028**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75028**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514288**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Sample ID: **MB-75044**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75044**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514319**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75044**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75044**	RunNo: **96877**							
Prep Date: **5/18/2023**	Analysis Date: **5/18/2023**	SeqNo: **3514320**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Sample ID: **MB-75067**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75067**	RunNo: **96890**							
Prep Date: **5/19/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514791**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75067**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75067**	RunNo: **96890**							
Prep Date: **5/19/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514792**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-74969**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		94.9	69	147			

Sample ID: **2305754-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-44 0'**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3510924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	8.7	43.44	0	96.5	54.2	135			
Surr: DNOP	4.3		4.344		98.6	69	147			

Sample ID: **2305754-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-44 0'**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/17/2023**	SeqNo: **3510925** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.6	47.94	0	91.3	54.2	135	4.33	29.2	
Surr: DNOP	4.3		4.794		90.1	69	147	0	0	

Sample ID: **LCS-74969**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74969**	RunNo: **96783**
Prep Date: **5/15/2023**	Analysis Date: **5/16/2023**	SeqNo: **3510973** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.3	61.9	130			
Surr: DNOP	4.7		5.000		94.3	69	147			

Sample ID: **2305754-026AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-52 2'**	Batch ID: **75011**	RunNo: **96864**
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513463** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.7	48.69	0	91.5	54.2	135			
Surr: DNOP	4.5		4.869		93.4	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305754-026AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-52 2'**	Batch ID: **75011**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513464**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.30	0	114	54.2	135	25.1	29.2	
Surr: DNOP	5.7		5.030		113	69	147	0	0	

Sample ID: **2305754-027AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-52 4'**	Batch ID: **75017**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513466**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.3	46.25	0	91.8	54.2	135			
Surr: DNOP	4.4		4.625		94.8	69	147			

Sample ID: **2305754-027AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-52 4'**	Batch ID: **75017**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513467**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.40	0	91.0	54.2	135	7.66	29.2	
Surr: DNOP	4.3		5.040		86.1	69	147	0	0	

Sample ID: **LCS-75011**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **75011**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513540**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.9	61.9	130			
Surr: DNOP	4.6		5.000		92.6	69	147			

Sample ID: **LCS-75017**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **75017**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513541**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.4	61.9	130			
Surr: DNOP	4.2		5.000		84.3	69	147			

Sample ID: **MB-75011**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **75011**	RunNo: **96864**							
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513544**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**
24-May-23

Client: Vertex Resources Services, Inc.
Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75011**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75011**	RunNo: **96864**
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513544** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.9	69	147			

Sample ID: **MB-75017**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75017**	RunNo: **96864**
Prep Date: **5/17/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513545** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.3	69	147			

Sample ID: **2305754-024AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-51 4'**	Batch ID: **75018**	RunNo: **96907**
Prep Date: **5/18/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515373** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	49.95	0	102	54.2	135			
Surr: DNOP	5.3		4.995		105	69	147			

Sample ID: **2305754-024AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-51 4'**	Batch ID: **75018**	RunNo: **96907**
Prep Date: **5/18/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515374** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.6	48.12	0	101	54.2	135	4.87	29.2	
Surr: DNOP	4.9		4.812		101	69	147	0	0	

Sample ID: **LCS-75018**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75018**	RunNo: **96907**
Prep Date: **5/17/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515397** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	77	10	50.00	0	155	61.9	130			S
Surr: DNOP	8.2		5.000		163	69	147			S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75018**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75018**	RunNo: **96907**
Prep Date: **5/17/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515401** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		116	69	147			

Sample ID: **LCS-75018**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75018**	RunNo: **96925**
Prep Date: **5/17/2023**	Analysis Date: **5/22/2023**	SeqNo: **3517131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.6	61.9	130			
Surr: DNOP	5.3		5.000		106	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-74988**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74988**	RunNo: **96906**
Prep Date: **5/16/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.5	15	244			

Sample ID: **lcs-74988**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74988**	RunNo: **96906**
Prep Date: **5/16/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515416** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.6	70	130			
Surr: BFB	1900		1000		191	15	244			

Sample ID: **2305754-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-44 0'**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515446** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.44	0	80.6	70	130			
Surr: BFB	1900		977.5		191	15	244			

Sample ID: **2305754-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-44 0'**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515447** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.30	0	83.4	70	130	2.83	20	
Surr: BFB	1900		971.8		195	15	244	0	0	

Sample ID: **mb-74964**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515469** 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	870		1000		87.5	15	244			

Sample ID: **lcs-74964**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515470** Units: **mg/Kg**

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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74964**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515470** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.6	70	130			
Surr: BFB	1900		1000		190	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74988**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74988**	RunNo: **96869**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.9	70	130			
Toluene	0.87	0.050	1.000	0	87.2	70	130			
Ethylbenzene	0.85	0.050	1.000	0	84.8	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.9	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		86.4	39.1	146			

Sample ID: **mb-74988**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74988**	RunNo: **96869**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513976** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.9	39.1	146			

Sample ID: **mb-74964**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515482** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.6	39.1	146			

Sample ID: **lcs-74964**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515483** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.5	70	130			
Toluene	0.87	0.050	1.000	0	87.1	70	130			
Ethylbenzene	0.85	0.050	1.000	0	84.6	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.6	70	130			
Surr: 4-Bromofluorobenzene	0.86		1.000		85.7	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305754-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-44 2'**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515486** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	0.9930	0	86.5	70	130			
Toluene	0.85	0.050	0.9930	0	85.9	70	130			
Ethylbenzene	0.83	0.050	0.9930	0	83.7	70	130			
Xylenes, Total	2.5	0.099	2.979	0	82.9	70	130			
Surr: 4-Bromofluorobenzene	0.86		0.9930		86.4	39.1	146			

Sample ID: **2305754-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-44 2'**	Batch ID: **74964**	RunNo: **96906**
Prep Date: **5/15/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515487** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	0.9881	0	87.1	70	130	0.154	20	
Toluene	0.85	0.049	0.9881	0	85.8	70	130	0.579	20	
Ethylbenzene	0.84	0.049	0.9881	0	84.7	70	130	0.689	20	
Xylenes, Total	2.5	0.099	2.964	0	84.3	70	130	1.16	20	
Surr: 4-Bromofluorobenzene	0.86		0.9881		87.3	39.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74994**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **74994**	RunNo: **96860**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513356** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	117	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	105	80	120			
Surr: 1,2-Dichloroethane-d4	0.59		0.5000		118	64.8	147			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	62.1	144			
Surr: Dibromofluoromethane	0.61		0.5000		122	73	145			
Surr: Toluene-d8	0.47		0.5000		94.1	70	130			

Sample ID: **mb-74994**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **74994**	RunNo: **96860**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.59		0.5000		119	64.8	147			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.7	62.1	144			
Surr: Dibromofluoromethane	0.62		0.5000		123	73	145			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305754**

24-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-74994**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74994**	RunNo: **96860**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.8	70	130			
Surr: BFB	520		500.0		105	70	130			

Sample ID: **mb-74994**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **74994**	RunNo: **96860**
Prep Date: **5/16/2023**	Analysis Date: **5/18/2023**	SeqNo: **3513389** 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	540		500.0		108	70	130			

Qualifiers:

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

Page 299 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2305754

RcptNo: 1

Received By: Juan Rojas 5/13/2023 7:30:00 AM

Completed By: Juan Rojas 5/13/2023 8:34:31 AM

Reviewed By: TMC 5/13/23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: JR 5/13/23

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Client missign mailing address,phone number and email address on COC. JR 5/13/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	No	Morty		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain of Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush 5 DAY

Project Name: **Cotton Draw Unit 1-12 CTB**

Project #: **23E-02423**

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☒ Yes ☐ No

# of Coolers: 1 MrnAy

Cooler Temp(including CF): 4.9-0=4.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305754	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/11/23	9:00	Soil	BH23-44 0'	1, 4oz jar		-001	X	X					X			
05/11/23	9:05	Soil	BH23-44 2'	1, 4oz jar		-002	X	X					X			
05/11/23	9:10	Soil	BH23-44 3.5'	1, 4oz jar		-003	X	X					X			
05/11/23	9:20	Soil	BH23-45 0'	1, 4oz jar		-004	X	X					X			
05/11/23	9:25	Soil	BH23-45 2'	1, 4oz jar		-005	X	X					X			
05/11/23	9:30	Soil	BH23-45 3.5'	1, 4oz jar		-006	X	X					X			
05/11/23	9:35	Soil	BH23-46 0'	1, 4oz jar		-007	X	X					X			
05/11/23	9:40	Soil	BH23-46 2'	1, 4oz jar		-008	X	X					X			
05/11/23	9:45	Soil	BH23-46 3.5'	1, 4oz jar		-009	X	X					X			
05/11/23	10:05	Soil	BH23-47 0'	1, 4oz jar		-010	X	X					X			
05/11/23	10:10	Soil	BH23-47 2'	1, 4oz jar		-011	X	X					X			
05/11/23	10:15	Soil	BH23-47 4'	1, 4oz jar		-012	X	X					X			

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-12-2023	07:50	Lab Pullman				
5/12/23	1900				5/12/23	700
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				courier	5/12/23	7:30

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

1/3

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

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush 5 Day

Project Name: **Cotton Draw Unit 1-12 CTB**

Project #: **23E-02423**

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ~~☐~~ Yes ☐ No

# of Coolers: 1 Empty

Cooler Temp(including CF): 4.9-0=4.9

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. 2305754	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/11/23	10:20	Soil	BH23-48 0'	1, 4oz jar		-013	X	X					X			
05/11/23	10:25	Soil	BH23-48 2'	1, 4oz jar		-014	X	X					X			
05/11/23	10:30	Soil	BH23-48 4'	1, 4oz jar		-015	X	X					X			
05/11/23	10:55	Soil	BH23-49 0'	1, 4oz jar		-016	X	X					X			
05/11/23	11:00	Soil	BH23-49 2'	1, 4oz jar		-017	X	X					X			
05/11/23	11:05	Soil	BH23-49 4'	1, 4oz jar		-018	X	X					X			
05/11/23	11:15	Soil	BH23-50 0'	1, 4oz jar		-019	X	X					X			
05/11/23	11:20	Soil	BH23-50 2'	1, 4oz jar		-020	X	X					X			
05/11/23	11:25	Soil	BH23-50 4'	1, 4oz jar		-021	X	X					X			
05/11/23	11:35	Soil	BH23-51 0'	1, 4oz jar		-022	X	X					X			
05/11/23	11:40	Soil	BH23-51 2'	1, 4oz jar		-023	X	X					X			
05/11/23	11:45	Soil	BH23-51 4'	1, 4oz jar		-024	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-12-2023	0730	Jake Pullman	Cummings		5/12/23	740
5/12/23	1900	Cummings	Jamie		5/12/23	7130

Remarks:

Direct bill to Devon, Dale Woodall

cc. kstallings@vertex.ca for Final Report

2/3

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

Chain-of-Custody Record

Client: Vertex

(direct bill to Devon)

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: L.Pullman

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Mort1

Cooler Temp(including CF): 4.9-0=4.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305754	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/11/23	12:00	Soil	BH23-52 0'	1, 4oz jar		-025	X	X					X			
05/11/23	12:05	Soil	BH23-52 2'	1, 4oz jar		-026	X	X					X			
05/11/23	12:10	Soil	BH23-52 4'	1, 4oz jar		-027	X	X					X			
05/11/23	12:20	Soil	BH23-53 0'	1, 4oz jar		-028	X	X					X			
05/11/23	12:25	Soil	BH23-53 2'	1, 4oz jar		-029	X	X					X			
05/11/23	12:30	Soil	BH23-53 4'	1, 4oz jar		-030	X	X					X			
05/11/23	12:40	Soil	BH23-54 0'	1, 4oz jar		-031	X	X					X			
05/11/23	12:45	Soil	BH23-54 2'	1, 4oz jar		-032	X	X					X			
05/11/23	12:50	Soil	BH23-54 4'	1, 4oz jar		-033	X	X					X			

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-12-2023	07:00	Sabrina Pullman	Courier		5/12/23	1700
5/12/23	1900	Courier	Courier		5/12/23	7:30

Remarks:
Direct bill to Devon, Dale Woodall
cc. kstallings@vertex.ca for Final Report

3/3

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 31, 2023

Kent Stallings

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

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2305809

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 24 sample(s) on 5/16/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-55 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 9:05:00 AM
Lab ID: 2305809-001 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	12	9.1		mg/Kg	1	5/20/2023 4:00:24 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/20/2023 4:00:24 AM
Surr: DNOP	88.7	69-147		%Rec	1	5/20/2023 4:00:24 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 4:12:20 AM
Surr: BFB	76.6	15-244		%Rec	1	5/20/2023 4:12:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 4:12:20 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 4:12:20 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 4:12:20 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 4:12:20 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/20/2023 4:12:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 11:30:51 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-55 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 9:10:00 AM
Lab ID: 2305809-002 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/20/2023 4:11:11 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/20/2023 4:11:11 AM
Surr: DNOP	103	69-147		%Rec	1	5/20/2023 4:11:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 4:35:36 AM
Surr: BFB	77.1	15-244		%Rec	1	5/20/2023 4:35:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/20/2023 4:35:36 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 4:35:36 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 4:35:36 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/20/2023 4:35:36 AM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	5/20/2023 4:35:36 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 11:43:16 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-55 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 9:15:00 AM
Lab ID: 2305809-003 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/20/2023 4:22:08 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 4:22:08 AM
Surr: DNOP	86.6	69-147		%Rec	1	5/20/2023 4:22:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 4:58:59 AM
Surr: BFB	73.9	15-244		%Rec	1	5/20/2023 4:58:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 4:58:59 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 4:58:59 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 4:58:59 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 4:58:59 AM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	5/20/2023 4:58:59 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/19/2023 11:55:41 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-56 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 9:30:00 AM
Lab ID: 2305809-004 **Matrix:** SOIL
Received Date: 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	400	9.6		mg/Kg	1	5/20/2023 4:33:05 AM
Motor Oil Range Organics (MRO)	250	48		mg/Kg	1	5/20/2023 4:33:05 AM
Surr: DNOP	86.2	69-147		%Rec	1	5/20/2023 4:33:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 5:22:25 AM
Surr: BFB	64.0	15-244		%Rec	1	5/20/2023 5:22:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 5:22:25 AM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 5:22:25 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 5:22:25 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/20/2023 5:22:25 AM
Surr: 4-Bromofluorobenzene	97.0	39.1-146		%Rec	1	5/20/2023 5:22:25 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:08:06 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-56 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 9:35:00 AM
Lab ID: 2305809-005 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/20/2023 4:44:00 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 4:44:00 AM
Surr: DNOP	90.0	69-147		%Rec	1	5/20/2023 4:44:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 5:45:52 AM
Surr: BFB	68.8	15-244		%Rec	1	5/20/2023 5:45:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 5:45:52 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 5:45:52 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 5:45:52 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2023 5:45:52 AM
Surr: 4-Bromofluorobenzene	99.3	39.1-146		%Rec	1	5/20/2023 5:45:52 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:45:20 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-56 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 9:40:00 AM
Lab ID: 2305809-006 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/20/2023 5:05:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/20/2023 5:05:28 AM
Surr: DNOP	89.1	69-147		%Rec	1	5/20/2023 5:05:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 6:32:47 AM
Surr: BFB	72.1	15-244		%Rec	1	5/20/2023 6:32:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 6:32:47 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 6:32:47 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 6:32:47 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/20/2023 6:32:47 AM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	5/20/2023 6:32:47 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:57:44 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-57 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 10:10:00 AM
Lab ID: 2305809-007 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	260	8.7		mg/Kg	1	5/20/2023 5:16:21 AM
Motor Oil Range Organics (MRO)	190	43		mg/Kg	1	5/20/2023 5:16:21 AM
Surr: DNOP	76.7	69-147		%Rec	1	5/20/2023 5:16:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 6:56:13 AM
Surr: BFB	57.9	15-244		%Rec	1	5/20/2023 6:56:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 6:56:13 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 6:56:13 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 6:56:13 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2023 6:56:13 AM
Surr: 4-Bromofluorobenzene	96.7	39.1-146		%Rec	1	5/20/2023 6:56:13 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 1:10:09 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-57 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 10:15:00 AM
Lab ID: 2305809-008 **Matrix:** SOIL
Received Date: 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/20/2023 5:27:13 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 5:27:13 AM
Surr: DNOP	93.8	69-147		%Rec	1	5/20/2023 5:27:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 7:19:40 AM
Surr: BFB	80.6	15-244		%Rec	1	5/20/2023 7:19:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 7:19:40 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 7:19:40 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 7:19:40 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 7:19:40 AM
Surr: 4-Bromofluorobenzene	102	39.1-146		%Rec	1	5/20/2023 7:19:40 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 1:22:33 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-57 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 10:20:00 AM
Lab ID: 2305809-009 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/20/2023 5:38:04 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 5:38:04 AM
Surr: DNOP	98.0	69-147		%Rec	1	5/20/2023 5:38:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 7:43:08 AM
Surr: BFB	78.4	15-244		%Rec	1	5/20/2023 7:43:08 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 7:43:08 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 7:43:08 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 7:43:08 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 7:43:08 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/20/2023 7:43:08 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/20/2023 1:34:58 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-58 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 10:25:00 AM
Lab ID: 2305809-010 **Matrix:** SOIL
Received Date: 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	84	8.6		mg/Kg	1	5/20/2023 5:48:53 AM
Motor Oil Range Organics (MRO)	88	43		mg/Kg	1	5/20/2023 5:48:53 AM
Surr: DNOP	125	69-147		%Rec	1	5/20/2023 5:48:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 8:06:34 AM
Surr: BFB	70.6	15-244		%Rec	1	5/20/2023 8:06:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 8:06:34 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 8:06:34 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 8:06:34 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 8:06:34 AM
Surr: 4-Bromofluorobenzene	98.6	39.1-146		%Rec	1	5/20/2023 8:06:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	160	60		mg/Kg	20	5/20/2023 1:47:23 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-58 2'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 10:30:00 AM
Lab ID: 2305809-011 **Matrix:** SOIL
Received Date: 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/20/2023 5:59:41 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 5:59:41 AM
Surr: DNOP	101	69-147		%Rec	1	5/20/2023 5:59:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 8:29:53 AM
Surr: BFB	60.2	15-244		%Rec	1	5/20/2023 8:29:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 8:29:53 AM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 8:29:53 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 8:29:53 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 8:29:53 AM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	5/20/2023 8:29:53 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	300	60		mg/Kg	20	5/20/2023 9:22:46 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-58 4'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 10:35:00 AM
Lab ID: 2305809-012 **Matrix:** SOIL
Received Date: 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/20/2023 6:10:29 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/20/2023 6:10:29 AM
Surr: DNOP	97.7	69-147		%Rec	1	5/20/2023 6:10:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 8:53:12 AM
Surr: BFB	78.3	15-244		%Rec	1	5/20/2023 8:53:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 8:53:12 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 8:53:12 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 8:53:12 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2023 8:53:12 AM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/20/2023 8:53:12 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 9:59:59 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-59 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 11:00:00 AM
Lab ID: 2305809-013 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/22/2023 10:21:33 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/22/2023 10:21:33 AM
Surr: DNOP	83.5	69-147		%Rec	1	5/22/2023 10:21:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 9:16:33 AM
Surr: BFB	88.9	15-244		%Rec	1	5/20/2023 9:16:33 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 9:16:33 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 9:16:33 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 9:16:33 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 9:16:33 AM
Surr: 4-Bromofluorobenzene	104	39.1-146		%Rec	1	5/20/2023 9:16:33 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	61		mg/Kg	20	5/20/2023 11:02:03 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-59 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 11:05:00 AM
Lab ID: 2305809-014 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/20/2023 6:32:00 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/20/2023 6:32:00 AM
Surr: DNOP	99.0	69-147		%Rec	1	5/20/2023 6:32:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2023 9:39:57 AM
Surr: BFB	92.0	15-244		%Rec	1	5/20/2023 9:39:57 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 9:39:57 AM
Toluene	ND	0.050		mg/Kg	1	5/20/2023 9:39:57 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2023 9:39:57 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2023 9:39:57 AM
Surr: 4-Bromofluorobenzene	104	39.1-146		%Rec	1	5/20/2023 9:39:57 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 11:14:28 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-59 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 11:10:00 AM
Lab ID: 2305809-015 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/20/2023 6:42:44 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/20/2023 6:42:44 AM
Surr: DNOP	80.0	69-147		%Rec	1	5/20/2023 6:42:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 10:03:23 AM
Surr: BFB	70.5	15-244		%Rec	1	5/20/2023 10:03:23 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 10:03:23 AM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 10:03:23 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 10:03:23 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2023 10:03:23 AM
Surr: 4-Bromofluorobenzene	99.1	39.1-146		%Rec	1	5/20/2023 10:03:23 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 11:26:52 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-60 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 12:15:00 PM
Lab ID: 2305809-016 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	270	9.1		mg/Kg	1	5/23/2023 11:04:15 AM
Motor Oil Range Organics (MRO)	320	46		mg/Kg	1	5/23/2023 11:04:15 AM
Surr: DNOP	103	69-147		%Rec	1	5/23/2023 11:04:15 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 12:24:00 PM
Surr: BFB	71.4	15-244		%Rec	1	5/20/2023 12:24:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/20/2023 12:24:00 PM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 12:24:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 12:24:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/20/2023 12:24:00 PM
Surr: 4-Bromofluorobenzene	98.9	39.1-146		%Rec	1	5/20/2023 12:24:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 11:39:17 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-60 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 12:20:00 PM
Lab ID: 2305809-017 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/18/2023 4:37:34 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/18/2023 4:37:34 PM
Surr: DNOP	82.2	69-147		%Rec	1	5/18/2023 4:37:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/20/2023 1:34:05 PM
Surr: BFB	80.3	15-244		%Rec	1	5/20/2023 1:34:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/20/2023 1:34:05 PM
Toluene	ND	0.046		mg/Kg	1	5/20/2023 1:34:05 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/20/2023 1:34:05 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/20/2023 1:34:05 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/20/2023 1:34:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 11:51:41 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-60 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 12:25:00 PM
Lab ID: 2305809-018 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/18/2023 5:01:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/18/2023 5:01:19 PM
Surr: DNOP	84.4	69-147		%Rec	1	5/18/2023 5:01:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 2:44:10 PM
Surr: BFB	80.9	15-244		%Rec	1	5/20/2023 2:44:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 2:44:10 PM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 2:44:10 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 2:44:10 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2023 2:44:10 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	5/20/2023 2:44:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:04:06 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-61 0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 5/12/2023 2:05:00 PM
Lab ID: 2305809-019 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/23/2023 10:43:11 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/23/2023 10:43:11 AM
Surr: DNOP	107	69-147		%Rec	1	5/23/2023 10:43:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 3:07:29 PM
Surr: BFB	74.5	15-244		%Rec	1	5/20/2023 3:07:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 3:07:29 PM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 3:07:29 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 3:07:29 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2023 3:07:29 PM
Surr: 4-Bromofluorobenzene	99.9	39.1-146		%Rec	1	5/20/2023 3:07:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:16:30 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-61 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 2:10:00 PM
Lab ID: 2305809-020 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/18/2023 5:48:45 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/18/2023 5:48:45 PM
Surr: DNOP	93.5	69-147		%Rec	1	5/18/2023 5:48:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/20/2023 3:30:51 PM
Surr: BFB	71.0	15-244		%Rec	1	5/20/2023 3:30:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	5/20/2023 3:30:51 PM
Toluene	ND	0.047		mg/Kg	1	5/20/2023 3:30:51 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/20/2023 3:30:51 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/20/2023 3:30:51 PM
Surr: 4-Bromofluorobenzene	97.9	39.1-146		%Rec	1	5/20/2023 3:30:51 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:28:55 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-61 3.5'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 2:15:00 PM
Lab ID: 2305809-021 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/18/2023 6:12:30 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/18/2023 6:12:30 PM
Surr: DNOP	84.9	69-147		%Rec	1	5/18/2023 6:12:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 3:54:08 PM
Surr: BFB	64.6	15-244		%Rec	1	5/20/2023 3:54:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 3:54:08 PM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 3:54:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 3:54:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 3:54:08 PM
Surr: 4-Bromofluorobenzene	96.9	39.1-146		%Rec	1	5/20/2023 3:54:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	430	60		mg/Kg	20	5/20/2023 12:41:19 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-62 0'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 2:25:00 PM
Lab ID: 2305809-022 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	41	9.9		mg/Kg	1	5/23/2023 10:53:43 AM
Motor Oil Range Organics (MRO)	82	49		mg/Kg	1	5/23/2023 10:53:43 AM
Surr: DNOP	98.8	69-147		%Rec	1	5/23/2023 10:53:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 4:17:31 PM
Surr: BFB	77.2	15-244		%Rec	1	5/20/2023 4:17:31 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 4:17:31 PM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 4:17:31 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 4:17:31 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 4:17:31 PM
Surr: 4-Bromofluorobenzene	100	39.1-146		%Rec	1	5/20/2023 4:17:31 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 12:53:43 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-62 2'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 2:30:00 PM
Lab ID: 2305809-023 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/18/2023 6:59:55 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/18/2023 6:59:55 PM
Surr: DNOP	87.0	69-147		%Rec	1	5/18/2023 6:59:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/20/2023 4:40:52 PM
Surr: BFB	73.7	15-244		%Rec	1	5/20/2023 4:40:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/20/2023 4:40:52 PM
Toluene	ND	0.048		mg/Kg	1	5/20/2023 4:40:52 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/20/2023 4:40:52 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/20/2023 4:40:52 PM
Surr: 4-Bromofluorobenzene	99.1	39.1-146		%Rec	1	5/20/2023 4:40:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	59		mg/Kg	20	5/20/2023 1:30:57 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2305809**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-62 4'
Project: Cotton Draw Unit 1 12 CTB **Collection Date:** 5/12/2023 2:35:00 PM
Lab ID: 2305809-024 **Matrix:** SOIL **Received Date:** 5/16/2023 4:10:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/18/2023 7:23:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/18/2023 7:23:40 PM
Surr: DNOP	86.9	69-147		%Rec	1	5/18/2023 7:23:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2023 5:04:10 PM
Surr: BFB	80.2	15-244		%Rec	1	5/20/2023 5:04:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/20/2023 5:04:10 PM
Toluene	ND	0.049		mg/Kg	1	5/20/2023 5:04:10 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2023 5:04:10 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2023 5:04:10 PM
Surr: 4-Bromofluorobenzene	101	39.1-146		%Rec	1	5/20/2023 5:04:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/20/2023 1:43:21 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75068**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75068**	RunNo: **96891**
Prep Date: **5/19/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514873** Units: **mg/Kg**

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

Sample ID: **LCS-75068**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75068**	RunNo: **96891**
Prep Date: **5/19/2023**	Analysis Date: **5/19/2023**	SeqNo: **3514874** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

Sample ID: **MB-75075**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75075**	RunNo: **96914**
Prep Date: **5/20/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515810** Units: **mg/Kg**

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

Sample ID: **LCS-75075**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75075**	RunNo: **96914**
Prep Date: **5/20/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.7	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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75016** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75016** RunNo: **96866**
Prep Date: **5/17/2023** Analysis Date: **5/18/2023** SeqNo: **3513753** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		96.9	69	147			

Sample ID: **LCS-75016** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75016** RunNo: **96866**
Prep Date: **5/17/2023** Analysis Date: **5/18/2023** SeqNo: **3513754** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.5	61.9	130			
Surr: DNOP	4.3		5.000		85.9	69	147			

Sample ID: **LCS-75018** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75018** RunNo: **96907**
Prep Date: **5/17/2023** Analysis Date: **5/19/2023** SeqNo: **3515397** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.2		5.000		163	69	147			S

Sample ID: **LCS-75033** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75033** RunNo: **96907**
Prep Date: **5/18/2023** Analysis Date: **5/19/2023** SeqNo: **3515399** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	61.9	130			
Surr: DNOP	5.2		5.000		103	69	147			

Sample ID: **MB-75018** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75018** RunNo: **96907**
Prep Date: **5/17/2023** Analysis Date: **5/19/2023** SeqNo: **3515401** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		116	69	147			

Sample ID: **MB-75033** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75033** RunNo: **96907**
Prep Date: **5/18/2023** Analysis Date: **5/19/2023** SeqNo: **3515403** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75033** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75033** RunNo: **96907**
Prep Date: **5/18/2023** Analysis Date: **5/19/2023** SeqNo: **3515403** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		96.5	69	147			

Sample ID: **LCS-75018** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75018** RunNo: **96925**
Prep Date: **5/17/2023** Analysis Date: **5/22/2023** SeqNo: **3517131** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.3		5.000		106	69	147			

Sample ID: **LCS-75114** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75114** RunNo: **96945**
Prep Date: **5/23/2023** Analysis Date: **5/23/2023** SeqNo: **3517310** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.9	61.9	130			
Surr: DNOP	4.9		5.000		98.3	69	147			

Sample ID: **MB-75114** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75114** RunNo: **96945**
Prep Date: **5/23/2023** Analysis Date: **5/23/2023** SeqNo: **3517311** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		122	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305809-016ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-60 0'**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515544** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.50	0	87.4	70	130			
Surr: BFB	4500		939.8		480	15	244			S

Sample ID: **2305809-016amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-60 0'**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515545** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.7	23.43	0	82.7	70	130	5.79	20	
Surr: BFB	4400		937.2		473	15	244	0	0	S

Sample ID: **lcs-75002**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75002**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515565** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.3	70	130			
Surr: BFB	4600		1000		456	15	244			S

Sample ID: **lcs-75007**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515566** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.6	70	130			
Surr: BFB	4600		1000		462	15	244			S

Sample ID: **mb-75002**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75002**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515567** 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	720		1000		71.7	15	244			

Sample ID: **mb-75007**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515568** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **mb-75007**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515568** 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	710		1000		71.1	15	244			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-75002**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **75002**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/19/2023**	SeqNo: **3515579** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.4	70	130			
Toluene	0.93	0.050	1.000	0	93.2	70	130			
Ethylbenzene	0.94	0.050	1.000	0	94.3	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.8	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	39.1	146			

Sample ID: **LCS-75007**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515580** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.4	70	130			
Toluene	0.91	0.050	1.000	0	91.4	70	130			
Ethylbenzene	0.93	0.050	1.000	0	92.5	70	130			
Xylenes, Total	2.8	0.10	3.000	0	92.1	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	39.1	146			

Sample ID: **mb-75002**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75002**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: **mb-75007**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.3	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2305809**

31-May-23

Client: Vertex Resources Services, Inc.

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2305809-017ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-60 2'**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515642** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.023	0.9234	0	89.3	70	130			
Toluene	0.85	0.046	0.9234	0	91.9	70	130			
Ethylbenzene	0.87	0.046	0.9234	0	93.9	70	130			
Xylenes, Total	2.6	0.092	2.770	0	94.2	70	130			
Surr: 4-Bromofluorobenzene	0.95		0.9234		103	39.1	146			

Sample ID: **2305809-017amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-60 2'**	Batch ID: **75007**	RunNo: **96874**
Prep Date: **5/17/2023**	Analysis Date: **5/20/2023**	SeqNo: **3515643** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.023	0.9225	0	94.7	70	130	5.81	20	
Toluene	0.90	0.046	0.9225	0	97.7	70	130	5.98	20	
Ethylbenzene	0.92	0.046	0.9225	0	100	70	130	6.38	20	
Xylenes, Total	2.8	0.092	2.768	0	99.4	70	130	5.23	20	
Surr: 4-Bromofluorobenzene	0.96		0.9225		105	39.1	146	0	0	

Qualifiers:

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

Page 335 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2305809

RcptNo: 1

Received By: Juan Rojas 5/16/2023 4:10:00 PM

Completed By: Cheyenne Cason 5/16/2023 4:41:28 PM

Reviewed By: 5/17/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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: 5/17/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Not Present	Yogi		
2	0.5	Good	Not Present	Yogi		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: **Vertex**

(direct bill to Devon, work order 21160360)

Mailing Address:

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:

Cotton Draw Unit 1-12 CTB

Project #:

23E-02423

Project Manager:

Kent Stallings

kstallings@vertex.ca

Sampler: S. McCarty

On Ice: ☐ Yes ☐ No

# of Coolers: 2 909:

Cooler Temp(including CF): 2.9+0.1=3.0 0.4+0.1=0.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305809	Analysis Request: BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/12/23	9:05	Soil	BH23-55 0'	1, 4oz jar		001	X	X					X			
05/12/23	9:10	Soil	BH23-55 2'	1, 4oz jar		002	X	X					X			
05/12/23	9:15	Soil	BH23-55 4'	1, 4oz jar		003	X	X					X			
05/12/23	9:30	Soil	BH23-56 0'	1, 4oz jar		004	X	X					X			
05/12/23	9:35	Soil	BH23-56 2'	1, 4oz jar		005	X	X					X			
05/12/23	9:40	Soil	BH23-56 4'	1, 4oz jar		006	X	X					X			
05/12/23	10:10	Soil	BH23-57 0'	1, 4oz jar		007	X	X					X			
05/12/23	10:15	Soil	BH23-57 2'	1, 4oz jar		008	X	X					X			
05/12/23	10:20	Soil	BH23-57 4'	1, 4oz jar		009	X	X					X			
05/12/23	10:25	Soil	BH23-58 0'	1, 4oz jar		010	X	X					X			
05/12/23	10:30	Soil	BH23-58 2'	1, 4oz jar		011	X	X					X			
05/12/23	10:35	Soil	BH23-58 4'	1, 4oz jar		012	X	X					X			

Date: 5/15/23 Time: 0700 Relinquished by:

Received by: Via: Date: 5/15/23 Time: 700

Date: 5/15/23 Time: 1900 Relinquished by:

Received by: Via: Date: 5/16/23 Time: 16:10

Remarks:

Direct bill to Devon work order 21160360, Dale Woodall

cc. kstallings@vertex.ca for Final Report

1/2

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

Chain-of-Custody Record

Client: Vertex

(direct bill to Devon, work order 21160360)

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

kstallings@vertex.ca

Sampler: S. McCarty

On Ice: ☒ Yes ☐ No

# of Coolers: 2 Yog:

Cooler Temp(including CF): 2.4 to, T=3.0 0.4 to, T=0.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305809	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
05/12/23	11:00	Soil	BH23-59 0'	1, 4oz jar		013	X	X					X			
05/12/23	11:05	Soil	BH23-59 2'	1, 4oz jar		014	X	X					X			
05/12/23	11:10	Soil	BH23-59 4'	1, 4oz jar		015	X	X					X			
05/12/23	12:15	Soil	BH23-60 0'	1, 4oz jar		016	X	X					X			
05/12/23	12:20	Soil	BH23-60 2'	1, 4oz jar		017	X	X					X			
05/12/23	12:25	Soil	BH23-60 4'	1, 4oz jar		018	X	X					X			
05/12/23	14:05	Soil	BH23-61 0'	1, 4oz jar		019	X	X					X			
05/12/23	14:10	Soil	BH23-61 2'	1, 4oz jar		020	X	X					X			
05/12/23	14:15	Soil	BH23-61 3.5'	1, 4oz jar		021	X	X					X			
05/12/23	14:25	Soil	BH23-62 0'	1, 4oz jar		022	X	X					X			
05/12/23	14:30	Soil	BH23-62 2'	1, 4oz jar		023	X	X					X			
05/12/23	14:35	Soil	BH23-62 4'	1, 4oz jar		024	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
5-15-23	07:00				5/15/23	700
5/15/23	1900			Courier	5/16/23	16:10

Remarks:

Direct bill to Devon work order 21160360, Dale Woodall

cc. kstallings@vertex.ca for Final Report

2/2

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 06, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (505) 350-1336
FAX:

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2306D50

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 30 sample(s) on 6/27/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-66 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:00:00 AM
Lab ID: 2306D50-001 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/28/2023 10:26:39 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/28/2023 10:26:39 PM
Surr: DNOP	79.5	69-147		%Rec	1	6/28/2023 10:26:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/29/2023 12:24:48 PM
Surr: BFB	103	15-244		%Rec	1	6/29/2023 12:24:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 12:24:48 PM
Toluene	ND	0.049		mg/Kg	1	6/29/2023 12:24:48 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/29/2023 12:24:48 PM
Xylenes, Total	ND	0.097		mg/Kg	1	6/29/2023 12:24:48 PM
Surr: 4-Bromofluorobenzene	89.5	39.1-146		%Rec	1	6/29/2023 12:24:48 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/1/2023 12:48:01 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-66 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:10:00 AM
Lab ID: 2306D50-002 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/28/2023 10:37:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/28/2023 10:37:35 PM
Surr: DNOP	82.9	69-147		%Rec	1	6/28/2023 10:37:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/29/2023 12:48:42 PM
Surr: BFB	104	15-244		%Rec	1	6/29/2023 12:48:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 12:48:42 PM
Toluene	ND	0.046		mg/Kg	1	6/29/2023 12:48:42 PM
Ethylbenzene	ND	0.046		mg/Kg	1	6/29/2023 12:48:42 PM
Xylenes, Total	ND	0.093		mg/Kg	1	6/29/2023 12:48:42 PM
Surr: 4-Bromofluorobenzene	90.4	39.1-146		%Rec	1	6/29/2023 12:48:42 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	59		mg/Kg	20	7/1/2023 1:00:25 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-67 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:20:00 AM
Lab ID: 2306D50-003 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/28/2023 10:48:29 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/28/2023 10:48:29 PM
Surr: DNOP	86.9	69-147		%Rec	1	6/28/2023 10:48:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 1:12:39 PM
Surr: BFB	105	15-244		%Rec	1	6/29/2023 1:12:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 1:12:39 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 1:12:39 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 1:12:39 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 1:12:39 PM
Surr: 4-Bromofluorobenzene	89.3	39.1-146		%Rec	1	6/29/2023 1:12:39 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/1/2023 1:12:50 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-67 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:30:00 AM
Lab ID: 2306D50-004 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/28/2023 10:59:23 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/28/2023 10:59:23 PM
Surr: DNOP	86.6	69-147		%Rec	1	6/28/2023 10:59:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 1:36:43 PM
Surr: BFB	107	15-244		%Rec	1	6/29/2023 1:36:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 1:36:43 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 1:36:43 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 1:36:43 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 1:36:43 PM
Surr: 4-Bromofluorobenzene	92.3	39.1-146		%Rec	1	6/29/2023 1:36:43 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/1/2023 1:25:15 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-68 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:40:00 AM
Lab ID: 2306D50-005 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/28/2023 11:10:18 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/28/2023 11:10:18 PM
Surr: DNOP	85.8	69-147		%Rec	1	6/28/2023 11:10:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/29/2023 2:00:52 PM
Surr: BFB	110	15-244		%Rec	1	6/29/2023 2:00:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 2:00:52 PM
Toluene	ND	0.048		mg/Kg	1	6/29/2023 2:00:52 PM
Ethylbenzene	ND	0.048		mg/Kg	1	6/29/2023 2:00:52 PM
Xylenes, Total	ND	0.095		mg/Kg	1	6/29/2023 2:00:52 PM
Surr: 4-Bromofluorobenzene	90.8	39.1-146		%Rec	1	6/29/2023 2:00:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1000	60		mg/Kg	20	7/1/2023 1:37:39 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-68 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 9:50:00 AM
Lab ID: 2306D50-006 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/28/2023 11:21:19 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/28/2023 11:21:19 PM
Surr: DNOP	82.6	69-147		%Rec	1	6/28/2023 11:21:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/29/2023 2:25:06 PM
Surr: BFB	110	15-244		%Rec	1	6/29/2023 2:25:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 2:25:06 PM
Toluene	ND	0.049		mg/Kg	1	6/29/2023 2:25:06 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/29/2023 2:25:06 PM
Xylenes, Total	ND	0.097		mg/Kg	1	6/29/2023 2:25:06 PM
Surr: 4-Bromofluorobenzene	91.8	39.1-146		%Rec	1	6/29/2023 2:25:06 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	300	60		mg/Kg	20	7/1/2023 1:50:04 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-69 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 10:00:00 AM
Lab ID: 2306D50-007 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/29/2023 11:06:42 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/29/2023 11:06:42 AM
Surr: DNOP	102	69-147		%Rec	1	6/29/2023 11:06:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 12:50:00 AM
Surr: BFB	94.3	15-244		%Rec	1	6/30/2023 12:50:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 12:50:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 12:50:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 12:50:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	6/30/2023 12:50:00 AM
Surr: 4-Bromofluorobenzene	93.1	39.1-146		%Rec	1	6/30/2023 12:50:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	7/1/2023 2:02:28 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-69 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 10:10:00 AM
Lab ID: 2306D50-008 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/29/2023 11:38:37 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/29/2023 11:38:37 AM
Surr: DNOP	95.4	69-147		%Rec	1	6/29/2023 11:38:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/30/2023 1:55:00 AM
Surr: BFB	96.7	15-244		%Rec	1	6/30/2023 1:55:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 1:55:00 AM
Toluene	ND	0.048		mg/Kg	1	6/30/2023 1:55:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2023 1:55:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	6/30/2023 1:55:00 AM
Surr: 4-Bromofluorobenzene	91.7	39.1-146		%Rec	1	6/30/2023 1:55:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 3:04:47 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-70 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 10:20:00 AM
Lab ID: 2306D50-009 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	6/29/2023 11:49:17 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	6/29/2023 11:49:17 AM
Surr: DNOP	100	69-147		%Rec	1	6/29/2023 11:49:17 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/30/2023 3:00:00 AM
Surr: BFB	93.4	15-244		%Rec	1	6/30/2023 3:00:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 3:00:00 AM
Toluene	ND	0.048		mg/Kg	1	6/30/2023 3:00:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2023 3:00:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	6/30/2023 3:00:00 AM
Surr: 4-Bromofluorobenzene	91.7	39.1-146		%Rec	1	6/30/2023 3:00:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 9:29:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-70 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 10:30:00 AM
Lab ID: 2306D50-010 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	6/29/2023 11:59:57 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	6/29/2023 11:59:57 AM
Surr: DNOP	104	69-147		%Rec	1	6/29/2023 11:59:57 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 3:22:00 AM
Surr: BFB	93.1	15-244		%Rec	1	6/30/2023 3:22:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 3:22:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 3:22:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 3:22:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	6/30/2023 3:22:00 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	6/30/2023 3:22:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 3:54:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306D50-011 **Matrix:** SOIL

Client Sample ID: BH23-71 0.0'
Collection Date: 6/24/2023 10:40:00 AM
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/29/2023 12:10:39 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/29/2023 12:10:39 PM
Surr: DNOP	98.7	69-147		%Rec	1	6/29/2023 12:10:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/30/2023 3:44:00 AM
Surr: BFB	96.6	15-244		%Rec	1	6/30/2023 3:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/30/2023 3:44:00 AM
Toluene	ND	0.050		mg/Kg	1	6/30/2023 3:44:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2023 3:44:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	6/30/2023 3:44:00 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	6/30/2023 3:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	240	60		mg/Kg	20	6/30/2023 4:31:39 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-71 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 10:50:00 AM
Lab ID: 2306D50-012 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	6/29/2023 12:21:20 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	6/29/2023 12:21:20 PM
Surr: DNOP	102	69-147		%Rec	1	6/29/2023 12:21:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/30/2023 4:06:00 AM
Surr: BFB	89.8	15-244		%Rec	1	6/30/2023 4:06:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 4:06:00 AM
Toluene	ND	0.046		mg/Kg	1	6/30/2023 4:06:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	6/30/2023 4:06:00 AM
Xylenes, Total	ND	0.091		mg/Kg	1	6/30/2023 4:06:00 AM
Surr: 4-Bromofluorobenzene	90.1	39.1-146		%Rec	1	6/30/2023 4:06:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	61		mg/Kg	20	6/30/2023 5:08:53 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-71 4.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:00:00 AM
Lab ID: 2306D50-013 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/29/2023 12:32:04 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/29/2023 12:32:04 PM
Surr: DNOP	117	69-147		%Rec	1	6/29/2023 12:32:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/30/2023 4:27:00 AM
Surr: BFB	92.7	15-244		%Rec	1	6/30/2023 4:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/30/2023 4:27:00 AM
Toluene	ND	0.050		mg/Kg	1	6/30/2023 4:27:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2023 4:27:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2023 4:27:00 AM
Surr: 4-Bromofluorobenzene	91.6	39.1-146		%Rec	1	6/30/2023 4:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 5:21:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-72 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:10:00 AM
Lab ID: 2306D50-014 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/29/2023 12:53:27 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/29/2023 12:53:27 PM
Surr: DNOP	129	69-147		%Rec	1	6/29/2023 12:53:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 4:49:00 AM
Surr: BFB	92.6	15-244		%Rec	1	6/30/2023 4:49:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 4:49:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 4:49:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 4:49:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	6/30/2023 4:49:00 AM
Surr: 4-Bromofluorobenzene	91.1	39.1-146		%Rec	1	6/30/2023 4:49:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	82	60		mg/Kg	20	6/30/2023 5:33:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-72 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:20:00 AM
Lab ID: 2306D50-015 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	6/29/2023 1:04:12 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/29/2023 1:04:12 PM
Surr: DNOP	112	69-147		%Rec	1	6/29/2023 1:04:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 5:11:00 AM
Surr: BFB	95.2	15-244		%Rec	1	6/30/2023 5:11:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 5:11:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 5:11:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 5:11:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	6/30/2023 5:11:00 AM
Surr: 4-Bromofluorobenzene	90.4	39.1-146		%Rec	1	6/30/2023 5:11:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	70	60		mg/Kg	20	6/30/2023 5:46:06 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-72 4.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:30:00 AM
Lab ID: 2306D50-016 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/29/2023 1:14:55 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/29/2023 1:14:55 PM
Surr: DNOP	110	69-147		%Rec	1	6/29/2023 1:14:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/30/2023 6:16:00 AM
Surr: BFB	92.9	15-244		%Rec	1	6/30/2023 6:16:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 6:16:00 AM
Toluene	ND	0.046		mg/Kg	1	6/30/2023 6:16:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	6/30/2023 6:16:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	6/30/2023 6:16:00 AM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	6/30/2023 6:16:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 5:58:31 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-73 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:40:00 AM
Lab ID: 2306D50-017 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/29/2023 1:25:40 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/29/2023 1:25:40 PM
Surr: DNOP	114	69-147		%Rec	1	6/29/2023 1:25:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/30/2023 6:38:00 AM
Surr: BFB	95.1	15-244		%Rec	1	6/30/2023 6:38:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 6:38:00 AM
Toluene	ND	0.046		mg/Kg	1	6/30/2023 6:38:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	6/30/2023 6:38:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	6/30/2023 6:38:00 AM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	6/30/2023 6:38:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	98	60		mg/Kg	20	6/30/2023 6:10:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-73 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 11:50:00 AM
Lab ID: 2306D50-018 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	6/29/2023 1:36:27 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	6/29/2023 1:36:27 PM
Surr: DNOP	90.1	69-147		%Rec	1	6/29/2023 1:36:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 6:59:00 AM
Surr: BFB	97.3	15-244		%Rec	1	6/30/2023 6:59:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 6:59:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 6:59:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 6:59:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	6/30/2023 6:59:00 AM
Surr: 4-Bromofluorobenzene	92.7	39.1-146		%Rec	1	6/30/2023 6:59:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	160	60		mg/Kg	20	6/30/2023 6:23:20 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-74 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 12:00:00 PM
Lab ID: 2306D50-019 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/29/2023 1:47:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/29/2023 1:47:12 PM
Surr: DNOP	92.2	69-147		%Rec	1	6/29/2023 1:47:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/30/2023 7:21:00 AM
Surr: BFB	94.5	15-244		%Rec	1	6/30/2023 7:21:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/30/2023 7:21:00 AM
Toluene	ND	0.048		mg/Kg	1	6/30/2023 7:21:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2023 7:21:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	6/30/2023 7:21:00 AM
Surr: 4-Bromofluorobenzene	91.9	39.1-146		%Rec	1	6/30/2023 7:21:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 6:35:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-74 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/24/2023 12:10:00 PM
Lab ID: 2306D50-020 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	6/29/2023 1:58:00 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	6/29/2023 1:58:00 PM
Surr: DNOP	92.9	69-147		%Rec	1	6/29/2023 1:58:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/30/2023 7:43:00 AM
Surr: BFB	92.8	15-244		%Rec	1	6/30/2023 7:43:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 7:43:00 AM
Toluene	ND	0.046		mg/Kg	1	6/30/2023 7:43:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	6/30/2023 7:43:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	6/30/2023 7:43:00 AM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	6/30/2023 7:43:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 6:48:08 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-75 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:00:00 AM
Lab ID: 2306D50-021 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/29/2023 2:08:49 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/29/2023 2:08:49 PM
Surr: DNOP	81.2	69-147		%Rec	1	6/29/2023 2:08:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/30/2023 8:05:00 AM
Surr: BFB	93.4	15-244		%Rec	1	6/30/2023 8:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/30/2023 8:05:00 AM
Toluene	ND	0.049		mg/Kg	1	6/30/2023 8:05:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/30/2023 8:05:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2023 8:05:00 AM
Surr: 4-Bromofluorobenzene	92.7	39.1-146		%Rec	1	6/30/2023 8:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 7:00:33 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-75 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:10:00 AM
Lab ID: 2306D50-022 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/29/2023 2:19:39 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/29/2023 2:19:39 PM
Surr: DNOP	88.1	69-147		%Rec	1	6/29/2023 2:19:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/30/2023 8:27:00 AM
Surr: BFB	93.6	15-244		%Rec	1	6/30/2023 8:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/30/2023 8:27:00 AM
Toluene	ND	0.050		mg/Kg	1	6/30/2023 8:27:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2023 8:27:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2023 8:27:00 AM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	6/30/2023 8:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 7:37:46 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-76 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:20:00 AM
Lab ID: 2306D50-023 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/29/2023 2:30:37 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/29/2023 2:30:37 PM
Surr: DNOP	107	69-147		%Rec	1	6/29/2023 2:30:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/30/2023 8:48:00 AM
Surr: BFB	93.6	15-244		%Rec	1	6/30/2023 8:48:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/30/2023 8:48:00 AM
Toluene	ND	0.050		mg/Kg	1	6/30/2023 8:48:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2023 8:48:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2023 8:48:00 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	6/30/2023 8:48:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	510	60		mg/Kg	20	6/30/2023 7:50:11 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-76 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:30:00 AM
Lab ID: 2306D50-024 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/29/2023 2:41:35 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/29/2023 2:41:35 PM
Surr: DNOP	96.5	69-147		%Rec	1	6/29/2023 2:41:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/30/2023 9:10:00 AM
Surr: BFB	93.6	15-244		%Rec	1	6/30/2023 9:10:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/30/2023 9:10:00 AM
Toluene	ND	0.047		mg/Kg	1	6/30/2023 9:10:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2023 9:10:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	6/30/2023 9:10:00 AM
Surr: 4-Bromofluorobenzene	91.8	39.1-146		%Rec	1	6/30/2023 9:10:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	6/30/2023 8:02:36 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-76 4.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:40:00 AM
Lab ID: 2306D50-025 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/29/2023 2:52:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/29/2023 2:52:35 PM
Surr: DNOP	93.8	69-147		%Rec	1	6/29/2023 2:52:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/29/2023 1:48:00 PM
Surr: BFB	94.7	15-244		%Rec	1	6/29/2023 1:48:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 1:48:00 PM
Toluene	ND	0.048		mg/Kg	1	6/29/2023 1:48:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	6/29/2023 1:48:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	6/29/2023 1:48:00 PM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	6/29/2023 1:48:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	87	60		mg/Kg	20	6/30/2023 8:15:01 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-77 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 11:50:00 AM
Lab ID: 2306D50-026 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1000	98		mg/Kg	10	6/29/2023 4:49:42 PM
Motor Oil Range Organics (MRO)	860	490		mg/Kg	10	6/29/2023 4:49:42 PM
Surr: DNOP	0	69-147	S	%Rec	10	6/29/2023 4:49:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 2:54:00 PM
Surr: BFB	100	15-244		%Rec	1	6/29/2023 2:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 2:54:00 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 2:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 2:54:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 2:54:00 PM
Surr: 4-Bromofluorobenzene	96.3	39.1-146		%Rec	1	6/29/2023 2:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 8:27:26 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-77 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 12:00:00 PM
Lab ID: 2306D50-027 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	6/30/2023 4:13:54 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	6/30/2023 4:13:54 PM
Surr: DNOP	84.0	69-147		%Rec	1	6/30/2023 4:13:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 4:01:00 PM
Surr: BFB	101	15-244		%Rec	1	6/29/2023 4:01:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 4:01:00 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 4:01:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 4:01:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 4:01:00 PM
Surr: 4-Bromofluorobenzene	96.9	39.1-146		%Rec	1	6/29/2023 4:01:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	6/30/2023 8:39:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-77 4.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 12:10:00 PM
Lab ID: 2306D50-028 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/30/2023 4:24:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2023 4:24:44 PM
Surr: DNOP	90.8	69-147		%Rec	1	6/30/2023 4:24:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 4:23:00 PM
Surr: BFB	97.6	15-244		%Rec	1	6/29/2023 4:23:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 4:23:00 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 4:23:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 4:23:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 4:23:00 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	6/29/2023 4:23:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	92	60		mg/Kg	20	7/3/2023 10:42:13 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-78 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 12:20:00 PM
Lab ID: 2306D50-029 **Matrix:** SOIL
Received Date: 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/30/2023 4:35:34 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2023 4:35:34 PM
Surr: DNOP	88.8	69-147		%Rec	1	6/30/2023 4:35:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/29/2023 4:45:00 PM
Surr: BFB	99.1	15-244		%Rec	1	6/29/2023 4:45:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 4:45:00 PM
Toluene	ND	0.046		mg/Kg	1	6/29/2023 4:45:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	6/29/2023 4:45:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	6/29/2023 4:45:00 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146		%Rec	1	6/29/2023 4:45:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 11:19:26 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306D50**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-78 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/25/2023 12:30:00 PM
Lab ID: 2306D50-030 **Matrix:** SOIL **Received Date:** 6/27/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	6/30/2023 4:46:27 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/30/2023 4:46:27 PM
Surr: DNOP	102	69-147		%Rec	1	6/30/2023 4:46:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/29/2023 5:07:00 PM
Surr: BFB	98.1	15-244		%Rec	1	6/29/2023 5:07:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 5:07:00 PM
Toluene	ND	0.046		mg/Kg	1	6/29/2023 5:07:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	6/29/2023 5:07:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	6/29/2023 5:07:00 PM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	6/29/2023 5:07:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 12:21:27 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75919**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75919**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559842**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75919**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75919**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559843**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	90	110			

Sample ID: **MB-75936**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75936**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559844**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75936**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75936**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559845**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Sample ID: **MB-75936**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75936**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559876**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75936**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75936**	RunNo: **97859**							
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3559877**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75962**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75962**	RunNo: **97896**
Prep Date: **7/3/2023**	Analysis Date: **7/3/2023**	SeqNo: **3561639** Units: **mg/Kg**

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

Sample ID: **LCS-75962**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75962**	RunNo: **97896**
Prep Date: **7/3/2023**	Analysis Date: **7/3/2023**	SeqNo: **3561640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-75869**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **75869**	RunNo: **97779**							
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557674**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.9	69	147			

Sample ID: **LCS-75892**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **75892**	RunNo: **97779**							
Prep Date: **6/28/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557675**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	35	10	50.00	0	69.7	61.9	130			
Surr: DNOP	3.9		5.000		78.6	69	147			

Sample ID: **MB-75869**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **75869**	RunNo: **97779**							
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557676**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	69	147			

Sample ID: **MB-75892**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **75892**	RunNo: **97779**							
Prep Date: **6/28/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557677**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.7		10.00		76.5	69	147			

Sample ID: **2306D50-007AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-69 0.0'**	Batch ID: **75903**	RunNo: **97829**							
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558284**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.4	47.17	0	95.9	54.2	135			
Surr: DNOP	4.3		4.717		90.5	69	147			

Sample ID: **2306D50-007AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BH23-69 0.0'**	Batch ID: **75903**	RunNo: **97829**							
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558285**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	8.9	44.68	0	114	54.2	135	12.1	29.2	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306D50-007AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-69 0.0'**	Batch ID: **75903**	RunNo: **97829**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558285** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.2		4.468		116	69	147	0	0	

Sample ID: **LCS-75903**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75903**	RunNo: **97829**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558305** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.4	61.9	130			
Surr: DNOP	4.5		5.000		89.1	69	147			

Sample ID: **MB-75903**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75903**	RunNo: **97829**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558306** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.2		10.00		92.2	69	147			

Sample ID: **2306D50-027AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-77 2.0'**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560450** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	8.9	44.29	0	82.4	54.2	135			
Surr: DNOP	4.2		4.429		95.9	69	147			

Sample ID: **2306D50-027AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-77 2.0'**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560451** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	34	8.7	43.44	0	78.2	54.2	135	7.21	29.2	
Surr: DNOP	4.0		4.344		92.4	69	147	0	0	

Sample ID: **LCS-75907**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560506** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-75907**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560506** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.7	61.9	130			
Surr: DNOP	4.5		5.000		90.7	69	147			

Sample ID: **MB-75907**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560510** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.3	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-75870**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75870**	RunNo: **97780**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557429** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.9	70	130			
Surr: BFB	2000		1000		202	15	244			

Sample ID: **mb-75870**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75870**	RunNo: **97780**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557431** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		104	15	244			

Sample ID: **lcs-75893**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558099** 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	91.3	70	130			
Surr: BFB	2100		1000		210	15	244			

Sample ID: **mb-75893**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558102** 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	950		1000		94.6	15	244			

Sample ID: **2306D50-025ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-76 4.0'**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558619** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.27	0	96.0	70	130			
Surr: BFB	2100		970.9		221	15	244			

Sample ID: **2306D50-025amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-76 4.0'**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558620** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306D50-025amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-76 4.0'**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558620** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.30	0	92.7	70	130	3.34	20	
Surr: BFB	2100		971.8		218	15	244	0	0	

Sample ID: **lcs-75891**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.6	70	130			
Surr: BFB	2000		1000		205	15	244			

Sample ID: **mb-75891**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558641** 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	940		1000		93.8	15	244			

Sample ID: **2306D50-007ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-69 0.0'**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558643** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.8	23.79	0	83.8	70	130			
Surr: BFB	2000		951.5		206	15	244			

Sample ID: **2306D50-007amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-69 0.0'**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558644** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.7	23.67	0	82.0	70	130	2.60	20	
Surr: BFB	1900		947.0		197	15	244	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-75870**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **75870**	RunNo: **97780**							
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557469**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	84.0	70	130			
Toluene	0.86	0.050	1.000	0	85.8	70	130			
Ethylbenzene	0.86	0.050	1.000	0	86.4	70	130			
Xylenes, Total	2.6	0.10	3.000	0	86.9	70	130			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.6	39.1	146			

Sample ID: **mb-75870**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **75870**	RunNo: **97780**							
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557470**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.6	39.1	146			

Sample ID: **lcs-75893**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **75893**	RunNo: **97804**							
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558106**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.3	70	130			
Toluene	0.84	0.050	1.000	0	84.1	70	130			
Ethylbenzene	0.85	0.050	1.000	0	84.8	70	130			
Xylenes, Total	2.5	0.10	3.000	0	84.9	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	39.1	146			

Sample ID: **mb-75893**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **75893**	RunNo: **97804**							
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558107**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306D50-026ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-77 0.0'**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558661** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.023	0.9390	0	92.7	70	130			
Toluene	0.90	0.047	0.9390	0	96.0	70	130			
Ethylbenzene	0.92	0.047	0.9390	0	98.2	70	130			
Xylenes, Total	2.8	0.094	2.817	0	98.4	70	130			
Surr: 4-Bromofluorobenzene	0.93		0.9390		99.0	39.1	146			

Sample ID: **2306D50-026amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-77 0.0'**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558662** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9416	0	95.3	70	130	3.11	20	
Toluene	0.93	0.047	0.9416	0	98.3	70	130	2.64	20	
Ethylbenzene	0.95	0.047	0.9416	0	101	70	130	3.07	20	
Xylenes, Total	2.9	0.094	2.825	0	101	70	130	3.31	20	
Surr: 4-Bromofluorobenzene	0.92		0.9416		98.0	39.1	146	0	0	

Sample ID: **lcs-75891**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.0	70	130			
Toluene	0.93	0.050	1.000	0	93.4	70	130			
Ethylbenzene	0.94	0.050	1.000	0	93.5	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.5	70	130			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.9	39.1	146			

Sample ID: **mb-75891**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558682** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		92.4	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306D50**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306D50-008ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-69 2.0'**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558685** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9709	0	94.5	70	130			
Toluene	0.94	0.049	0.9709	0	97.1	70	130			
Ethylbenzene	0.95	0.049	0.9709	0	97.5	70	130			
Xylenes, Total	2.8	0.097	2.913	0	97.4	70	130			
Surr: 4-Bromofluorobenzene	0.90		0.9709		93.2	39.1	146			

Sample ID: **2306D50-008amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-69 2.0'**	Batch ID: **75891**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/30/2023**	SeqNo: **3558686** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9728	0	93.2	70	130	1.27	20	
Toluene	0.93	0.049	0.9728	0	95.9	70	130	1.03	20	
Ethylbenzene	0.94	0.049	0.9728	0	96.4	70	130	0.926	20	
Xylenes, Total	2.8	0.097	2.918	0	96.8	70	130	0.420	20	
Surr: 4-Bromofluorobenzene	0.91		0.9728		93.4	39.1	146	0	0	

Qualifiers:

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

Page 379 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: Devon Energy | Work Order Number: 2306D50 | RcptNo: 1

Received By: Tracy Casarrubias 6/27/2023 7:35:00 AM

Completed By: Desiree Dominguez 6/27/2023 8:57:07 AM DD

Reviewed By: JN 6/27/23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: SCM 06/27/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

Client information not provided on COC. -DAD 6/27/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.5	Good	Not Present	Morty		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: AH

On Ice: ☑ Yes ☐ No Monty

# of Coolers: 1

Cooler Temp(Including CF): 5.8-0.3=5.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name		Container Type and #	Preservative Type	HEAL No. 2306D50	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6-24-23	0900	Soil	BH23-66	0.0'	402	ICE	-001	✓	✓					✓			
	0910		BH23-66	2.0'			-002										
	0920		BH23-67	0.0'			-003										
	0930		BH23-67	2.0'			-004										
	0940		BH23-68	0.0'			-005										
	0950		BH23-68	2.0'			-006										
	1000		BH23-69	0.0'			-007										
	1010		BH23-69	2.0'			-008										
	1020		BH23-70	0.0'			-009										
	1030		BH23-70	2.0'			-010										
	1040		BH23-71	0.0'			-011										
	1050		BH23-71	2.0'			-012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/26/23	945
6/26/23	1900			Courier	6/27/23	7:35

Remarks: CC: Kent Stallings

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

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: AH

On Ice: ☑ Yes ☐ No Marty

# of Coolers: 1

Cooler Temp (including CF): 5.8-0.3=5.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2306D50	BTEX / MTBE / TMB's (8021)	TPH: 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6-24-23	1100	Soil	BH23-71 4.0	4 oz	ICE	-013										
	1110		BH23-72 0.0			-014										
	1120		BH23-72 2.0			-015										
	1130		BH23-72 4.0			-016										
	1140		BH23-73 0.0			-017										
	1150		BH23-73 2.0			-018										
	1200		BH23-74 0.0			-019										
	1210		BH23-74 2.0			-020										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/24/23	945
6/26/23	1900			Courier	6/27/23	7:35

Remarks: CC: Kent Stallings

PER SAMPLE BOTTLE. SCM 06/27/23

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

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: AH

On Ice: ☑ Yes ☐ No marty

# of Coolers: 1

Cooler Temp(including CF): 5.8-0.3=5.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name		Container Type and #	Preservative Type	HEAL No. 2306050	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6-25-23	1100	Soil	BH23-75	0.0	402	ICE	-021										
	1110		BH23-75	2.0			-022										
	1120		BH23-76	0.0			-023										
	1130		BH23-76	2.0			-024										
	1140		BH23-76	4.0			-025										
	1150		BH23-77	0.0			-026										
	1200		BH23-77	2.0			-027										
	1210		BH23-77	4.0			-028										
	1220		BH23-78	0.0			-029										
	1230		BH23-78	2.0			-030										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/26/23	745
6/26/23	1900			Courier	6/27/23	7.4 TMB 7:35

Remarks: CC: Kent Stallings

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 06, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (505) 350-1336
FAX:

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2306E09

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 13 sample(s) on 6/28/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-79 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 10:00:00 AM
Lab ID: 2306E09-001 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	6/30/2023 6:47:21 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	6/30/2023 6:47:21 PM
Surr: DNOP	96.7	69-147		%Rec	1	6/30/2023 6:47:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 9:33:00 PM
Surr: BFB	93.9	15-244		%Rec	1	6/29/2023 9:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 9:33:00 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 9:33:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 9:33:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 9:33:00 PM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	6/29/2023 9:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 12:33:52 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-79 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 10:10:00 AM
Lab ID: 2306E09-002 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/30/2023 6:58:21 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2023 6:58:21 PM
Surr: DNOP	120	69-147		%Rec	1	6/30/2023 6:58:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/29/2023 9:55:00 PM
Surr: BFB	92.3	15-244		%Rec	1	6/29/2023 9:55:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 9:55:00 PM
Toluene	ND	0.047		mg/Kg	1	6/29/2023 9:55:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	6/29/2023 9:55:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	6/29/2023 9:55:00 PM
Surr: 4-Bromofluorobenzene	92.5	39.1-146		%Rec	1	6/29/2023 9:55:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	100	60		mg/Kg	20	7/3/2023 12:46:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-80 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 10:20:00 AM
Lab ID: 2306E09-003 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	3000	98		mg/Kg	10	6/30/2023 1:37:12 PM
Motor Oil Range Organics (MRO)	1700	490		mg/Kg	10	6/30/2023 1:37:12 PM
Surr: DNOP	0	69-147	S	%Rec	10	6/30/2023 1:37:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/29/2023 10:17:00 PM
Surr: BFB	92.6	15-244		%Rec	1	6/29/2023 10:17:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.023		mg/Kg	1	6/29/2023 10:17:00 PM
Toluene	ND	0.046		mg/Kg	1	6/29/2023 10:17:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	6/29/2023 10:17:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	6/29/2023 10:17:00 PM
Surr: 4-Bromofluorobenzene	91.4	39.1-146		%Rec	1	6/29/2023 10:17:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	61	60		mg/Kg	20	7/3/2023 12:58:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306E09-004 **Matrix:** SOIL

Client Sample ID: BH23-80 2.0'
Collection Date: 6/26/2023 10:30:00 AM
Received Date: 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/30/2023 7:09:24 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/30/2023 7:09:24 PM
Surr: DNOP	89.5	69-147		%Rec	1	6/30/2023 7:09:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 10:39:00 PM
Surr: BFB	93.1	15-244		%Rec	1	6/29/2023 10:39:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 10:39:00 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 10:39:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 10:39:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	6/29/2023 10:39:00 PM
Surr: 4-Bromofluorobenzene	92.0	39.1-146		%Rec	1	6/29/2023 10:39:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	92	59		mg/Kg	20	7/3/2023 1:11:06 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-80 4.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 10:40:00 AM
Lab ID: 2306E09-005 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/30/2023 7:20:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2023 7:20:24 PM
Surr: DNOP	92.0	69-147		%Rec	1	6/30/2023 7:20:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/29/2023 11:22:00 PM
Surr: BFB	94.8	15-244		%Rec	1	6/29/2023 11:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 11:22:00 PM
Toluene	ND	0.049		mg/Kg	1	6/29/2023 11:22:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/29/2023 11:22:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	6/29/2023 11:22:00 PM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	6/29/2023 11:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	210	60		mg/Kg	20	7/3/2023 1:23:31 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-81 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 10:50:00 AM
Lab ID: 2306E09-006 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/30/2023 7:31:21 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2023 7:31:21 PM
Surr: DNOP	90.8	69-147		%Rec	1	6/30/2023 7:31:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/29/2023 5:15:23 PM
Surr: BFB	112	15-244		%Rec	1	6/29/2023 5:15:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 5:15:23 PM
Toluene	ND	0.049		mg/Kg	1	6/29/2023 5:15:23 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/29/2023 5:15:23 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 5:15:23 PM
Surr: 4-Bromofluorobenzene	93.5	39.1-146		%Rec	1	6/29/2023 5:15:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 1:35:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-81 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:00:00 AM
Lab ID: 2306E09-007 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/30/2023 7:42:20 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2023 7:42:20 PM
Surr: DNOP	93.1	69-147		%Rec	1	6/30/2023 7:42:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/29/2023 5:39:40 PM
Surr: BFB	111	15-244		%Rec	1	6/29/2023 5:39:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 5:39:40 PM
Toluene	ND	0.049		mg/Kg	1	6/29/2023 5:39:40 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/29/2023 5:39:40 PM
Xylenes, Total	ND	0.098		mg/Kg	1	6/29/2023 5:39:40 PM
Surr: 4-Bromofluorobenzene	91.9	39.1-146		%Rec	1	6/29/2023 5:39:40 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 1:48:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-82 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:10:00 AM
Lab ID: 2306E09-008 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	6/30/2023 7:53:16 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/30/2023 7:53:16 PM
Surr: DNOP	101	69-147		%Rec	1	6/30/2023 7:53:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/29/2023 6:04:04 PM
Surr: BFB	109	15-244		%Rec	1	6/29/2023 6:04:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 6:04:04 PM
Toluene	ND	0.048		mg/Kg	1	6/29/2023 6:04:04 PM
Ethylbenzene	ND	0.048		mg/Kg	1	6/29/2023 6:04:04 PM
Xylenes, Total	ND	0.097		mg/Kg	1	6/29/2023 6:04:04 PM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	6/29/2023 6:04:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 2:00:46 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-82 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:20:00 AM
Lab ID: 2306E09-009 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/30/2023 8:14:58 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/30/2023 8:14:58 PM
Surr: DNOP	96.1	69-147		%Rec	1	6/30/2023 8:14:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 6:28:30 PM
Surr: BFB	111	15-244		%Rec	1	6/29/2023 6:28:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 6:28:30 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 6:28:30 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 6:28:30 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 6:28:30 PM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	6/29/2023 6:28:30 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	7/3/2023 2:13:10 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-83 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:30:00 AM
Lab ID: 2306E09-010 **Matrix:** SOIL
Received Date: 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/30/2023 8:25:55 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2023 8:25:55 PM
Surr: DNOP	94.7	69-147		%Rec	1	6/30/2023 8:25:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 6:52:46 PM
Surr: BFB	108	15-244		%Rec	1	6/29/2023 6:52:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 6:52:46 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 6:52:46 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 6:52:46 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 6:52:46 PM
Surr: 4-Bromofluorobenzene	91.7	39.1-146		%Rec	1	6/29/2023 6:52:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	60		mg/Kg	20	7/3/2023 2:50:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-83 2.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:40:00 AM
Lab ID: 2306E09-011 **Matrix:** SOIL **Received Date:** 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/30/2023 8:36:48 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2023 8:36:48 PM
Surr: DNOP	109	69-147		%Rec	1	6/30/2023 8:36:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 7:16:57 PM
Surr: BFB	108	15-244		%Rec	1	6/29/2023 7:16:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 7:16:57 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 7:16:57 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 7:16:57 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 7:16:57 PM
Surr: 4-Bromofluorobenzene	91.5	39.1-146		%Rec	1	6/29/2023 7:16:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	7/3/2023 3:02:49 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-84 0.0'
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/26/2023 11:50:00 AM
Lab ID: 2306E09-012 **Matrix:** SOIL
Received Date: 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/30/2023 8:47:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/30/2023 8:47:40 PM
Surr: DNOP	93.8	69-147		%Rec	1	6/30/2023 8:47:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/29/2023 7:41:06 PM
Surr: BFB	110	15-244		%Rec	1	6/29/2023 7:41:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	6/29/2023 7:41:06 PM
Toluene	ND	0.048		mg/Kg	1	6/29/2023 7:41:06 PM
Ethylbenzene	ND	0.048		mg/Kg	1	6/29/2023 7:41:06 PM
Xylenes, Total	ND	0.096		mg/Kg	1	6/29/2023 7:41:06 PM
Surr: 4-Bromofluorobenzene	93.2	39.1-146		%Rec	1	6/29/2023 7:41:06 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	7/3/2023 3:15:14 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306E09**
Date Reported: **7/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306E09-013 **Matrix:** SOIL

Client Sample ID: BH23-84 2.0'
Collection Date: 6/26/2023 12:00:00 PM
Received Date: 6/28/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/30/2023 8:58:31 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2023 8:58:31 PM
Surr: DNOP	93.8	69-147		%Rec	1	6/30/2023 8:58:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/29/2023 8:05:09 PM
Surr: BFB	107	15-244		%Rec	1	6/29/2023 8:05:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	6/29/2023 8:05:09 PM
Toluene	ND	0.050		mg/Kg	1	6/29/2023 8:05:09 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/29/2023 8:05:09 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/29/2023 8:05:09 PM
Surr: 4-Bromofluorobenzene	91.3	39.1-146		%Rec	1	6/29/2023 8:05:09 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	61	59		mg/Kg	20	7/3/2023 3:27:39 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75962**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75962**	RunNo: **97896**
Prep Date: **7/3/2023**	Analysis Date: **7/3/2023**	SeqNo: **3561639** Units: **mg/Kg**

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

Sample ID: **LCS-75962**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75962**	RunNo: **97896**
Prep Date: **7/3/2023**	Analysis Date: **7/3/2023**	SeqNo: **3561640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306E09-006AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-81 0.0'**	Batch ID: **75911**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560470** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.9	49.65	0	83.8	54.2	135			
Surr: DNOP	4.5		4.965		91.1	69	147			

Sample ID: **2306E09-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-81 0.0'**	Batch ID: **75911**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560471** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	9.4	46.86	0	78.9	54.2	135	11.8	29.2	
Surr: DNOP	4.2		4.686		90.5	69	147	0	0	

Sample ID: **LCS-75907**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560506** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.7	61.9	130			
Surr: DNOP	4.5		5.000		90.7	69	147			

Sample ID: **LCS-75911**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75911**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560507** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	4.9		5.000		98.1	69	147			

Sample ID: **MB-75907**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75907**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560510** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.3	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75911**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75911**	RunNo: **97879**
Prep Date: **6/29/2023**	Analysis Date: **6/30/2023**	SeqNo: **3560511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.2	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-75893**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558099** 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	91.3	70	130			
Surr: BFB	2100		1000		210	15	244			

Sample ID: **mb-75893**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558102** 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	950		1000		94.6	15	244			

Sample ID: **mb-75895**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558395** 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		110	15	244			

Sample ID: **2306e09-006ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-81 0.0'**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559299** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.68	0	91.4	70	130			
Surr: BFB	2100		987.2		214	15	244			

Sample ID: **2306e09-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-81 0.0'**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559300** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.56	0	96.5	70	130	4.96	20	
Surr: BFB	2100		982.3		218	15	244	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-75893**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558106** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.3	70	130			
Toluene	0.84	0.050	1.000	0	84.1	70	130			
Ethylbenzene	0.85	0.050	1.000	0	84.8	70	130			
Xylenes, Total	2.5	0.10	3.000	0	84.9	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	39.1	146			

Sample ID: **mb-75893**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75893**	RunNo: **97804**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558107** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	39.1	146			

Sample ID: **mb-75895**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3558398** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.0	39.1	146			

Sample ID: **2306e09-007ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-81 2.0'**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559319** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9823	0	85.2	70	130			
Toluene	0.86	0.049	0.9823	0	87.2	70	130			
Ethylbenzene	0.87	0.049	0.9823	0	88.1	70	130			
Xylenes, Total	2.6	0.098	2.947	0	88.9	70	130			
Surr: 4-Bromofluorobenzene	0.90		0.9823		91.4	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306E09**

06-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **2306e09-007amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-81 2.0'**	Batch ID: **75895**	RunNo: **97810**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559320** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.75	0.025	0.9814	0	76.4	70	130	11.0	20	
Toluene	0.77	0.049	0.9814	0	78.8	70	130	10.1	20	
Ethylbenzene	0.78	0.049	0.9814	0	79.9	70	130	9.79	20	
Xylenes, Total	2.4	0.098	2.944	0	81.1	70	130	9.30	20	
Surr: 4-Bromofluorobenzene	0.91		0.9814		92.4	39.1	146	0	0	

Qualifiers:

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

Page 403 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: Devon Energy | Work Order Number: 2306E09 | RcptNo: 1

Received By: Juan Rojas 6/28/2023 7:15:00 AM

Completed By: Tracy Casarrubias 6/28/2023 7:51:47 AM

Reviewed By: 6/28/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: JM 6/28/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 6/28/23

16. Additional remarks: Sample collection time missing on C.O.C - TMC 6/28/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes	Morty		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: AW

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Mouty

Cooler Temp(including CF): 1.6-0.2=1.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name		Container Type and #	Preservative Type	HEAL No. 2306609
6-26-23	10:00	So.1	BH23-79	0.0	4oz	ICE	001
	10:10		BH23-79	2.0			002
	10:20		BH23-80	0.0			003
	10:30		BH23-80	2.0			004
	10:40		BH23-80	4.0			005
	10:50		BH23-81	0.0			006
	11:00		BH23-81	2.0			007
	11:10		BH23-82	0.0			008
	11:20		BH23-82	2.0			009
	11:30		BH23-83	0.0			010
	11:40		BH23-83	2.0			011
	11:50		BH23-84	0.0			012

Analysis Request	
BTEX / MTBE / TMB's (8021)	✓
TPH 8015D(GRO / DRO / MRO)	✓
8081 Pesticides/8082 PCB's	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl, F, Br, NO_3, NO_2, PO_4, SO_4	✓
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Relinquished by:	Date	Time	Received by:	Via:	Date	Time
					6/27/23	945
	6/27/23	1900		courier	6/28/23	7:15

Remarks: cc: Kent Stallings

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

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit #12 KTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: AH

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Mo.Ty

Cooler Temp(Including CF): 1.6-0.2 = 1.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2306E09
6-26-23	12:00	S.	BH23-84 2.0	4oz	ICE	001
	JM 6/28/23					

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/27/23	945
6/27/23	1900			Courier	6/28/23	7:15

Remarks: CC: Kent Stallings

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 14, 2023

Kent Stallings

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (505) 350-1336
FAX:

RE: Cotton Draw Unit 1 12 CTB OrderNo.: 2306C86

Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/24/2023 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306C86-001 **Matrix:** SOIL

Client Sample ID: BH23-05 6.0
Collection Date: 6/22/2023 9:00:00 AM
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	6/28/2023 2:00:57 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	6/28/2023 2:00:57 PM
Surr: DNOP	95.7	69-147		%Rec	1	6/28/2023 2:00:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/28/2023 5:41:00 PM
Surr: BFB	95.8	15-244		%Rec	1	6/28/2023 5:41:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 5:41:00 PM
Toluene	ND	0.049		mg/Kg	1	6/28/2023 5:41:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/28/2023 5:41:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/28/2023 5:41:00 PM
Surr: 4-Bromofluorobenzene	94.7	39.1-146		%Rec	1	6/28/2023 5:41:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	1400	60		mg/Kg	20	6/28/2023 3:51:43 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306C86-002 **Matrix:** SOIL

Client Sample ID: BH23-09 6.0
Collection Date: 6/22/2023 9:10:00 AM
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/28/2023 2:11:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/28/2023 2:11:44 PM
Surr: DNOP	97.8	69-147		%Rec	1	6/28/2023 2:11:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/28/2023 6:03:00 PM
Surr: BFB	99.1	15-244		%Rec	1	6/28/2023 6:03:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 6:03:00 PM
Toluene	ND	0.049		mg/Kg	1	6/28/2023 6:03:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/28/2023 6:03:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/28/2023 6:03:00 PM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	6/28/2023 6:03:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 4:53:45 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Cotton Draw Unit 1 12 CTB
Lab ID: 2306C86-003 **Matrix:** SOIL

Client Sample ID: BH23-61 6.0
Collection Date: 6/22/2023 9:20:00 AM
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	6/28/2023 2:22:33 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	6/28/2023 2:22:33 PM
Surr: DNOP	101	69-147		%Rec	1	6/28/2023 2:22:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/28/2023 6:48:00 PM
Surr: BFB	96.5	15-244		%Rec	1	6/28/2023 6:48:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 6:48:00 PM
Toluene	ND	0.049		mg/Kg	1	6/28/2023 6:48:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/28/2023 6:48:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/28/2023 6:48:00 PM
Surr: 4-Bromofluorobenzene	93.6	39.1-146		%Rec	1	6/28/2023 6:48:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 5:06:10 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-63 0.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 9:30:00 AM
Lab ID: 2306C86-004 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/28/2023 2:33:22 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/28/2023 2:33:22 PM
Surr: DNOP	105	69-147		%Rec	1	6/28/2023 2:33:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/28/2023 7:10:00 PM
Surr: BFB	95.8	15-244		%Rec	1	6/28/2023 7:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/28/2023 7:10:00 PM
Toluene	ND	0.049		mg/Kg	1	6/28/2023 7:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/28/2023 7:10:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	6/28/2023 7:10:00 PM
Surr: 4-Bromofluorobenzene	93.0	39.1-146		%Rec	1	6/28/2023 7:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 5:18:34 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-63 2.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 9:40:00 AM
Lab ID: 2306C86-005 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/28/2023 4:48:52 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/28/2023 4:48:52 PM
Surr: DNOP	86.0	69-147		%Rec	1	6/28/2023 4:48:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/28/2023 7:32:00 PM
Surr: BFB	95.9	15-244		%Rec	1	6/28/2023 7:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 7:32:00 PM
Toluene	ND	0.050		mg/Kg	1	6/28/2023 7:32:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/28/2023 7:32:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	6/28/2023 7:32:00 PM
Surr: 4-Bromofluorobenzene	93.3	39.1-146		%Rec	1	6/28/2023 7:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 5:30:58 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-64 0.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 9:50:00 AM
Lab ID: 2306C86-006 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	6/28/2023 4:59:42 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	6/28/2023 4:59:42 PM
Surr: DNOP	104	69-147		%Rec	1	6/28/2023 4:59:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/28/2023 7:54:00 PM
Surr: BFB	103	15-244		%Rec	1	6/28/2023 7:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 7:54:00 PM
Toluene	ND	0.050		mg/Kg	1	6/28/2023 7:54:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/28/2023 7:54:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	6/28/2023 7:54:00 PM
Surr: 4-Bromofluorobenzene	93.2	39.1-146		%Rec	1	6/28/2023 7:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 5:43:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-64 2.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 10:10:00 AM
Lab ID: 2306C86-007 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/28/2023 5:10:42 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/28/2023 5:10:42 PM
Surr: DNOP	90.2	69-147		%Rec	1	6/28/2023 5:10:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/28/2023 8:16:00 PM
Surr: BFB	94.4	15-244		%Rec	1	6/28/2023 8:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	6/28/2023 8:16:00 PM
Toluene	ND	0.048		mg/Kg	1	6/28/2023 8:16:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	6/28/2023 8:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	6/28/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	92.1	39.1-146		%Rec	1	6/28/2023 8:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/28/2023 5:55:47 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-65 0.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 10:20:00 AM
Lab ID: 2306C86-008 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.1		mg/Kg	1	6/28/2023 5:21:41 PM
Motor Oil Range Organics (MRO)	ND	40		mg/Kg	1	6/28/2023 5:21:41 PM
Surr: DNOP	110	69-147		%Rec	1	6/28/2023 5:21:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/28/2023 9:00:00 PM
Surr: BFB	94.8	15-244		%Rec	1	6/28/2023 9:00:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 9:00:00 PM
Toluene	ND	0.050		mg/Kg	1	6/28/2023 9:00:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	6/28/2023 9:00:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	6/28/2023 9:00:00 PM
Surr: 4-Bromofluorobenzene	92.6	39.1-146		%Rec	1	6/28/2023 9:00:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/29/2023 11:40:07 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C86**
Date Reported: **7/14/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-65 2.0
Project: Cotton Draw Unit 1 12 CTB
Collection Date: 6/22/2023 10:30:00 AM
Lab ID: 2306C86-009 **Matrix:** SOIL **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	6/28/2023 5:32:39 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	6/28/2023 5:32:39 PM
Surr: DNOP	92.6	69-147		%Rec	1	6/28/2023 5:32:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/28/2023 9:22:00 PM
Surr: BFB	103	15-244		%Rec	1	6/28/2023 9:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	6/28/2023 9:22:00 PM
Toluene	ND	0.049		mg/Kg	1	6/28/2023 9:22:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	6/28/2023 9:22:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	6/28/2023 9:22:00 PM
Surr: 4-Bromofluorobenzene	93.7	39.1-146		%Rec	1	6/28/2023 9:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	6/29/2023 11:52:28 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306C86**

14-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **MB-75886**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75886**	RunNo: **97784**
Prep Date: **6/28/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557546** Units: **mg/Kg**

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

Sample ID: **LCS-75886**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75886**	RunNo: **97784**
Prep Date: **6/28/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557547** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Sample ID: **MB-75902**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **75902**	RunNo: **97846**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559150** Units: **mg/Kg**

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

Sample ID: **LCS-75902**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **75902**	RunNo: **97846**
Prep Date: **6/28/2023**	Analysis Date: **6/29/2023**	SeqNo: **3559151** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306C86**

14-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **LCS-75869**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **75869**	RunNo: **97779**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	10	50.00	0	73.3	61.9	130			
Surr: DNOP	4.2		5.000		83.9	69	147			

Sample ID: **MB-75869**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **75869**	RunNo: **97779**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3557676** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306C86**

14-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-75862**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **75862**	RunNo: **97769**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3556942** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.5	70	130			
Surr: BFB	2000		1000		201	15	244			

Sample ID: **mb-75862**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **75862**	RunNo: **97769**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3556943** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306C86**

14-Jul-23

Client: Devon Energy

Project: Cotton Draw Unit 1 12 CTB

Sample ID: **lcs-75862**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **75862**	RunNo: **97769**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3556950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.6	70	130			
Toluene	0.90	0.050	1.000	0	89.7	70	130			
Ethylbenzene	0.91	0.050	1.000	0	90.8	70	130			
Xylenes, Total	2.7	0.10	3.000	0	90.7	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		96.6	39.1	146			

Sample ID: **mb-75862**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **75862**	RunNo: **97769**
Prep Date: **6/27/2023**	Analysis Date: **6/28/2023**	SeqNo: **3556951** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.9	39.1	146			

Qualifiers:

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

Page 420 of 524

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: Devon Energy | Work Order Number: 2306C86 | RcptNo: 1

Received By: Tracy Casarrubias 6/24/2023 7:45:00 AM

Completed By: Tracy Casarrubias 6/25/2023 7:19:06 AM

Reviewed By: 6-26-23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: SCM 06/26/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address, phone number and Email/Fax are missing on COC- TMC 6/25/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Yes	Yogi		

Received by OCD: 11/20/2024 10:11:07 AM

Released to Imaging: 12/11/2024 3:19:34 PM

Chain-of-Custody Record

Client: Devon

Direct Bill

Mailing Address:

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: Cotton Draw Unit 1-12 CTB

Project #: 23E-02423

Project Manager: Kent Stallings

Sampler: MT

On Ice: ☑ Yes ☐ No 409

# of Coolers: 1

Cooler Temp(including CF): 1.9 +0.1 = 2.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name		Container Type and #	Preservative Type	HEAL No. 23060C86	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6-22-23	0900	Soil	BH23-05	6.0	402	ICE	001	✓	✓					✓			
	0910		BH23-09	6.0			002										
	0920		BH23-61	6.0			003										
	0930		BH23-63	0.0			004										
	0940		BH23-63	2.0			005										
	0950		BH23-64	0.0			006										
	1010		BH23-64	2.0			007										
	1020	✓	BH23-65	0.0			008										
✓	1030		BH23-65	2.0	✓	✓	009	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					6/23/23	
6/23/23	1900				6/24/23	7:45

Remarks: CC: Kent Stallings

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Hensley
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 7/9/2024 11:52:17 AM

JOB DESCRIPTION

Cotton Draw 1-12 CTB

JOB NUMBER

885-7227-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Released to Imaging: 12/11/2024 3:19:34 PM

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization



Generated
7/9/2024 11:52:17 AM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Laboratory Job ID: 885-7227-1

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 8
QC Association Summary 12
Lab Chronicle 14
Certification Summary 15
Chain of Custody 16
Receipt Checklists 17

Definitions/Glossary

Client: Vertex Job ID: 885-7227-1
Project/Site: Cotton Draw 1-12 CTB

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Vertex
Project: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Job ID: 885-7227-1 Eurofins Albuquerque

Job Narrative
885-7227-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 7/2/2024 8:03 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C.

Gasoline Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Client Sample ID: Backfill-01

Date Collected: 06/28/24 12:00
Date Received: 07/02/24 08:03

Lab Sample ID: 885-7227-1

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.2		mg/Kg		07/02/24 11:39	07/02/24 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*35 - 166*	*07/02/24 11:39*	*07/02/24 12:58*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg		07/02/24 11:39	07/02/24 12:58	1
Ethylbenzene	ND		0.032		mg/Kg		07/02/24 11:39	07/02/24 12:58	1
Toluene	ND		0.032		mg/Kg		07/02/24 11:39	07/02/24 12:58	1
Xylenes, Total	ND		0.064		mg/Kg		07/02/24 11:39	07/02/24 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*48 - 145*	*07/02/24 11:39*	*07/02/24 12:58*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		07/02/24 17:02	07/02/24 19:06	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		07/02/24 17:02	07/02/24 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*	*07/02/24 17:02*	*07/02/24 19:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**60**		60		mg/Kg		07/03/24 09:05	07/03/24 16:09	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Client Sample ID: Backfill-02

Date Collected: 06/28/24 12:05
Date Received: 07/02/24 08:03

Lab Sample ID: 885-7227-2

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.2		mg/Kg		07/02/24 11:39	07/02/24 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*35 - 166*	*07/02/24 11:39*	*07/02/24 13:22*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016		mg/Kg		07/02/24 11:39	07/02/24 13:22	1
Ethylbenzene	ND		0.032		mg/Kg		07/02/24 11:39	07/02/24 13:22	1
Toluene	ND		0.032		mg/Kg		07/02/24 11:39	07/02/24 13:22	1
Xylenes, Total	ND		0.063		mg/Kg		07/02/24 11:39	07/02/24 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*48 - 145*	*07/02/24 11:39*	*07/02/24 13:22*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/02/24 17:02	07/02/24 19:31	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/02/24 17:02	07/02/24 19:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*95*		*62 - 134*	*07/02/24 17:02*	*07/02/24 19:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**74**		60		mg/Kg		07/03/24 09:05	07/03/24 16:21	20

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-7778/1-A
Matrix: Solid
Analysis Batch: 7830

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7778

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		07/02/24 11:39	07/02/24 12:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*35 - 166*	*07/02/24 11:39*	*07/02/24 12:34*	*1*

Lab Sample ID: LCS 885-7778/2-A
Matrix: Solid
Analysis Batch: 7830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7778

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	25.4		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*	*S1+*	*35 - 166*

Lab Sample ID: 885-7227-1 MS
Matrix: Solid
Analysis Batch: 7830

Client Sample ID: Backfill-01
Prep Type: Total/NA
Prep Batch: 7778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]	ND		16.1	17.1		mg/Kg		106	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*213*	*S1+*	*35 - 166*

Lab Sample ID: 885-7227-1 MSD
Matrix: Solid
Analysis Batch: 7830

Client Sample ID: Backfill-01
Prep Type: Total/NA
Prep Batch: 7778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	ND		16.1	16.6		mg/Kg		103	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*215*	*S1+*	*35 - 166*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-7778/1-A
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7778

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/02/24 11:39	07/02/24 12:34	1
Ethylbenzene	ND		0.050		mg/Kg		07/02/24 11:39	07/02/24 12:34	1
Toluene	ND		0.050		mg/Kg		07/02/24 11:39	07/02/24 12:34	1

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-7778/1-A
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7778

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		0.10		mg/Kg		07/02/24 11:39	07/02/24 12:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*48 - 145*	*07/02/24 11:39*	*07/02/24 12:34*	*1*

Lab Sample ID: LCS 885-7778/3-A
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7778

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.892		mg/Kg		89	70 - 130		
Ethylbenzene			1.00	0.839		mg/Kg		84	70 - 130		
m,p-Xylene			2.00	1.71		mg/Kg		86	70 - 130		
o-Xylene			1.00	0.841		mg/Kg		84	70 - 130		
Toluene			1.00	0.839		mg/Kg		84	70 - 130		
Xylenes, Total			3.00	2.55		mg/Kg		85	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*

Lab Sample ID: 885-7227-2 MS
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Backfill-02
Prep Type: Total/NA
Prep Batch: 7778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		0.631	0.569		mg/Kg		90	70 - 130		
Ethylbenzene	ND		0.631	0.542		mg/Kg		86	70 - 130		
m,p-Xylene	ND		1.26	1.10		mg/Kg		86	70 - 130		
o-Xylene	ND		0.631	0.536		mg/Kg		85	70 - 130		
Toluene	ND		0.631	0.538		mg/Kg		84	70 - 130		
Xylenes, Total	ND		1.89	1.64		mg/Kg		86	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*48 - 145*

Lab Sample ID: 885-7227-2 MSD
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Backfill-02
Prep Type: Total/NA
Prep Batch: 7778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.631	0.543		mg/Kg		86	70 - 130	5	20
Ethylbenzene	ND		0.631	0.522		mg/Kg		83	70 - 130	4	20
m,p-Xylene	ND		1.26	1.08		mg/Kg		84	70 - 130	2	20
o-Xylene	ND		0.631	0.523		mg/Kg		83	70 - 130	2	20
Toluene	ND		0.631	0.512		mg/Kg		80	70 - 130	5	20
Xylenes, Total	ND		1.89	1.60		mg/Kg		84	70 - 130	2	20

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-7227-2 MSD
Matrix: Solid
Analysis Batch: 7831

Client Sample ID: Backfill-02
Prep Type: Total/NA
Prep Batch: 7778

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*48 - 145*

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-7832/1-A
Matrix: Solid
Analysis Batch: 7765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7832

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/02/24 17:02	07/02/24 18:18	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/02/24 17:02	07/02/24 18:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*07/02/24 17:02*	*07/02/24 18:18*	*1*

Lab Sample ID: LCS 885-7832/2-A
Matrix: Solid
Analysis Batch: 7765

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7832

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	57.1		mg/Kg		114	60 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*109*		*62 - 134*

Lab Sample ID: 885-7227-2 MS
Matrix: Solid
Analysis Batch: 7765

Client Sample ID: Backfill-02
Prep Type: Total/NA
Prep Batch: 7832

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]	ND		47.9	52.1		mg/Kg		109	44 - 136		

Surrogate	MS %Recovery	MS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*

Lab Sample ID: 885-7227-2 MSD
Matrix: Solid
Analysis Batch: 7765

Client Sample ID: Backfill-02
Prep Type: Total/NA
Prep Batch: 7832

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	ND		45.5	48.5		mg/Kg		107	44 - 136	7	32

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-7850/1-A
Matrix: Solid
Analysis Batch: 7895

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7850

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0		mg/Kg		07/03/24 09:05	07/03/24 10:33	1

Lab Sample ID: LCS 885-7850/2-A
Matrix: Solid
Analysis Batch: 7895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7850

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			30.0	27.0		mg/Kg		90	90 - 110		

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw 1-12 CTB

Job ID: 885-7227-1

GC VOA

Prep Batch: 7778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	5035	
885-7227-2	Backfill-02	Total/NA	Solid	5035	
MB 885-7778/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-7778/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-7778/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-7227-1 MS	Backfill-01	Total/NA	Solid	5035	
885-7227-1 MSD	Backfill-01	Total/NA	Solid	5035	
885-7227-2 MS	Backfill-02	Total/NA	Solid	5035	
885-7227-2 MSD	Backfill-02	Total/NA	Solid	5035	

Analysis Batch: 7830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	8015M/D	7778
885-7227-2	Backfill-02	Total/NA	Solid	8015M/D	7778
MB 885-7778/1-A	Method Blank	Total/NA	Solid	8015M/D	7778
LCS 885-7778/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7778
885-7227-1 MS	Backfill-01	Total/NA	Solid	8015M/D	7778
885-7227-1 MSD	Backfill-01	Total/NA	Solid	8015M/D	7778

Analysis Batch: 7831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	8021B	7778
885-7227-2	Backfill-02	Total/NA	Solid	8021B	7778
MB 885-7778/1-A	Method Blank	Total/NA	Solid	8021B	7778
LCS 885-7778/3-A	Lab Control Sample	Total/NA	Solid	8021B	7778
885-7227-2 MS	Backfill-02	Total/NA	Solid	8021B	7778
885-7227-2 MSD	Backfill-02	Total/NA	Solid	8021B	7778

GC Semi VOA

Analysis Batch: 7765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	8015M/D	7832
885-7227-2	Backfill-02	Total/NA	Solid	8015M/D	7832
MB 885-7832/1-A	Method Blank	Total/NA	Solid	8015M/D	7832
LCS 885-7832/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7832
885-7227-2 MS	Backfill-02	Total/NA	Solid	8015M/D	7832
885-7227-2 MSD	Backfill-02	Total/NA	Solid	8015M/D	7832

Prep Batch: 7832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	SHAKE	
885-7227-2	Backfill-02	Total/NA	Solid	SHAKE	
MB 885-7832/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-7832/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-7227-2 MS	Backfill-02	Total/NA	Solid	SHAKE	
885-7227-2 MSD	Backfill-02	Total/NA	Solid	SHAKE	

QC Association Summary

Client: Vertex
Job ID: 885-7227-1
Project/Site: Cotton Draw 1-12 CTB

HPLC/IC

Prep Batch: 7850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	300_Prep	
885-7227-2	Backfill-02	Total/NA	Solid	300_Prep	
MB 885-7850/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-7850/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	

Analysis Batch: 7895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7227-1	Backfill-01	Total/NA	Solid	300.0	7850
885-7227-2	Backfill-02	Total/NA	Solid	300.0	7850
MB 885-7850/1-A	Method Blank	Total/NA	Solid	300.0	7850
LCS 885-7850/2-A	Lab Control Sample	Total/NA	Solid	300.0	7850

Lab Chronicle

Client: Vertex
Job ID: 885-7227-1
Project/Site: Cotton Draw 1-12 CTB

Client Sample ID: Backfill-01
Lab Sample ID: 885-7227-1
Date Collected: 06/28/24 12:00
Matrix: Solid
Date Received: 07/02/24 08:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			7778	JP	EET ALB	07/02/24 11:39
Total/NA	Analysis	8015M/D		1	7830	JP	EET ALB	07/02/24 12:58
Total/NA	Prep	5035			7778	JP	EET ALB	07/02/24 11:39
Total/NA	Analysis	8021B		1	7831	JP	EET ALB	07/02/24 12:58
Total/NA	Prep	SHAKE			7832	DH	EET ALB	07/02/24 17:02
Total/NA	Analysis	8015M/D		1	7765	DH	EET ALB	07/02/24 19:06
Total/NA	Prep	300_Prep			7850	RC	EET ALB	07/03/24 09:05
Total/NA	Analysis	300.0		20	7895	MA	EET ALB	07/03/24 16:09

Client Sample ID: Backfill-02
Lab Sample ID: 885-7227-2
Date Collected: 06/28/24 12:05
Matrix: Solid
Date Received: 07/02/24 08:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			7778	JP	EET ALB	07/02/24 11:39
Total/NA	Analysis	8015M/D		1	7830	JP	EET ALB	07/02/24 13:22
Total/NA	Prep	5035			7778	JP	EET ALB	07/02/24 11:39
Total/NA	Analysis	8021B		1	7831	JP	EET ALB	07/02/24 13:22
Total/NA	Prep	SHAKE			7832	DH	EET ALB	07/02/24 17:02
Total/NA	Analysis	8015M/D		1	7765	DH	EET ALB	07/02/24 19:31
Total/NA	Prep	300_Prep			7850	RC	EET ALB	07/03/24 09:05
Total/NA	Analysis	300.0		20	7895	MA	EET ALB	07/03/24 16:21

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Vertex Job ID: 885-7227-1
Project/Site: Cotton Draw 1-12 CTB

Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015M/D	5035	Solid	Gasoline Range Organics [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5035	Solid	Benzene
8021B	5035	Solid	Ethylbenzene
8021B	5035	Solid	Toluene
8021B	5035	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Released to Imaging: 12/11/2024 3:19:34 PM
Received by OCD: 11/20/2024 10:11:07 AM

Chain-of-Custody Record

Client: (Devon) Verfex

Mailing Address:

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☐ Standard ☑ Rush 24 hr

Project Name: Cotton Draw 1-12 CTB

Project #: 23E-02423

Project Manager: Chad Hensley/KentStallings

Sampler: SM

On Ice: ~~☐~~ Yes ☐ No

# of Coolers: 1 Yog.

Cooler Temp(including CF): 0.7+0.1=0.6 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109-7227 COC
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/28/24	12:00	Soil	Backfill-01	04 4oz jar	Ice	1	✓	✓					✓			
6/28/24	12:05	↓	Backfill-02	↓	↓	2	✓	✓					✓			

Date	Time	Relinquished by	Received by	Via	Date	Time
7/1/24	1015				7/1/24	1015
7/1/24	1900			Courier	7/2/24	8:03

Remarks: Direct bill to: Devon w/o#:211 60360

C.C. SMccarty@Verfex.com

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

Login Sample Receipt Checklist

Client: Vertex Job Number: 885-7227-1

Login Number: 7227 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: McQuiston, Steven

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Hensley
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 7/29/2024 9:40:11 AM

JOB DESCRIPTION

Cotton Draw Unit 1-12

JOB NUMBER

885-8239-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Released to Imaging: 12/11/2024 3:19:34 PM

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization



Generated
7/29/2024 9:40:11 AM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Laboratory Job ID: 885-8239-1

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 34
QC Association Summary 41
Lab Chronicle 47
Certification Summary 56
Chain of Custody 57
Receipt Checklists 60

Definitions/Glossary

Client: Vertex Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Vertex Job ID: 885-8239-1
Project: Cotton Draw Unit 1-12

Job ID: 885-8239-1 Eurofins Albuquerque

Job Narrative
885-8239-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 7/18/2024 7:08 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C.

Gasoline Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015D_DRO: The continuing calibration verification (CCV) associated with batch 885-8875 recovered outside acceptance criteria, low biased, for Di-n-octyl phthalate (Surr). Samples degraded inlet liner, causing low surrogate recovery, all samples with low surrogate will be re-ran. Reporting all samples with passing surrogate. The following samples are associated CS24-16 @ 1' (885-8239-16), CS24-17 @ 1' (885-8239-17), CS24-18 @ 1' (885-8239-18), CS24-19 @ 1' (885-8239-19), CS24-20 @ 1' (885-8239-20), CWS-01 @ 0-1' (885-8239-21), CWS-02 @ 0-1' (885-8239-22), CWS-03 @ 0-1' (885-8239-23), CWS-04 @ 0-1' (885-8239-24), CWS-05 @ 0-1' (885-8239-25) and CWS-06 @ 0-1' (885-8239-26).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-01 @ 1'

Date Collected: 07/16/24 10:03
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-1

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 08:44	07/22/24 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*35 - 166*	*07/19/24 08:44*	*07/22/24 12:17*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 12:17	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 12:17	1
Toluene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 12:17	1
Xylenes, Total	ND		0.099		mg/Kg		07/19/24 08:44	07/22/24 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 08:44*	*07/22/24 12:17*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**10**		9.5		mg/Kg		07/22/24 11:58	07/22/24 13:08	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		07/22/24 11:58	07/22/24 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 11:58*	*07/22/24 13:08*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 15:22	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-02 @ 1'

Date Collected: 07/16/24 10:09
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-2

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 08:44	07/22/24 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*35 - 166*	*07/19/24 08:44*	*07/22/24 13:28*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 13:28	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 13:28	1
Toluene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 13:28	1
Xylenes, Total	ND		0.10		mg/Kg		07/19/24 08:44	07/22/24 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*07/19/24 08:44*	*07/22/24 13:28*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5		mg/Kg		07/22/24 11:58	07/22/24 13:21	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		07/22/24 11:58	07/22/24 13:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*	*07/22/24 11:58*	*07/22/24 13:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 16:08	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-03 @ 1'

Date Collected: 07/16/24 10:13
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-3

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*35 - 166*	*07/19/24 08:44*	*07/22/24 14:38*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 14:38	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 14:38	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 14:38	1
Xylenes, Total	ND		0.098		mg/Kg		07/19/24 08:44	07/22/24 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*07/19/24 08:44*	*07/22/24 14:38*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**390**		9.9		mg/Kg		07/22/24 11:58	07/22/24 13:34	1
Motor Oil Range Organics [C28-C40]	**230**		49		mg/Kg		07/22/24 11:58	07/22/24 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*103*		*62 - 134*	*07/22/24 11:58*	*07/22/24 13:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		61		mg/Kg		07/22/24 13:36	07/22/24 16:53	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-04 @ 1'

Date Collected: 07/16/24 10:17
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-4

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*35 - 166*	*07/19/24 08:44*	*07/22/24 15:02*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 15:02	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 15:02	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 15:02	1
Xylenes, Total	ND		0.096		mg/Kg		07/19/24 08:44	07/22/24 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*48 - 145*	*07/19/24 08:44*	*07/22/24 15:02*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/22/24 11:58	07/22/24 13:47	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/22/24 11:58	07/22/24 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 11:58*	*07/22/24 13:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 17:08	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-05 @ 1'

Date Collected: 07/16/24 10:21
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-5

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7		mg/Kg		07/19/24 08:44	07/22/24 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 08:44*	*07/22/24 15:25*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 15:25	1
Ethylbenzene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 15:25	1
Toluene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 15:25	1
Xylenes, Total	ND		0.095		mg/Kg		07/19/24 08:44	07/22/24 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*48 - 145*	*07/19/24 08:44*	*07/22/24 15:25*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0		mg/Kg		07/22/24 11:58	07/22/24 14:00	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		07/22/24 11:58	07/22/24 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 11:58*	*07/22/24 14:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		61		mg/Kg		07/22/24 13:36	07/22/24 17:54	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-06 @ 1'

Date Collected: 07/16/24 10:24
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-6

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*35 - 166*	*07/19/24 08:44*	*07/22/24 15:49*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 15:49	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 15:49	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 15:49	1
Xylenes, Total	ND		0.096		mg/Kg		07/19/24 08:44	07/22/24 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*07/19/24 08:44*	*07/22/24 15:49*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		07/22/24 11:58	07/22/24 14:13	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		07/22/24 11:58	07/22/24 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*107*		*62 - 134*	*07/22/24 11:58*	*07/22/24 14:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 18:09	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-07 @ 1'

Date Collected: 07/16/24 10:32
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-7

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*35 - 166*	*07/19/24 08:44*	*07/22/24 16:12*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 16:12	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 16:12	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 16:12	1
Xylenes, Total	ND		0.096		mg/Kg		07/19/24 08:44	07/22/24 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 08:44*	*07/22/24 16:12*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		07/22/24 11:58	07/22/24 14:26	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		07/22/24 11:58	07/22/24 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*109*		*62 - 134*	*07/22/24 11:58*	*07/22/24 14:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 18:24	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-08 @ 1'

Date Collected: 07/16/24 10:38
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-8

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*35 - 166*	*07/19/24 08:44*	*07/22/24 16:36*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 16:36	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 16:36	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 16:36	1
Xylenes, Total	ND		0.097		mg/Kg		07/19/24 08:44	07/22/24 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*48 - 145*	*07/19/24 08:44*	*07/22/24 16:36*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		07/22/24 11:58	07/22/24 14:39	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		07/22/24 11:58	07/22/24 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 11:58*	*07/22/24 14:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 18:39	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-09 @ 1'

Date Collected: 07/16/24 10:49
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-9

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7		mg/Kg		07/19/24 08:44	07/22/24 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*35 - 166*	*07/19/24 08:44*	*07/22/24 16:59*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		07/19/24 08:44	07/22/24 16:59	1
Ethylbenzene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 16:59	1
Toluene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 16:59	1
Xylenes, Total	ND		0.093		mg/Kg		07/19/24 08:44	07/22/24 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*48 - 145*	*07/19/24 08:44*	*07/22/24 16:59*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		07/22/24 11:58	07/22/24 14:52	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		07/22/24 11:58	07/22/24 14:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*108*		*62 - 134*	*07/22/24 11:58*	*07/22/24 14:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 18:54	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-10 @ 1'

Date Collected: 07/16/24 10:54
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-10

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 08:44*	*07/22/24 17:23*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 17:23	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 17:23	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 17:23	1
Xylenes, Total	ND		0.097		mg/Kg		07/19/24 08:44	07/22/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 08:44*	*07/22/24 17:23*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		07/22/24 11:58	07/22/24 15:05	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		07/22/24 11:58	07/22/24 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*108*		*62 - 134*	*07/22/24 11:58*	*07/22/24 15:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 19:09	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-11 @ 1'

Date Collected: 07/16/24 11:05
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-11

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 08:44*	*07/22/24 18:10*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 18:10	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 18:10	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 18:10	1
Xylenes, Total	ND		0.099		mg/Kg		07/19/24 08:44	07/22/24 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*48 - 145*	*07/19/24 08:44*	*07/22/24 18:10*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		07/22/24 11:58	07/22/24 15:19	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		07/22/24 11:58	07/22/24 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*109*		*62 - 134*	*07/22/24 11:58*	*07/22/24 15:19*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1200**		60		mg/Kg		07/22/24 13:36	07/22/24 19:25	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-12 @ 1'

Date Collected: 07/16/24 11:05
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-12

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 08:44	07/22/24 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 08:44*	*07/22/24 18:33*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 18:33	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 18:33	1
Toluene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 18:33	1
Xylenes, Total	ND		0.10		mg/Kg		07/19/24 08:44	07/22/24 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*48 - 145*	*07/19/24 08:44*	*07/22/24 18:33*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/22/24 11:58	07/22/24 15:32	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/22/24 11:58	07/22/24 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*109*		*62 - 134*	*07/22/24 11:58*	*07/22/24 15:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**310**		60		mg/Kg		07/22/24 13:36	07/22/24 19:40	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-13 @ 1'

Date Collected: 07/16/24 11:10
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-13

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7		mg/Kg		07/19/24 08:44	07/22/24 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*35 - 166*	*07/19/24 08:44*	*07/22/24 18:57*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 18:57	1
Ethylbenzene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 18:57	1
Toluene	ND		0.047		mg/Kg		07/19/24 08:44	07/22/24 18:57	1
Xylenes, Total	ND		0.095		mg/Kg		07/19/24 08:44	07/22/24 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*48 - 145*	*07/19/24 08:44*	*07/22/24 18:57*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6		mg/Kg		07/22/24 11:58	07/22/24 15:45	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		07/22/24 11:58	07/22/24 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*	*07/22/24 11:58*	*07/22/24 15:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**530**		60		mg/Kg		07/22/24 13:36	07/22/24 19:55	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-14 @ 1'
Date Collected: 07/16/24 11:15
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-14
Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*35 - 166*	*07/19/24 08:44*	*07/22/24 19:20*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 19:20	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 19:20	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 19:20	1
Xylenes, Total	ND		0.098		mg/Kg		07/19/24 08:44	07/22/24 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*48 - 145*	*07/19/24 08:44*	*07/22/24 19:20*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		07/22/24 12:31	07/22/24 15:29	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		07/22/24 12:31	07/22/24 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*07/22/24 12:31*	*07/22/24 15:29*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**66**		60		mg/Kg		07/22/24 13:36	07/22/24 20:10	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-15 @ 1'

Date Collected: 07/16/24 11:18
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-15

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*35 - 166*	*07/19/24 08:44*	*07/22/24 19:44*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 19:44	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 19:44	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 19:44	1
Xylenes, Total	ND		0.097		mg/Kg		07/19/24 08:44	07/22/24 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*48 - 145*	*07/19/24 08:44*	*07/22/24 19:44*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		07/22/24 12:31	07/22/24 15:53	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		07/22/24 12:31	07/22/24 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*103*		*62 - 134*	*07/22/24 12:31*	*07/22/24 15:53*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 20:55	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-16 @ 1'
Date Collected: 07/16/24 11:24
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-16
Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*35 - 166*	*07/19/24 08:44*	*07/22/24 20:07*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 20:07	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 20:07	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 20:07	1
Xylenes, Total	ND		0.096		mg/Kg		07/19/24 08:44	07/22/24 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*48 - 145*	*07/19/24 08:44*	*07/22/24 20:07*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9		mg/Kg		07/22/24 12:31	07/22/24 15:33	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/22/24 12:31	07/22/24 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*07/22/24 12:31*	*07/22/24 15:33*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 21:11	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-17 @ 1'

Date Collected: 07/16/24 11:29
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-17

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*35 - 166*	*07/19/24 08:44*	*07/22/24 20:30*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 20:30	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 20:30	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 20:30	1
Xylenes, Total	ND		0.098		mg/Kg		07/19/24 08:44	07/22/24 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*48 - 145*	*07/19/24 08:44*	*07/22/24 20:30*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg		07/22/24 12:31	07/22/24 15:44	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		07/22/24 12:31	07/22/24 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*07/22/24 12:31*	*07/22/24 15:44*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		61		mg/Kg		07/22/24 13:36	07/22/24 21:26	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-18 @ 1'

Date Collected: 07/16/24 11:34
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-18

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.6		mg/Kg		07/19/24 08:44	07/22/24 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*35 - 166*	*07/19/24 08:44*	*07/22/24 20:54*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		07/19/24 08:44	07/22/24 20:54	1
Ethylbenzene	ND		0.046		mg/Kg		07/19/24 08:44	07/22/24 20:54	1
Toluene	ND		0.046		mg/Kg		07/19/24 08:44	07/22/24 20:54	1
Xylenes, Total	ND		0.092		mg/Kg		07/19/24 08:44	07/22/24 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*48 - 145*	*07/19/24 08:44*	*07/22/24 20:54*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg		07/22/24 12:31	07/22/24 15:55	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		07/22/24 12:31	07/22/24 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*	*07/22/24 12:31*	*07/22/24 15:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 21:41	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-19 @ 1'
Date Collected: 07/16/24 11:39
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-19
Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 08:44	07/22/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*35 - 166*	*07/19/24 08:44*	*07/22/24 21:17*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 21:17	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 21:17	1
Toluene	ND		0.049		mg/Kg		07/19/24 08:44	07/22/24 21:17	1
Xylenes, Total	ND		0.097		mg/Kg		07/19/24 08:44	07/22/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*48 - 145*	*07/19/24 08:44*	*07/22/24 21:17*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7		mg/Kg		07/22/24 12:31	07/22/24 16:06	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		07/22/24 12:31	07/22/24 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 21:56	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-20 @ 1'

Date Collected: 07/16/24 11:47
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-20

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 08:44	07/22/24 21:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*35 - 166*	*07/19/24 08:44*	*07/22/24 21:40*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 08:44	07/22/24 21:40	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 21:40	1
Toluene	ND		0.048		mg/Kg		07/19/24 08:44	07/22/24 21:40	1
Xylenes, Total	ND		0.095		mg/Kg		07/19/24 08:44	07/22/24 21:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 08:44*	*07/22/24 21:40*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		07/22/24 12:31	07/22/24 16:17	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		07/22/24 12:31	07/22/24 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 13:36	07/22/24 22:11	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-01 @ 0-1'

Date Collected: 07/16/24 11:59
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-21

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 12:18	07/23/24 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*35 - 166*	*07/19/24 12:18*	*07/23/24 00:01*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 12:18	07/23/24 00:01	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 12:18	07/23/24 00:01	1
Toluene	ND		0.049		mg/Kg		07/19/24 12:18	07/23/24 00:01	1
Xylenes, Total	ND		0.097		mg/Kg		07/19/24 12:18	07/23/24 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*48 - 145*	*07/19/24 12:18*	*07/23/24 00:01*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**32**		9.7		mg/Kg		07/22/24 12:31	07/22/24 16:28	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		07/22/24 12:31	07/22/24 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 17:24	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-02 @ 0-1'

Date Collected: 07/16/24 12:09
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-22

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7		mg/Kg		07/19/24 12:18	07/23/24 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*35 - 166*	*07/19/24 12:18*	*07/23/24 01:11*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 12:18	07/23/24 01:11	1
Ethylbenzene	ND		0.047		mg/Kg		07/19/24 12:18	07/23/24 01:11	1
Toluene	ND		0.047		mg/Kg		07/19/24 12:18	07/23/24 01:11	1
Xylenes, Total	ND		0.095		mg/Kg		07/19/24 12:18	07/23/24 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*48 - 145*	*07/19/24 12:18*	*07/23/24 01:11*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1		mg/Kg		07/22/24 12:31	07/22/24 16:39	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		07/22/24 12:31	07/22/24 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 17:36	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-03 @ 0-1'

Lab Sample ID: 885-8239-23

Date Collected: 07/16/24 12:18
Matrix: Solid
Date Received: 07/18/24 07:08

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 12:18	07/23/24 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*35 - 166*	*07/19/24 12:18*	*07/23/24 02:21*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 12:18	07/23/24 02:21	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 12:18	07/23/24 02:21	1
Toluene	ND		0.050		mg/Kg		07/19/24 12:18	07/23/24 02:21	1
Xylenes, Total	ND		0.10		mg/Kg		07/19/24 12:18	07/23/24 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*48 - 145*	*07/19/24 12:18*	*07/23/24 02:21*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.4		mg/Kg		07/22/24 12:31	07/22/24 16:50	1
Motor Oil Range Organics [C28-C40]	ND		42		mg/Kg		07/22/24 12:31	07/22/24 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 17:48	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-04 @ 0-1'

Date Collected: 07/16/24 12:31
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-24

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.6		mg/Kg		07/19/24 12:18	07/23/24 02:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*35 - 166*	*07/19/24 12:18*	*07/23/24 02:45*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		07/19/24 12:18	07/23/24 02:45	1
Ethylbenzene	ND		0.046		mg/Kg		07/19/24 12:18	07/23/24 02:45	1
Toluene	ND		0.046		mg/Kg		07/19/24 12:18	07/23/24 02:45	1
Xylenes, Total	ND		0.092		mg/Kg		07/19/24 12:18	07/23/24 02:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*07/19/24 12:18*	*07/23/24 02:45*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg		07/22/24 12:31	07/22/24 17:01	1
Motor Oil Range Organics [C28-C40]	ND		44		mg/Kg		07/22/24 12:31	07/22/24 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*	*07/22/24 12:31*	*07/22/24 17:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 18:01	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-05 @ 0-1'

Date Collected: 07/16/24 12:42
Date Received: 07/18/24 07:08

Lab Sample ID: 885-8239-25

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.8		mg/Kg		07/19/24 12:18	07/23/24 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*35 - 166*	*07/19/24 12:18*	*07/23/24 03:08*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 12:18	07/23/24 03:08	1
Ethylbenzene	ND		0.048		mg/Kg		07/19/24 12:18	07/23/24 03:08	1
Toluene	ND		0.048		mg/Kg		07/19/24 12:18	07/23/24 03:08	1
Xylenes, Total	ND		0.096		mg/Kg		07/19/24 12:18	07/23/24 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 12:18*	*07/23/24 03:08*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.3		mg/Kg		07/22/24 12:31	07/22/24 17:11	1
Motor Oil Range Organics [C28-C40]	ND		42		mg/Kg		07/22/24 12:31	07/22/24 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*	*07/22/24 12:31*	*07/22/24 17:11*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 18:13	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-06 @ 0-1'

Lab Sample ID: 885-8239-26

Date Collected: 07/16/24 12:49
Matrix: Solid
Date Received: 07/18/24 07:08

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.9		mg/Kg		07/19/24 12:18	07/23/24 03:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 12:18*	*07/23/24 03:31*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 12:18	07/23/24 03:31	1
Ethylbenzene	ND		0.049		mg/Kg		07/19/24 12:18	07/23/24 03:31	1
Toluene	ND		0.049		mg/Kg		07/19/24 12:18	07/23/24 03:31	1
Xylenes, Total	ND		0.098		mg/Kg		07/19/24 12:18	07/23/24 03:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*48 - 145*	*07/19/24 12:18*	*07/23/24 03:31*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5		mg/Kg		07/22/24 12:31	07/22/24 17:22	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		07/22/24 12:31	07/22/24 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*	*07/22/24 12:31*	*07/22/24 17:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 18:25	20

Client Sample Results

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CWS-07 @ 0-1'
Lab Sample ID: 885-8239-27
Date Collected: 07/16/24 12:57
Matrix: Solid
Date Received: 07/18/24 07:08

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.6		mg/Kg		07/19/24 12:18	07/23/24 03:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*35 - 166*	*07/19/24 12:18*	*07/23/24 03:55*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		07/19/24 12:18	07/23/24 03:55	1
Ethylbenzene	ND		0.046		mg/Kg		07/19/24 12:18	07/23/24 03:55	1
Toluene	ND		0.046		mg/Kg		07/19/24 12:18	07/23/24 03:55	1
Xylenes, Total	ND		0.093		mg/Kg		07/19/24 12:18	07/23/24 03:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*07/19/24 12:18*	*07/23/24 03:55*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg		07/22/24 12:31	07/22/24 16:17	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		07/22/24 12:31	07/22/24 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 18:38	20

Client Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CWS-08 @ 0-1'

Lab Sample ID: 885-8239-28
Matrix: Solid
Date Collected: 07/16/24 13:08
Date Received: 07/18/24 07:08

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		4.7		mg/Kg		07/19/24 12:18	07/23/24 04:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*35 - 166*	*07/19/24 12:18*	*07/23/24 04:18*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		07/19/24 12:18	07/23/24 04:18	1
Ethylbenzene	ND		0.047		mg/Kg		07/19/24 12:18	07/23/24 04:18	1
Toluene	ND		0.047		mg/Kg		07/19/24 12:18	07/23/24 04:18	1
Xylenes, Total	ND		0.094		mg/Kg		07/19/24 12:18	07/23/24 04:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*48 - 145*	*07/19/24 12:18*	*07/23/24 04:18*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2		mg/Kg		07/22/24 12:31	07/22/24 16:41	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		07/22/24 12:31	07/22/24 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*	*07/22/24 12:31*	*07/22/24 16:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		07/22/24 14:36	07/22/24 18:50	20

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-8747/1-A
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8747

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 08:44	07/22/24 11:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*35 - 166*	*07/19/24 08:44*	*07/22/24 11:54*	*1*

Lab Sample ID: LCS 885-8747/2-A
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8747

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			25.0	21.1		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*202*	*S1+*	*35 - 166*

Lab Sample ID: 885-8239-1 MS
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: CS24-01 @ 1'
Prep Type: Total/NA
Prep Batch: 8747

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	ND		25.0	22.0		mg/Kg		88	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*	*S1+*	*35 - 166*

Lab Sample ID: 885-8239-1 MSD
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: CS24-01 @ 1'
Prep Type: Total/NA
Prep Batch: 8747

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	ND		24.9	22.4		mg/Kg		90	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*	*S1+*	*35 - 166*

Lab Sample ID: MB 885-8787/1-A
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8787

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	ND		5.0		mg/Kg		07/19/24 12:18	07/22/24 23:37	1

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8015M/D - Gasoline Range Organics (GRO) (GC) (Continued)

Lab Sample ID: MB 885-8787/1-A
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8787

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166	07/19/24 12:18	07/22/24 23:37	1

Lab Sample ID: LCS 885-8787/2-A
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8787

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			25.0	20.7		mg/Kg		83	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	200	S1+	35 - 166

Lab Sample ID: 885-8239-21 MS
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: CWS-01 @ 0-1'
Prep Type: Total/NA
Prep Batch: 8787

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	ND		24.3	21.2		mg/Kg		87	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	202	S1+	35 - 166

Lab Sample ID: 885-8239-21 MSD
Matrix: Solid
Analysis Batch: 8964

Client Sample ID: CWS-01 @ 0-1'
Prep Type: Total/NA
Prep Batch: 8787

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	ND		24.3	21.8		mg/Kg		90	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	202	S1+	35 - 166

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-8747/1-A
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8747

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 08:44	07/22/24 11:54	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 11:54	1
Toluene	ND		0.050		mg/Kg		07/19/24 08:44	07/22/24 11:54	1
Xylenes, Total	ND		0.10		mg/Kg		07/19/24 08:44	07/22/24 11:54	1

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-8747/1-A
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8747

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		48 - 145	07/19/24 08:44	07/22/24 11:54	1

Lab Sample ID: LCS 885-8747/3-A
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8747

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.00	0.925		mg/Kg		92	70 - 130
Ethylbenzene	1.00	0.867		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	2.00	1.73		mg/Kg		86	70 - 130
o-Xylene	1.00	0.837		mg/Kg		84	70 - 130
Toluene	1.00	0.872		mg/Kg		87	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		48 - 145

Lab Sample ID: 885-8239-2 MS
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: CS24-02 @ 1'
Prep Type: Total/NA
Prep Batch: 8747

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND		0.999	0.907		mg/Kg		91	70 - 130
Ethylbenzene	ND		0.999	0.854		mg/Kg		85	70 - 130
m-Xylene & p-Xylene	ND		2.00	1.70		mg/Kg		84	70 - 130
o-Xylene	ND		0.999	0.828		mg/Kg		83	70 - 130
Toluene	ND		0.999	0.855		mg/Kg		84	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		48 - 145

Lab Sample ID: 885-8239-2 MSD
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: CS24-02 @ 1'
Prep Type: Total/NA
Prep Batch: 8747

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.995	0.927		mg/Kg		93	70 - 130	2	20
Ethylbenzene	ND		0.995	0.869		mg/Kg		87	70 - 130	2	20
m-Xylene & p-Xylene	ND		1.99	1.75		mg/Kg		87	70 - 130	3	20
o-Xylene	ND		0.995	0.854		mg/Kg		86	70 - 130	3	20
Toluene	ND		0.995	0.879		mg/Kg		87	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		48 - 145

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-8787/1-A
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8787

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		07/19/24 12:18	07/22/24 23:37	1
Ethylbenzene	ND		0.050		mg/Kg		07/19/24 12:18	07/22/24 23:37	1
Toluene	ND		0.050		mg/Kg		07/19/24 12:18	07/22/24 23:37	1
Xylenes, Total	ND		0.10		mg/Kg		07/19/24 12:18	07/22/24 23:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*	*07/19/24 12:18*	*07/22/24 23:37*	*1*

Lab Sample ID: LCS 885-8787/3-A
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8787

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.952		mg/Kg		95	70 - 130		
Ethylbenzene			1.00	0.901		mg/Kg		90	70 - 130		
m-Xylene & p-Xylene			2.00	1.79		mg/Kg		90	70 - 130		
o-Xylene			1.00	0.874		mg/Kg		87	70 - 130		
Toluene			1.00	0.907		mg/Kg		91	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*48 - 145*

Lab Sample ID: 885-8239-22 MS
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: CWS-02 @ 0-1'
Prep Type: Total/NA
Prep Batch: 8787

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		0.944	0.840		mg/Kg		89	70 - 130		
Ethylbenzene	ND		0.944	0.778		mg/Kg		82	70 - 130		
m-Xylene & p-Xylene	ND		1.89	1.59		mg/Kg		83	70 - 130		
o-Xylene	ND		0.944	0.763		mg/Kg		81	70 - 130		
Toluene	ND		0.944	0.780		mg/Kg		81	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*48 - 145*

Lab Sample ID: 885-8239-22 MSD
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: CWS-02 @ 0-1'
Prep Type: Total/NA
Prep Batch: 8787

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.943	0.812		mg/Kg		86	70 - 130	3	20
Ethylbenzene	ND		0.943	0.772		mg/Kg		82	70 - 130	1	20
m-Xylene & p-Xylene	ND		1.89	1.54		mg/Kg		80	70 - 130	3	20
o-Xylene	ND		0.943	0.757		mg/Kg		80	70 - 130	1	20
Toluene	ND		0.943	0.773		mg/Kg		81	70 - 130	1	20

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-8239-22 MSD
Matrix: Solid
Analysis Batch: 8965

Client Sample ID: CWS-02 @ 0-1'
Prep Type: Total/NA
Prep Batch: 8787

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*48 - 145*

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-8911/1-A
Matrix: Solid
Analysis Batch: 8879

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/22/24 11:58	07/22/24 12:42	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/22/24 11:58	07/22/24 12:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	*108*		*62 - 134*	*07/22/24 11:58*	*07/22/24 12:42*	*1*

Lab Sample ID: LCS 885-8911/2-A
Matrix: Solid
Analysis Batch: 8879

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	52.4		mg/Kg		105	60 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*

Lab Sample ID: 885-8239-13 MS
Matrix: Solid
Analysis Batch: 8879

Client Sample ID: CS24-13 @ 1'
Prep Type: Total/NA
Prep Batch: 8911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]	ND		44.7	47.3		mg/Kg		106	44 - 136		

Surrogate	MS %Recovery	MS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*106*		*62 - 134*

Lab Sample ID: 885-8239-13 MSD
Matrix: Solid
Analysis Batch: 8879

Client Sample ID: CS24-13 @ 1'
Prep Type: Total/NA
Prep Batch: 8911

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	ND		44.0	42.1		mg/Kg		96	44 - 136	12	32

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 8015M/D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 885-8915/1-A
Matrix: Solid
Analysis Batch: 8878

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8915

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		07/22/24 12:31	07/22/24 14:41	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		07/22/24 12:31	07/22/24 14:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*97*		*62 - 134*	*07/22/24 12:31*	*07/22/24 14:41*	*1*

Lab Sample ID: LCS 885-8915/2-A
Matrix: Solid
Analysis Batch: 8878

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8915

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	55.2		mg/Kg		110	60 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-8927/1-A
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8927

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5		mg/Kg		07/22/24 13:36	07/22/24 14:52	1

Lab Sample ID: LCS 885-8927/2-A
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8927

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			15.0	14.6		mg/Kg		97	90 - 110		

Lab Sample ID: 885-8239-1 MS
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: CS24-01 @ 1'
Prep Type: Total/NA
Prep Batch: 8927

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	ND		30.3	ND		mg/Kg		NC	50 - 150		

Lab Sample ID: 885-8239-1 MSD
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: CS24-01 @ 1'
Prep Type: Total/NA
Prep Batch: 8927

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND		30.2	ND		mg/Kg		NC	50 - 150	NC	20

QC Sample Results

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 885-8239-2 MS
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: CS24-02 @ 1'
Prep Type: Total/NA
Prep Batch: 8927

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	ND		30.1	ND		mg/Kg		NC	50 - 150		

Lab Sample ID: 885-8239-2 MSD
Matrix: Solid
Analysis Batch: 8951

Client Sample ID: CS24-02 @ 1'
Prep Type: Total/NA
Prep Batch: 8927

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND		29.8	ND		mg/Kg		NC	50 - 150	NC	20

Lab Sample ID: MB 885-8930/1-A
Matrix: Solid
Analysis Batch: 8949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8930

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5		mg/Kg		07/22/24 14:36	07/22/24 16:59	1

Lab Sample ID: LCS 885-8930/2-A
Matrix: Solid
Analysis Batch: 8949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8930

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			15.0	14.1		mg/Kg		94	90 - 110		

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

GC VOA

Prep Batch: 8747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	5030C	
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	5030C	
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	5030C	
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	5030C	
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	5030C	
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	5030C	
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	5030C	
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	5030C	
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	5030C	
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	5030C	
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	5030C	
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	5030C	
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	5030C	
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	5030C	
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	5030C	
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	5030C	
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	5030C	
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	5030C	
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	5030C	
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	5030C	
MB 885-8747/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-8747/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-8747/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-8239-1 MS	CS24-01 @ 1'	Total/NA	Solid	5030C	
885-8239-1 MSD	CS24-01 @ 1'	Total/NA	Solid	5030C	
885-8239-2 MS	CS24-02 @ 1'	Total/NA	Solid	5030C	
885-8239-2 MSD	CS24-02 @ 1'	Total/NA	Solid	5030C	

Prep Batch: 8787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	5030C	
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	5030C	
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	5030C	
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	5030C	
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	5030C	
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	5030C	
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	5030C	
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	5030C	
MB 885-8787/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-8787/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-8787/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-8239-21 MS	CWS-01 @ 0-1'	Total/NA	Solid	5030C	
885-8239-21 MSD	CWS-01 @ 0-1'	Total/NA	Solid	5030C	
885-8239-22 MS	CWS-02 @ 0-1'	Total/NA	Solid	5030C	
885-8239-22 MSD	CWS-02 @ 0-1'	Total/NA	Solid	5030C	

Analysis Batch: 8964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	8015M/D	8747

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

GC VOA (Continued)

Analysis Batch: 8964 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	8015M/D	8787
MB 885-8747/1-A	Method Blank	Total/NA	Solid	8015M/D	8747
MB 885-8787/1-A	Method Blank	Total/NA	Solid	8015M/D	8787
LCS 885-8747/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8747
LCS 885-8787/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8787
885-8239-1 MS	CS24-01 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-1 MSD	CS24-01 @ 1'	Total/NA	Solid	8015M/D	8747
885-8239-21 MS	CWS-01 @ 0-1'	Total/NA	Solid	8015M/D	8787
885-8239-21 MSD	CWS-01 @ 0-1'	Total/NA	Solid	8015M/D	8787

Analysis Batch: 8965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	8021B	8747
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	8021B	8747
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	8021B	8747
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	8021B	8747
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	8021B	8747
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	8021B	8747
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	8021B	8747
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	8021B	8747
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	8021B	8747
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	8021B	8747
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	8021B	8747
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	8021B	8747
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	8021B	8747
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	8021B	8747
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	8021B	8747

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

GC VOA (Continued)

Analysis Batch: 8965 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	8021B	8747
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	8021B	8747
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	8021B	8747
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	8021B	8747
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	8021B	8747
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	8021B	8787
MB 885-8747/1-A	Method Blank	Total/NA	Solid	8021B	8747
MB 885-8787/1-A	Method Blank	Total/NA	Solid	8021B	8787
LCS 885-8747/3-A	Lab Control Sample	Total/NA	Solid	8021B	8747
LCS 885-8787/3-A	Lab Control Sample	Total/NA	Solid	8021B	8787
885-8239-2 MS	CS24-02 @ 1'	Total/NA	Solid	8021B	8747
885-8239-2 MSD	CS24-02 @ 1'	Total/NA	Solid	8021B	8747
885-8239-22 MS	CWS-02 @ 0-1'	Total/NA	Solid	8021B	8787
885-8239-22 MSD	CWS-02 @ 0-1'	Total/NA	Solid	8021B	8787

GC Semi VOA

Analysis Batch: 8875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	8015M/D	8915

Analysis Batch: 8878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	8015M/D	8915
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	8015M/D	8915
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	8015M/D	8915
MB 885-8915/1-A	Method Blank	Total/NA	Solid	8015M/D	8915
LCS 885-8915/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8915

Analysis Batch: 8879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	8015M/D	8911

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

GC Semi VOA (Continued)

Analysis Batch: 8879 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	8015M/D	8911
MB 885-8911/1-A	Method Blank	Total/NA	Solid	8015M/D	8911
LCS 885-8911/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8911
885-8239-13 MS	CS24-13 @ 1'	Total/NA	Solid	8015M/D	8911
885-8239-13 MSD	CS24-13 @ 1'	Total/NA	Solid	8015M/D	8911

Prep Batch: 8911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	SHAKE	
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	SHAKE	
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	SHAKE	
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	SHAKE	
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	SHAKE	
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	SHAKE	
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	SHAKE	
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	SHAKE	
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	SHAKE	
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	SHAKE	
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	SHAKE	
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	SHAKE	
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	SHAKE	
MB 885-8911/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-8911/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-8239-13 MS	CS24-13 @ 1'	Total/NA	Solid	SHAKE	
885-8239-13 MSD	CS24-13 @ 1'	Total/NA	Solid	SHAKE	

Prep Batch: 8915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	SHAKE	
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	SHAKE	
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	SHAKE	
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	SHAKE	
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	SHAKE	
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	SHAKE	
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	SHAKE	
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	SHAKE	

QC Association Summary

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

GC Semi VOA (Continued)

Prep Batch: 8915 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	SHAKE	
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	SHAKE	
MB 885-8915/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-8915/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

HPLC/IC

Prep Batch: 8927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	300_Prep	
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	300_Prep	
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	300_Prep	
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	300_Prep	
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	300_Prep	
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	300_Prep	
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	300_Prep	
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	300_Prep	
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	300_Prep	
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	300_Prep	
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	300_Prep	
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	300_Prep	
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	300_Prep	
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	300_Prep	
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	300_Prep	
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	300_Prep	
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	300_Prep	
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	300_Prep	
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	300_Prep	
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	300_Prep	
MB 885-8927/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-8927/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	
885-8239-1 MS	CS24-01 @ 1'	Total/NA	Solid	300_Prep	
885-8239-1 MSD	CS24-01 @ 1'	Total/NA	Solid	300_Prep	
885-8239-2 MS	CS24-02 @ 1'	Total/NA	Solid	300_Prep	
885-8239-2 MSD	CS24-02 @ 1'	Total/NA	Solid	300_Prep	

Prep Batch: 8930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	300_Prep	
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	300_Prep	
MB 885-8930/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-8930/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	

QC Association Summary

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

HPLC/IC

Analysis Batch: 8949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-21	CWS-01 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-22	CWS-02 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-23	CWS-03 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-24	CWS-04 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-25	CWS-05 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-26	CWS-06 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-27	CWS-07 @ 0-1'	Total/NA	Solid	300.0	8930
885-8239-28	CWS-08 @ 0-1'	Total/NA	Solid	300.0	8930
MB 885-8930/1-A	Method Blank	Total/NA	Solid	300.0	8930
LCS 885-8930/2-A	Lab Control Sample	Total/NA	Solid	300.0	8930

Analysis Batch: 8951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-8239-1	CS24-01 @ 1'	Total/NA	Solid	300.0	8927
885-8239-2	CS24-02 @ 1'	Total/NA	Solid	300.0	8927
885-8239-3	CS24-03 @ 1'	Total/NA	Solid	300.0	8927
885-8239-4	CS24-04 @ 1'	Total/NA	Solid	300.0	8927
885-8239-5	CS24-05 @ 1'	Total/NA	Solid	300.0	8927
885-8239-6	CS24-06 @ 1'	Total/NA	Solid	300.0	8927
885-8239-7	CS24-07 @ 1'	Total/NA	Solid	300.0	8927
885-8239-8	CS24-08 @ 1'	Total/NA	Solid	300.0	8927
885-8239-9	CS24-09 @ 1'	Total/NA	Solid	300.0	8927
885-8239-10	CS24-10 @ 1'	Total/NA	Solid	300.0	8927
885-8239-11	CS24-11 @ 1'	Total/NA	Solid	300.0	8927
885-8239-12	CS24-12 @ 1'	Total/NA	Solid	300.0	8927
885-8239-13	CS24-13 @ 1'	Total/NA	Solid	300.0	8927
885-8239-14	CS24-14 @ 1'	Total/NA	Solid	300.0	8927
885-8239-15	CS24-15 @ 1'	Total/NA	Solid	300.0	8927
885-8239-16	CS24-16 @ 1'	Total/NA	Solid	300.0	8927
885-8239-17	CS24-17 @ 1'	Total/NA	Solid	300.0	8927
885-8239-18	CS24-18 @ 1'	Total/NA	Solid	300.0	8927
885-8239-19	CS24-19 @ 1'	Total/NA	Solid	300.0	8927
885-8239-20	CS24-20 @ 1'	Total/NA	Solid	300.0	8927
MB 885-8927/1-A	Method Blank	Total/NA	Solid	300.0	8927
LCS 885-8927/2-A	Lab Control Sample	Total/NA	Solid	300.0	8927
885-8239-1 MS	CS24-01 @ 1'	Total/NA	Solid	300.0	8927
885-8239-1 MSD	CS24-01 @ 1'	Total/NA	Solid	300.0	8927
885-8239-2 MS	CS24-02 @ 1'	Total/NA	Solid	300.0	8927
885-8239-2 MSD	CS24-02 @ 1'	Total/NA	Solid	300.0	8927

Lab Chronicle

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-01 @ 1'

Lab Sample ID: 885-8239-1
Matrix: Solid
Date Collected: 07/16/24 10:03
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 12:17
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 12:17
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 13:08
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 15:22

Client Sample ID: CS24-02 @ 1'

Lab Sample ID: 885-8239-2
Matrix: Solid
Date Collected: 07/16/24 10:09
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 13:28
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 13:28
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 13:21
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 16:08

Client Sample ID: CS24-03 @ 1'

Lab Sample ID: 885-8239-3
Matrix: Solid
Date Collected: 07/16/24 10:13
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 14:38
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 14:38
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 13:34
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 16:53

Client Sample ID: CS24-04 @ 1'

Lab Sample ID: 885-8239-4
Matrix: Solid
Date Collected: 07/16/24 10:17
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 15:02

Lab Chronicle

Client: Vertex
Project/Site: Cotton Draw Unit 1-12

Job ID: 885-8239-1

Client Sample ID: CS24-04 @ 1'

Lab Sample ID: 885-8239-4
Matrix: Solid
Date Collected: 07/16/24 10:17
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 15:02
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 13:47
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 17:08

Client Sample ID: CS24-05 @ 1'

Lab Sample ID: 885-8239-5
Matrix: Solid
Date Collected: 07/16/24 10:21
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 15:25
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 15:25
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 14:00
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 17:54

Client Sample ID: CS24-06 @ 1'

Lab Sample ID: 885-8239-6
Matrix: Solid
Date Collected: 07/16/24 10:24
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 15:49
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 15:49
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 14:13
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 18:09

Client Sample ID: CS24-07 @ 1'

Lab Sample ID: 885-8239-7
Matrix: Solid
Date Collected: 07/16/24 10:32
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 16:12
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 16:12

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CS24-07 @ 1'
Lab Sample ID: 885-8239-7
Date Collected: 07/16/24 10:32
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 14:26
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 18:24

Client Sample ID: CS24-08 @ 1'
Lab Sample ID: 885-8239-8
Date Collected: 07/16/24 10:38
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 16:36
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 16:36
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 14:39
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 18:39

Client Sample ID: CS24-09 @ 1'
Lab Sample ID: 885-8239-9
Date Collected: 07/16/24 10:49
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 16:59
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 16:59
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 14:52
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 18:54

Client Sample ID: CS24-10 @ 1'
Lab Sample ID: 885-8239-10
Date Collected: 07/16/24 10:54
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 17:23
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 17:23
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 15:05

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CS24-10 @ 1'
Lab Sample ID: 885-8239-10
Date Collected: 07/16/24 10:54
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 19:09

Client Sample ID: CS24-11 @ 1'
Lab Sample ID: 885-8239-11
Date Collected: 07/16/24 11:05
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 18:10
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 18:10
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 15:19
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 19:25

Client Sample ID: CS24-12 @ 1'
Lab Sample ID: 885-8239-12
Date Collected: 07/16/24 11:05
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 18:33
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 18:33
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 15:32
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 19:40

Client Sample ID: CS24-13 @ 1'
Lab Sample ID: 885-8239-13
Date Collected: 07/16/24 11:10
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 18:57
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 18:57
Total/NA	Prep	SHAKE			8911	KR	EET ALB	07/22/24 11:58
Total/NA	Analysis	8015M/D		1	8879	DH	EET ALB	07/22/24 15:45
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 19:55

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CS24-14 @ 1'
Lab Sample ID: 885-8239-14
Date Collected: 07/16/24 11:15
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 19:20
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 19:20
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8878	DH	EET ALB	07/22/24 15:29
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 20:10

Client Sample ID: CS24-15 @ 1'
Lab Sample ID: 885-8239-15
Date Collected: 07/16/24 11:18
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 19:44
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 19:44
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8878	DH	EET ALB	07/22/24 15:53
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 20:55

Client Sample ID: CS24-16 @ 1'
Lab Sample ID: 885-8239-16
Date Collected: 07/16/24 11:24
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 20:07
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 20:07
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 15:33
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 21:11

Client Sample ID: CS24-17 @ 1'
Lab Sample ID: 885-8239-17
Date Collected: 07/16/24 11:29
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 20:30

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CS24-17 @ 1'
Lab Sample ID: 885-8239-17
Date Collected: 07/16/24 11:29
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 20:30
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 15:44
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 21:26

Client Sample ID: CS24-18 @ 1'
Lab Sample ID: 885-8239-18
Date Collected: 07/16/24 11:34
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 20:54
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 20:54
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 15:55
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 21:41

Client Sample ID: CS24-19 @ 1'
Lab Sample ID: 885-8239-19
Date Collected: 07/16/24 11:39
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 21:17
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 21:17
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 16:06
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 21:56

Client Sample ID: CS24-20 @ 1'
Lab Sample ID: 885-8239-20
Date Collected: 07/16/24 11:47
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/22/24 21:40
Total/NA	Prep	5030C			8747	AT	EET ALB	07/19/24 08:44
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/22/24 21:40

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CS24-20 @ 1'
Lab Sample ID: 885-8239-20
Date Collected: 07/16/24 11:47
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 16:17
Total/NA	Prep	300_Prep			8927	MA	EET ALB	07/22/24 13:36
Total/NA	Analysis	300.0		20	8951	EH	EET ALB	07/22/24 22:11

Client Sample ID: CWS-01 @ 0-1'
Lab Sample ID: 885-8239-21
Date Collected: 07/16/24 11:59
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 00:01
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 00:01
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 16:28
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 17:24

Client Sample ID: CWS-02 @ 0-1'
Lab Sample ID: 885-8239-22
Date Collected: 07/16/24 12:09
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 01:11
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 01:11
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 16:39
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 17:36

Client Sample ID: CWS-03 @ 0-1'
Lab Sample ID: 885-8239-23
Date Collected: 07/16/24 12:18
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 02:21
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 02:21
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 16:50

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CWS-03 @ 0-1'
Lab Sample ID: 885-8239-23
Date Collected: 07/16/24 12:18
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 17:48

Client Sample ID: CWS-04 @ 0-1'
Lab Sample ID: 885-8239-24
Date Collected: 07/16/24 12:31
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 02:45
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 02:45
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 17:01
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 18:01

Client Sample ID: CWS-05 @ 0-1'
Lab Sample ID: 885-8239-25
Date Collected: 07/16/24 12:42
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 03:08
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 03:08
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 17:11
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 18:13

Client Sample ID: CWS-06 @ 0-1'
Lab Sample ID: 885-8239-26
Date Collected: 07/16/24 12:49
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 03:31
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 03:31
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8875	KR	EET ALB	07/22/24 17:22
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 18:25

Lab Chronicle

Client: Vertex
Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Client Sample ID: CWS-07 @ 0-1'
Lab Sample ID: 885-8239-27
Date Collected: 07/16/24 12:57
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 03:55
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 03:55
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8878	DH	EET ALB	07/22/24 16:17
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 18:38

Client Sample ID: CWS-08 @ 0-1'
Lab Sample ID: 885-8239-28
Date Collected: 07/16/24 13:08
Matrix: Solid
Date Received: 07/18/24 07:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8015M/D		1	8964	JP	EET ALB	07/23/24 04:18
Total/NA	Prep	5030C			8787	JP	EET ALB	07/19/24 12:18
Total/NA	Analysis	8021B		1	8965	JP	EET ALB	07/23/24 04:18
Total/NA	Prep	SHAKE			8915	DH	EET ALB	07/22/24 12:31
Total/NA	Analysis	8015M/D		1	8878	DH	EET ALB	07/22/24 16:41
Total/NA	Prep	300_Prep			8930	KB	EET ALB	07/22/24 14:36
Total/NA	Analysis	300.0		20	8949	RC	EET ALB	07/22/24 18:50

Laboratory References:
EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Vertex Job ID: 885-8239-1
Project/Site: Cotton Draw Unit 1-12

Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015M/D	5030C	Solid	Gasoline Range Organics (GRO)-C6-C10
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Released to Imaging: 12/11/2024 3:19:34 PM

Received by OCD: 11/20/2024 10:11:07 AM

Chain-of-Custody Record

1 of 3

HALL ENVIRONMENTAL ANALYSIS LABO

www.hallenvironmental.com

885-8239 COC

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107 8239

Client: **Vertex(Bill to Devon)**

Mailing Address: 205 E Bender Blvd Hobbs, NM

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: **Cotton Draw Unit 1-12**

Project #: **23E-02423**

Project Manager: **Chad Hensle Chensley@vertexresource.com**

Rplogger@vertexresource.com

Sampler: Riley Plogger

On Ice: ☑ Yes ☐ No Yes

# of Coolers: 1

Cooler Temp(including CF): 2.1-0.1=2.0

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
7.16.24	10:03	Soil	CS24-01 @ 1'	1, 4oz jar	Ice	1	X	X					X			
7.16.24	10:09		CS24-02 @ 1'			2										
7.16.24	10:13		CS24-03 @ 1'			3										
7.16.24	10:17		CS24-04 @ 1'			4										
7.16.24	10:21		CS24-05 @ 1'			5										
7.16.24	10:24		CS24-06 @ 1'			6										
7.16.24	10:32		CS24-07 @ 1'			7										
7.16.24	10:38		CS24-08 @ 1'			8										
7.16.24	10:49		CS24-09 @ 1'			9										
7.16.24	10:54		CS24-10 @ 1'			10										
7.16.24	10:59		~~CS24-10 @ 1'~~ ac			—										
7.16.24	11:05		CS24-11 @ 1'			11										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					7/17/24	845
Date: 7/17/24	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 7/18/24	Time 7:08

Remarks: WO# 2RP-5637
Dale Woodall

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.

Released to Imaging: 12/11/2024 3:19:34 PM
Received by OCD: 11/20/2024 10:11:07 AM

Chain-of-Custody Record

Client: **Vertex (Bill to Devon)**

Mailing Address: 205 E Bender Blvd Hobbs, NM

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: **Cotton Draw Unit 1-12**

Project #: **23E-02423**

Project Manager: Chad Hensley
Chensley@vertexresource.com
Rplogger@vertexresource.com

Sampler: Riley Plogger
On Ice: ☑ Yes ☐ No Yogi
# of Coolers: 1
Cooler Temp(including CF): 2.1-0.1=2.0 °

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

3239

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
7.16.24	11:05	Soil	CS24-12 @ 1'	1, 4oz jar	Ice	12	X	X					X			
	11:10		CS24-13 @ 1'			13										
	11:15		CS24-14 @ 1'			14										
	11:18		CS24-15 @ 1'			15										
	11:24		CS24-16 @ 1'			16										
	11:29		CS24-17 @ 1'			17										
	11:34		CS24-18 @ 1'			18										
	11:39		CS24-19 @ 1'			19										
	11:47		CS24-20 @ 1'			20										
	11:59		CWS-01 @ 0-1'			21										
	12:09		CWS-02 @ 0-1'			22										
	12:18		CWS-03 @ 0-1'			23										

Remarks: #21 – 23 Sample Name missing 24, but ok to send out.

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					7/17/24	945
7/17/24	1900			courier	7/18/24	7:08

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.

Released to Imaging: 12/11/2024 3:19:34 PM
Received by OCD: 11/20/2024 10:11:07 AM

Chain-of-Custody Record

Client: Vertex (Bill to Devon)

Mailing Address: 205 E Bender BLVd Hobbs, NM

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: Cottondraw Unit 1-12

Project #: 23E-02423

Project Manager: Chad Hensley
Chensley@vertexresource.com
Rplogger@vertexresource.com

Sampler:

On Ice: ☑ Yes ☐ No 40g

# of Coolers: 1

Cooler Temp(including CF): 2.1-0.1=2.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107 8839

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
7.16.24	12:31	Soil	CWS-04 @ 0-1'	1, 4oz jar	ICE	24	X	X					X			
	12:42		CWS-05 @ 0-1'			25										
	12:49		CWS-06 @ 0-1'			26										
	12:57		CWS-07 @ 0-1'			27										
	1:08		CWS-08 @ 0-1'			28										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[illegible]		7/17/24	845
7/17/24	1900	[illegible]		courier	7/18/24	7:08

Remarks: WO# 2RP-5637
Dale Woodall

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.

Login Sample Receipt Checklist

Client: Vertex Job Number: 885-8239-1

Login Number: 8239 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: McQuiston, Steven

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Report to:

Chad Hensley



5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com

envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Vertex Resource Services Inc.

Project Name:	Cottondraw 1-12 CTB
Work Order:	E410389
Job Number:	01058-0007
Received:	11/1/2024

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
11/7/24

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 11/7/24

Chad Hensley
3101 Boyd Drive
Carlsbad, NM 88220

Project Name: Cottondraw 1-12 CTB
Workorder: E410389
Date Received: 11/1/2024 7:00:00AM

Chad Hensley,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 11/1/2024 7:00:00AM, under the Project Name: Cottondraw 1-12 CTB.

The analytical test results summarized in this report with the Project Name: Cottondraw 1-12 CTB apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

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Table of Contents

Title Page 1

Cover Page 2

Table of Contents 3

Sample Summary 4

Sample Data 5

CS24-21 @ 1’ 5

CWS24-08 @ 0-1’ 6

QC Summary Data 7

QC - Volatile Organics by EPA 8021B 7

QC - Nonhalogenated Organics by EPA 8015D - GRO 8

QC - Nonhalogenated Organics by EPA 8015D - DRO/ORO 9

QC - Anions by EPA 300.0/9056A 10

Definitions and Notes 11

Chain of Custody etc. 12

Sample Summary

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	**Reported:**
3101 Boyd Drive	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/07/24 14:37

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
CS24-21 @ 1'	E410389-01A	Soil	10/30/24	11/01/24	Glass Jar, 2 oz.
CWS24-08 @ 0-1'	E410389-02A	Soil	10/30/24	11/01/24	Glass Jar, 2 oz.

Sample Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	
3101 Boyd Drive	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

CS24-21 @ 1'

E410389-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: SL			Batch: 2444143
Benzene	ND	0.0250	1	11/01/24	11/03/24	
Ethylbenzene	ND	0.0250	1	11/01/24	11/03/24	
Toluene	ND	0.0250	1	11/01/24	11/03/24	
o-Xylene	ND	0.0250	1	11/01/24	11/03/24	
p,m-Xylene	ND	0.0500	1	11/01/24	11/03/24	
Total Xylenes	ND	0.0250	1	11/01/24	11/03/24	
Surrogate: 4-Bromochlorobenzene-PID		*90.0 %*	*70-130*	*11/01/24*	*11/03/24*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: SL			Batch: 2444143
Gasoline Range Organics (C6-C10)	ND	20.0	1	11/01/24	11/03/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*92.4 %*	*70-130*	*11/01/24*	*11/03/24*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: NV			Batch: 2444147
Diesel Range Organics (C10-C28)	ND	25.0	1	11/01/24	11/04/24	
Oil Range Organics (C28-C36)	ND	50.0	1	11/01/24	11/04/24	
Surrogate: n-Nonane		*103 %*	*50-200*	*11/01/24*	*11/04/24*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2445023
Chloride	ND	20.0	1	11/04/24	11/04/24	

Sample Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	
3101 Boyd Drive	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

CWS24-08 @ 0-1'

E410389-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analyst: SL			Batch: 2444143
Benzene	ND	0.0250	1	11/01/24	11/03/24	
Ethylbenzene	ND	0.0250	1	11/01/24	11/03/24	
Toluene	ND	0.0250	1	11/01/24	11/03/24	
o-Xylene	ND	0.0250	1	11/01/24	11/03/24	
p,m-Xylene	ND	0.0500	1	11/01/24	11/03/24	
Total Xylenes	ND	0.0250	1	11/01/24	11/03/24	
Surrogate: 4-Bromochlorobenzene-PID		*90.5 %*	*70-130*	*11/01/24*	*11/03/24*	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: SL			Batch: 2444143
Gasoline Range Organics (C6-C10)	ND	20.0	1	11/01/24	11/03/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		*93.0 %*	*70-130*	*11/01/24*	*11/03/24*	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: NV			Batch: 2444147
Diesel Range Organics (C10-C28)	ND	25.0	1	11/01/24	11/04/24	
Oil Range Organics (C28-C36)	ND	50.0	1	11/01/24	11/04/24	
Surrogate: n-Nonane		*99.4 %*	*50-200*	*11/01/24*	*11/04/24*	
Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: IY			Batch: 2445023
Chloride	**48.6**	20.0	1	11/04/24	11/04/24	

QC Summary Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	**Reported:**
3101 Boyd Drive	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

Volatile Organics by EPA 8021B

Analyst: SL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2444143-BLK1)									Prepared: 11/01/24 Analyzed: 11/01/24
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	*7.05*		*8.00*		*88.1*	*70-130*			
LCS (2444143-BS1)									Prepared: 11/01/24 Analyzed: 11/01/24
Benzene	5.25	0.0250	5.00		105	70-130			
Ethylbenzene	5.13	0.0250	5.00		103	70-130			
Toluene	5.22	0.0250	5.00		104	70-130			
o-Xylene	5.12	0.0250	5.00		102	70-130			
p,m-Xylene	10.4	0.0500	10.0		104	70-130			
Total Xylenes	15.5	0.0250	15.0		104	70-130			
Surrogate: 4-Bromochlorobenzene-PID	*7.12*		*8.00*		*89.0*	*70-130*			
LCS Dup (2444143-BSD1)									Prepared: 11/01/24 Analyzed: 11/01/24
Benzene	5.26	0.0250	5.00		105	70-130	0.147	20	
Ethylbenzene	5.15	0.0250	5.00		103	70-130	0.410	20	
Toluene	5.24	0.0250	5.00		105	70-130	0.281	20	
o-Xylene	5.14	0.0250	5.00		103	70-130	0.298	20	
p,m-Xylene	10.5	0.0500	10.0		105	70-130	0.367	20	
Total Xylenes	15.6	0.0250	15.0		104	70-130	0.345	20	
Surrogate: 4-Bromochlorobenzene-PID	*7.13*		*8.00*		*89.1*	*70-130*			

QC Summary Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	**Reported:**
3101 Boyd Drive	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: SL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2444143-BLK1)									Prepared: 11/01/24 Analyzed: 11/01/24
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.05*		*8.00*		*88.2*	*70-130*			
LCS (2444143-BS2)									Prepared: 11/01/24 Analyzed: 11/01/24
Gasoline Range Organics (C6-C10)	42.1	20.0	50.0		84.1	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.31*		*8.00*		*91.4*	*70-130*			
LCS Dup (2444143-BSD2)									Prepared: 11/01/24 Analyzed: 11/01/24
Gasoline Range Organics (C6-C10)	41.8	20.0	50.0		83.6	70-130	0.641	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	*7.23*		*8.00*		*90.3*	*70-130*			

QC Summary Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	**Reported:**
3101 Boyd Drive	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: NV

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2444147-BLK1)									Prepared: 11/01/24 Analyzed: 11/04/24
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	*51.6*		*50.0*		*103*	*50-200*			
LCS (2444147-BS1)									Prepared: 11/01/24 Analyzed: 11/04/24
Diesel Range Organics (C10-C28)	265	25.0	250		106	38-132			
Surrogate: n-Nonane	*50.5*		*50.0*		*101*	*50-200*			
LCS Dup (2444147-BSD1)									Prepared: 11/01/24 Analyzed: 11/04/24
Diesel Range Organics (C10-C28)	264	25.0	250		106	38-132	0.262	20	
Surrogate: n-Nonane	*53.5*		*50.0*		*107*	*50-200*			

QC Summary Data

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	**Reported:**
3101 Boyd Drive	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/7/2024 2:37:54PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	
Blank (2445023-BLK1)									Prepared: 11/04/24 Analyzed: 11/04/24
Chloride	ND	20.0							
LCS (2445023-BS1)									Prepared: 11/04/24 Analyzed: 11/04/24
Chloride	259	20.0	250		104	90-110			
LCS Dup (2445023-BSD1)									Prepared: 11/04/24 Analyzed: 11/04/24
Chloride	255	20.0	250		102	90-110	1.53	20	

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Definitions and Notes

Vertex Resource Services Inc.	Project Name:	Cottondraw 1-12 CTB	
3101 Boyd Drive	Project Number:	01058-0007	**Reported:**
Carlsbad NM, 88220	Project Manager:	Chad Hensley	11/07/24 14:37

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite
DNR	Did not react with the addition of acid or base.

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Released to Imaging: 12/11/2024 3:19:34 PM
Received by OCD: 11/20/2024 10:11:07 AM

Chain of Custody

Client Information	Invoice Information	Lab Use Only	TAT	State
Client: Vertex (bill to Devon)	any: Devon Energy	Lab WO# E410389	1D 2D 3D Std	NM CO UT TX
Project Name: Cottondraw 1-12 CTB	ss: 205 E Bender	Job Number 01058·0007		x
Project Manager: Chad Hensley	te, Zip: Hobbs, NM, 88240		X	
Address:	Phone:			
City, State, Zip:	Email: Jim.Raley@dvn.com			
Phone: 575-200-6167	Miscellaneous:			
Email: Rarnold@vertexresource.com, Rplogger@ver				

Sample Information

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Field Filter	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Cation/Anion Pkg			Remarks
10:00	10/30/2024	Soil	1	CS24-21 @ 1'		1	X	x	x		x							
10:20	10/30/2024	Soil	1	CWS24-08 @ 0-1'		2	X	x	x		x							

Analysis and Method

EPA Program

SDWA	CWA	RCRA

Compliance Y or N

PWSID #

Additional Instructions: WO 21420844 Jim Raley

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: _____

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Riley Plogger	10/31/24	17:30	Michelle Gonzales	10.31.24	1130
Michelle Gonzales	10-31-24	1615		10.31.24	1700
	10.31.24	2400	Caleb Mar	11.1.24	7:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Lab Use Only

Received on ice: (Y) N

T1 _____ T2 _____ T3 _____

AVG Temp °C 4

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____

Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, **v** - VOA

Note: Samples are discarded 14 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

Envirotech Analytical Laboratory

Printed: 11/1/2024 9:10:09AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.
If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Vertex Resource Services Inc.	Date Received:	11/01/24 07:00	Work Order ID:	E410389
Phone:	(575) 748-0176	Date Logged In:	10/31/24 15:06	Logged In By:	Noe Soto
Email:	chensley@vertexresources.com	Due Date:	11/07/24 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC?	Yes	
2. Does the number of samples per sampling site location match the COC	Yes	
3. Were samples dropped off by client or carrier?	Yes	Carrier: Courier
4. Was the COC complete, i.e., signatures, dates/times, requested analyses?	No	
5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this disucssion.	Yes	

Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT?	Yes	

Sample Cooler

7. Was a sample cooler received?	Yes	
8. If yes, was cooler received in good condition?	Yes	
9. Was the sample(s) received intact, i.e., not broken?	Yes	
10. Were custody/security seals present?	No	
11. If yes, were custody/security seals intact?	NA	
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling	Yes	
13. If no visible ice, record the temperature. Actual sample temperature: 4°C		

Sample Container

14. Are aqueous VOC samples present?	No	
15. Are VOC samples collected in VOA Vials?	NA	
16. Is the head space less than 6-8 mm (pea sized or less)?	NA	
17. Was a trip blank (TB) included for VOC analyses?	NA	
18. Are non-VOC samples collected in the correct containers?	Yes	
19. Is the appropriate volume/weight or number of sample containers collected?	Yes	

Field Label

20. Were field sample labels filled out with the minimum information:		
Sample ID?	Yes	
Date/Time Collected?	Yes	
Collectors name?	No	

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved?	No	
22. Are sample(s) correctly preserved?	NA	
24. Is lab filteration required and/or requested for dissolved metals?	No	

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase?	No	
27. If yes, does the COC specify which phase(s) is to be analyzed?	NA	

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory?	No	
29. Was a subcontract laboratory specified by the client and if so who?	NA	Subcontract Lab: NA

Comments/Resolution

Sampled by name is missing on COC by client.

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date

envirotech Inc.

APPENDIX D – Depth to Groundwater Drilling

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
C04792 POD1	C4792	C 04792

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy Resources	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
205 E Bender Road #150	Hobbs	NM	88240

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	8	23.7768	N
	LONGITUDE	-103	43	51.5346	W

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

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

2. DRILLING & CASING INFORMATION

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

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
2-6-24	2-6-24	55'	55'	Dry hole

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

STATIC WATER LEVEL IN COMPLETED WELL (FT): 0

DATE STATIC MEASURED: 2-10-24

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

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

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	45'	6"	2" PVC SCH 40	Thread	2"	SCH40	N/A
45'	55'	6"	2" PVC CH40	Thread	2"	SCH40	.02

3. ANNULAR MATERIAL

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

FOR OSE INTERNAL USE

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

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10'	10'	Red topsoil wih small to medium rock	Y ✓ N	
10'	20'	10'	White caliche rock	Y ✓ N	
20'	40'	20'	Tan fine sand with caliche	Y ✓ N	
40'	55'	15'	Brown fine sand with small rock	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): Dry

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION:

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

6. SIGNATURE

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

Jason Maley — 2/21/24

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

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

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

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

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4792-POD1

Well owner: Devon Energy Resources Phone No.: 405-318-4697

Mailing address: 205 E. Bender Road #150

City: Hobbs State: NM Zip code: 88240

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Vision Resources

2) New Mexico Well Driller License No.: 1833 Expiration Date: 10-7-2025

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jason Maley

4) Date well plugging began: 2-10-24 Date well plugging concluded: 2-10-24

5) GPS Well Location: Latitude: 32 deg, 8 min, 23.7768 sec
Longitude: -103 deg, 43 min, 51.5346 scc, WGS 84

6) Depth of well confirmed at initiation of plugging as: 55" ft below ground level (bgl), by the following manner: Tape

7) Static water level measured at initiation of plugging: DRY ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 12-8-23

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0		77.50	77.50	Tremie pipe Open Hole	
	Wyoming Bentonite				
55'					

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Jason Maley, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

2/21/24
Date

Version: September 8, 2009
Page 2 of 2

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Santa Fe, NM 87505

QUESTIONS

Action 404349

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 404349
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAB1911927632**
Incident Name	**NAB1911927632 COTTON DRAW UNIT 1-12 CTB @ 30-015-43275**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-015-43275] COTTON DRAW UNIT #223H**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	COTTON DRAW UNIT 1-12 CTB
Date Release Discovered	09/04/2018
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Separator | Crude Oil | Released: 1 BBL | Recovered: 0 BBL | Lost: 1 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Separator | Produced Water | Released: 6 BBL | Recovered: 0 BBL | Lost: 6 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

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QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 11/20/2024

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QUESTIONS (continued)

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QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
Requesting a remediation plan approval with this submission		Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.		
Have the lateral and vertical extents of contamination been fully delineated		Yes
Was this release entirely contained within a lined containment area		No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)		
Chloride	(EPA 300.0 or SM4500 Cl B)	4200
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	8200
GRO+DRO	(EPA SW-846 Method 8015M)	5600
BTEX	(EPA SW-846 Method 8021B or 8260B)	0
Benzene	(EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.		
On what estimated date will the remediation commence		06/28/2024
On what date will (or did) the final sampling or liner inspection occur		10/30/2024
On what date will (or was) the remediation complete(d)		07/16/2024
What is the estimated surface area (in square feet) that will be reclaimed		0
What is the estimated volume (in cubic yards) that will be reclaimed		0
What is the estimated surface area (in square feet) that will be remediated		3301
What is the estimated volume (in cubic yards) that will be remediated		122
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.		
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.		

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QUESTIONS (continued)

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QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 11/20/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**396160**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**10/30/2024**
What was the (estimated) number of samples that were to be gathered	**1**
What was the sampling surface area in square feet	**200**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3301
What was the total volume (cubic yards) remediated	122
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	Impacted soils removed.

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 11/20/2024

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QUESTIONS (continued)

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QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 404349

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CONDITIONS

Created By	Condition	Condition Date
bhall	Remediation closure conditionally approved.	12/11/2024
bhall	The questions "What is the estimated surface area (in square feet) that will be reclaimed" and "What is the estimated volume (in cubic yards) that will be reclaimed" were both answered "0". OCD conditionally approves the closure but will update these 2 questions to 856 sq ft and 127 cubic yards on the incident page. When a reclamation report is submitted these values must be updated to reflect the actual square footage and cubic yardage reclaimed.	12/11/2024
bhall	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	12/11/2024
bhall	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. The OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	12/11/2024
bhall	A revegetation report will not be accepted until revegetation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	12/11/2024
bhall	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	12/11/2024