



August 25, 2022

Vertex Project #: 21E-02797-002

Spill Closure Report: **Red Hills SWD #001** (Section 28, Township 25 South, Range 33 East)
API: 30-025-35598
County: Lea
Incident Reports: NTO1501548835, NJXK1624425919

Prepared For: **Cimarex Energy**
600 North Marienfeld Suite 600
Midland, Texas 79706

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

Cimarex Energy (Cimarex) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for two historical releases of produced water at Red Hills SWD #001, API 30-025-35598, Incident NTO1501548835 and NJXK1624425919 (hereafter referred to as "Red Hills"). Cimarex Energy provided notification to New Mexico Oil Conservation District (NMOCD) District 1 and the private Bureau of Land Management (BLM) via submission of an initial C-141 Release Notifications (Attachment 1). This letter provides a description of the Spill Assessment and includes a request for Spill Closure. The spill area is located at N 32.09614, W -103.58357.

Background

The site is located approximately 23 miles West of Jal, New Mexico. The legal location for the site is Section 28, Township 25 South and Range 33 East in Lea County, New Mexico. The spill area is located on BLM property. An aerial photograph and site schematic were included in NMOCD approved Remediation Plan.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2020) indicates the site's surface geology is comprised primarily of Qep-eolian and piedmont deposits that include eolian sands interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2022). The Natural Resources Conservation Service *Web Soil Survey* characterizes the soil at the site as Pyote loamy fine sands, characterized by deep, fine sandy and loamy fine sandy soil. It tends to be well-drained with negligible runoff and low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

There is no surface water located at Red Hills. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 New Mexico Administrative Code (NMAC), is the Pecos River located approximately 24 miles west of the site. An emergent wetland is located approximately 1.2 miles southwest (United States Fish and Wildlife Service, 2022). At Red Hills, there are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features nearby as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

vertex.ca

3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

Incident Description

The first release occurred on January 8, 2015, due to a swedge failing on the discharge side of the tri-plex pump. The spill was reported on January 9, 2015, and involved the release of approximately 140 barrels (bbl.) of produced water into the earthen bermed containment. Approximately 120 bbl. of free fluid was removed during initial spill clean-up. A second release occurred on top of the original spill and involved the release of approximately 330 bbl. and approximately 270 bbl. of free fluid was recovered at the initial clean-up. The NMOCD C-141 Report: NTO1501548835 is included in Attachment 1. The daily field report (DFR) and site photographs from the initial characterization were included in the NMOCD approved Remediation Plan.

The third release occurred on August 25, 2016, due to a threaded nipple breaking off a tee. The spill was reported on August 26, 2016 and involved the release of approximately 55 barrels (bbl.) of produced water into the earthen bermed containment. Approximately 15 bbl. of free fluid was removed during initial spill clean-up. The NMOCD C-141 Report: NJXK1624425919 is included in Attachment 1. The DFRs and site photographs from the initial characterization were included in the NMOCD approved Remediation Plan.

Closure Criteria Determination

Cimarex retained Vertex to collect lithological data for a test soil borehole for depth to groundwater determination with Scarborough Drilling, Inc. where a borehole was drilled on a neighboring Cimarex location to a depth of 55 feet. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the site is greater than 55 feet. The borehole was properly abandoned with drill cuttings and bentonite chips. Documentation used in Closure Criteria Determination research was included in the Characterization and Remediation Plan submitted and approved by NMOCD.

Cimarex Energy
Red Hills SWD #001, NTO1501548835, NJXK1624425919

2022 Spill Assessment and Closure
August 2022

Closure Criteria Worksheet			
Site Name: Red Hills Unit 1 SWD			
Spill Coordinates:		X: 32.09614	Y: -103.58357
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	55	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	130,336	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	136,449	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	45,681	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	45,681	feet
	ii) Within 1000 feet of any fresh water well or spring	45,681	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	6,340	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	>100	year
11	Soil Type	Pyote loamy fine sand	
12	Ecological Classification	Loamy sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as

vertex.ca

3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

presented in Table 1.

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

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

Remedial Actions Taken

An initial site inspection of the spill area was completed on December 22, 2021, which identified the release specified in the initial C-141 Report. The approximate extent of the spill was then estimated and the area subsequently white lined for the required 811 One Call request. The impacted area was determined to be approximately 157 feet long and 63 feet wide; the total affected area was determined to be 10,799 square feet. Vertex completed delineation around the tank battery containment and pad area, field screens and laboratory results were included within the remediation workplan submission for approval by NMOCD.

A Remediation Plan was completed and submitted to NMOCD for approval to complete excavation. Remediation was completed to meet reclamation standards. Notification of the approved remediation plan can be found in Attachment 2.

Remediation efforts began on July 18, 2022 and were completed on July 21, 2022. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on multiple sample points and consisted of analysis using a Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and electrical conductivity meter (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Contaminated soils were removed to a depth of 4 feet below ground surface (bgs). A site schematic of confirmation sampling points can be found in Figure 2 Attachment 3. Laboratory results are presented in Table 2, Attachment 4. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. The DFRs associated with the remediation site inspections are included in Attachment 5.

NMOCD requested further vertical delineation be completed for sample point BH22-05. Vertex personnel guided equipment to obtain samples to meet strictest criteria. Two samples were collected to show the decrease in contamination at 8 feet bgs and 20 feet bgs. Both samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody (COC) protocols and analyzed for BTEX (EPA Method 8021B), TPH (GRO, DRO, MRO – EPA

Cimarex Energy
Red Hills SWD #001, NTO1501548835, NJXK1624425919

2022 Spill Assessment and Closure
August 2022

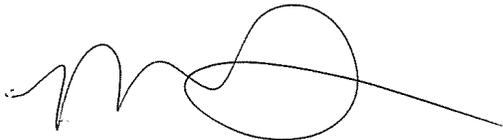
Method 8015D) and total chlorides (EPA Method 300.0). Results for the additional delineation samples are presented in Table 2, Attachment 4 and the laboratory data report is included in Attachment 6.

Notification that confirmatory samples were being collected was provided to the NMOCD on July 15, 2022, and can be found in Attachment 2. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 64 samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under COC protocols and analyzed for BTEX (EPA Method 8021B), TPHs (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 2, Attachment 4 and the laboratory data reports are included in Attachment 6. All confirmatory samples collected and analyzed were below closure criteria for the site.

Closure Request

The spill area was fully delineated, remediated and backfilled with local soils. The confirmatory sample notification email is included in Attachment 2. 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 “51-100 feet to groundwater”. Based on these findings, Cimarex Energy requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.361.9880 or mpeppin@vertex.ca.



August 25, 2022

Monica Peppin, A.S.
PROJECT MANAGER, REPORTING

Date

Attachments

- Attachment 1. NMOCD C-141 Reports
- Attachment 2. Remediation Plan Approval and Confirmatory Sampling Notification
- Attachment 3. Figure 1
- Attachment 4. Table 2 – Laboratory Results Table
- Attachment 5. Daily Field Report with Pictures
- Attachment 6. Laboratory Data Reports and COCs

vertex.ca

3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

References

- Water Column/Average Depth to Water Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>
- Assessed and Impaired Waters of New Mexico.* New Mexico Department of Surface Water Quality Bureau, (2019). Retrieved from <https://gis.web.env.nm.gov/oem/?map=swqb>
- Interactive Geologic Map.* New Mexico Bureau of Geology and Mineral Resources, (2019). Retrieved from <http://geoinfo.nmt.edu>
- Measured Distance from the Subject Site to Residence.* Google Earth Pro, (2019). Retrieved from <https://earth.google.com>
- Point of Diversion Location Report.* New Mexico Water Rights Reporting System, (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html>
- Measured Distance from the Subject Site to Municipal Boundaries.* Google Earth Pro, (2019). Retrieved from <https://earth.google.com>
- National Wetland Inventory Surface Waters and Wetland.* United State Fish and Wildlife Service, (2019). Retrieved from <https://www.fws.gov/wetlands/data/mapper.html>
- Coal Mine Resources in New Mexico.* NM Mining and Minerals Division, (2019). Retrieved from <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>
- New Mexico Cave/Karsts.* United States Department of the Interior, Bureau of Land Management, (2019) Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>
- Flood Map Number 35015C1875D.* United States Department of Homeland Security, FEMA Flood Map Service Center, (2010). Retrieved from <https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor>
- Well Log/Meter Information Report.* NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html>
- Natural Resources and Wildlife Oil and Gas Releases.* New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.
- Soil Survey, New Mexico.* United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

Cimarex Energy
Red Hills SWD #001, NTO1501548835, NJXK1624425919

2022 Spill Assessment and Closure
August 2022

Limitations

This report has been prepared for the sole benefit of Cimarex Energy. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Cimarex Energy. 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.

ATTACHMENT 1

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised October 10, 2003
Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR Initial Report Final Report

Name of Company Cimarex Energy	Contact Christine Alderman
Address 600 N Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059
Facility Name Red Hills SWD #1	Facility Type SWD

Surface Owner	Mineral Owner	Lease No.
---------------	---------------	-----------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	28	25S	33E	660	S	660	W	Lea

Latitude 32.09614 Longitude -103.58256

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 140 bbls	Volume Recovered 120 bbls
Source of Release Tri-plex pump	Date and Hour of Occurrence 1-8-15	Date and Hour of Discovery 1-8-15 12 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Doc Oberding/Sol Hughes	
By Whom? Christine Alderman	Date and Hour 1-9-15 2:06 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

RECEIVED
By OCD District 1 at 1:32 pm, Jun 10, 2015

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A swedge failed on the discharge side of the tri-plex pump. All fluids were contained in an unlined earthen berm. Approximately 140 bbls were released and 120 bbls were recovered.

Describe Area Affected and Cleanup Action Taken.*
119'x68' bermed containment. Diversified Environmental excavated the spill area to 2' bgs per the BLM and NMOCD. Fresh caliche was brought in for backfill.

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

Signature: <i>Christine Alderman</i>	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by District Supervisor: <i>Kell</i>	
Title: ESH Supervisor	Approval Date: 06/10/2015	Expiration Date: //
E-mail Address: calderman@cimarex.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1-14-15 Phone: 432-853-7059	1. RP-3506 will remain open until the site is decommissioned and delineated.	RP-3506
	2. Ensure BLM concurrence/approval.	

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised October 10, 2003
Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company Cimarex Energy	Contact Christine Alderman
Address 600 N. Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059
Facility Name Red Hills SWD #1	Facility Type SWD
Surface Owner	Mineral Owner
	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	28	25S	33E	660	S	660	W	Lea

Latitude 32.09614 Longitude -103.58256

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 330 bbls	Volume Recovered 270 bbls
Source of Release Tri-plex pump	Date and Hour of Occurrence 3-29-15	Date and Hour of Discovery 3-29-15 12 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Doc Oberding/Sol Hughes	
By Whom? Christine Alderman	Date and Hour 3-30-15 11 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By OCD District 1 at 1:32 pm, Jun 10, 2015

Describe Cause of Problem and Remedial Action Taken.*

The fiberglass line coming off of the fiberglass water storage tank snapped off at the connection.

Describe Area Affected and Cleanup Action Taken.*

The spill occurred during a remediation which was already taking place. It was added to the original RP-3506. All contaminants were contained inside the berm. Diversified Environmental excavated the entire spill area to 2' bgs and brought in fresh caliche for backfill, as the site was returned to its previous state.

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

Signature: <i>Christine Alderman</i>	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by District Supervisor: <i>[Signature]</i>	
Title: EHS Supervisor	Approval Date: 06/10/2015	Expiration Date: //
E-mail Address: calderman@cimarex.com	Conditions of Approval: 1. RP-3506 will remain open until the site is decommissioned and delineated. 2. Ensure BLM concurrence/approval.	Attached <input type="checkbox"/> RP-3506
Date: 3-30-2015 Phone: 432-853-7059		

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	NTO1501548835
District RP	1RP-3506
Facility ID	
Application ID	

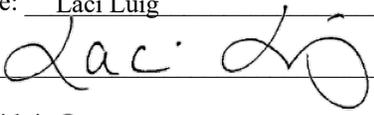
Closure

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

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

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

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

Printed Name: Laci Luig Title: ESH Specialist
 Signature:  Date: 8/30/2022
 email: laci.luig@coterra.com Telephone: 432-208-3035

OCD Only

Received by: _____ Date: _____

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

Closure Approved by:  Date: 09/07/2022
 Printed Name: Jennifer Nobui Title: Environmental Specialist A

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

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

RECEIVED

By **JKeyes** at 7:14 am, Aug 31, 2016

Form C-141

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company Cimax Energy	Contact Christine Alderman
Address 600 N Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059
Facility Name Red Hills SWD	Facility Type SWD

Surface Owner BLM	Mineral Owner	API No. 30-025-35598
-------------------	---------------	----------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	28	25S	33E	660	S	660	W	Lea

Latitude 32.09614 Longitude -103.58357

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 55 bbls	Volume Recovered 15 bbls
Source of Release piping	Date and Hour of Occurrence 8/25/2016	Date and Hour of Discovery 8/25/2016
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Shelly Tucker/Jaime Keyes	
By Whom? Christine Alderman	Date and Hour 8/26/2016	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.

Describe Cause of Problem and Remedial Action Taken.
A 4" threaded nipple broke off a 4" Tee.

Describe Area Affected and Cleanup Action Taken.
All fluids were contained within a dirt unlined berm. This is a functioning facility. Samples will be collected for delineation.

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

Signature: <i>Christine Alderman</i>	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by Environmental Specialist: <i>Jan Keyes</i>	
Title: ESH Supervisor	Approval Date: 08/31/2016	Expiration Date: 10/31/2016
E-mail Address: calderman@cimax.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8/26/2016 Phone: 432-853-7059	Discrete samples only. Delineate and remediate per NMOCD guidelines. Ensure BLM concurrence/approval.	IRP 4423

* Attach Additional Sheets If Necessary

nJXK1624425919
pJXK1624425994

Incident ID	NJXK1624425919
District RP	1RP-4423
Facility ID	
Application ID	

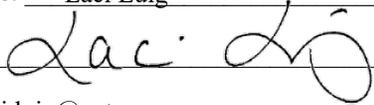
Closure

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

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

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

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

Printed Name: Laci Luig Title: ESH Specialist
 Signature:  Date: 8/30/2022
 email: laci.luig@coterra.com Telephone: 432-208-3035

OCD Only

Received by: _____ Date: _____

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

Closure Approved by:  Date: 09/07/2022
 Printed Name: Jennifer Nobui Title: Environmental Specialist A

ATTACHMENT 2

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>

Sent: Monday, May 9, 2022 12:39 PM

To: Laci Luig <Laci.Luig@coterra.com>

Subject: [EXTERNAL] The Oil Conservation Division (OCD) has approved the application, Application ID: 90834

WARNING: This email originated from outside of Coterra Energy. Do not click links or open attachments unless you recognize the sender, are expecting the content and know it is safe.

To whom it may concern (c/o Laci Luig for CIMAREX ENERGY CO. OF COLORADO),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nJXK1624425919, with the following conditions:

- **Remediation Plan Approved with Conditions. Please excavate past 4' at location BH21-05 to complete vertical delineation and removal. Going forward, please include a site plan showing extent of excavation. Approval applies to nTO1501548835.**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Jennifer Nobui
Environmental Specialist-Advanced
505-476-3441
Jennifer.Nobui@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

This message may contain confidential and/or privileged information. If you are not the addressee or authorized to receive this for the addressee, you must not use, copy, disclose or take any action based on this message or any information herein. If you have received this message in error, please advise the sender immediately by reply e-mail and delete this message.

From: Laci Luig <Laci.Luig@coterra.com>
Sent: July 15, 2022 4:41 PM
To: NMOCD Spill Notifications <OCD.Enviro@state.nm.us>; BLM NM CFO Spill <BLM_NM_CFO_Spill@blm.gov>
Cc: Michael Moffitt <MMoffitt@vertex.ca>; Jim Hawley <JHawley@H-R-Enterprises.com>
Subject: nJXK1624425919 & nTO1501548835 Red Hills SWD 1 confirmation sampling

This email serves as notification for confirmation sampling on the Cimarex – Red Hills 1 SWD. Excavation is scheduled to begin Monday, July 18th and sampling is scheduled to begin as early as Wednesday, July 19th and will be collected by Vertex.

Thank you,



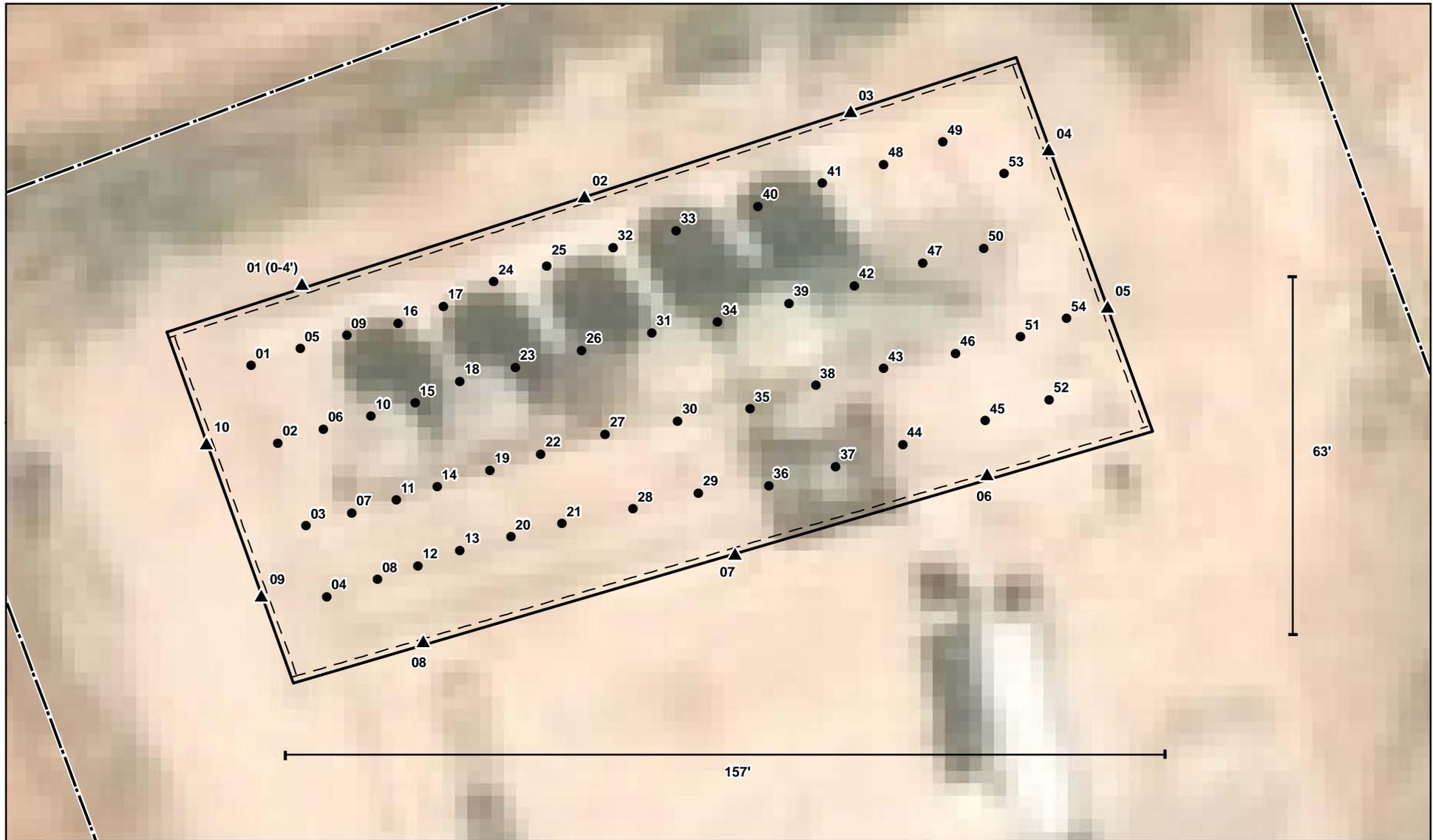
Laci Luig | Environmental Safety & Health Specialist
T: 432.571.7810 | M: 432.208.3035 | laci.luig@coterra.com | www.coterra.com
Coterra Energy Inc. | 600 N. Marienfeld Street, Suite 600 | Midland, TX 79701

Coterra Energy Inc. is the result of the merger of Cimarex Energy Co. and Cabot Oil & Gas Corporation on October 1, 2021.

This message may contain confidential and/or privileged information. If you are not the addressee or authorized to receive this for the addressee, you must not use, copy, disclose or take any action based on this message or any information herein. If you have received this message in error, please advise the sender immediately by reply e-mail and delete this message.

ATTACHMENT 3

Document Path: G:\V-Projects\US PROJECTS\Cimarex\21E-02787\002 - Red Hills Unit 1 SWD\Figure 2 Confirmatory Schematic Red Hills Unit 1 SWD.mxd



- Base Sample (Prefixed by "BS22-")
- ▲ Wall Sample (Prefixed by "WS22-")
- 4' Excavation Area (~10,799 sq. ft.)
- Lease Boundary



0 5 10 20 30 ft
 Map Center:
 Lat/Long: 32.096446, -103.583489

NAD 1983 UTM Zone 13N
 Date: Aug 05/22



**Confirmatory Schematic
 Red Hills Unit 1 SWD**

FIGURE:

1



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

Note: Background image from Maxar, 2022. Lease boundary approximated based on satellite imagery. Feature locations from GPS, Vertex Professional Services Ltd., 2022.

VERSATILITY. EXPERTISE.

ATTACHMENT 4

Client Name: Cimarex Energy
 Site Name: Red Hills SWD #001
 NMOCD Tracking #: NTO1501548835, NJXK1624425919
 Project #: 21E-02797-002
 Lab Reports: 2207B21, 2207B82

Table 2. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs

Table 2. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID) (ppm)	Extractable Organic Compounds (PetroFlag) (ppm)	Chloride Concentration (ppm)	Volatile		Extractable					Chloride Concentration (mg/kg)
						Benzene (mg/kg)	BTEX (Total) (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Motor Oil Range Organics (MRO) (mg/kg)	(GRO + DRO) (mg/kg)	Total Petroleum Hydrocarbons (TPH) (mg/kg)	
BES22-01	4	7/21/22	-	39	2,238	ND	ND	ND	ND	ND	ND	ND	1600
BES22-02	4	7/21/22	-	-	548	ND	ND	ND	ND	ND	ND	ND	340
BES22-03	4	7/21/22	-	-	754	ND	ND	ND	ND	ND	ND	ND	340
BES22-04	4	7/21/22	-	-	672	ND	ND	ND	360	200	360	560	360
BES22-05	4	7/21/22	-	211	4,109	ND	ND	ND	ND	ND	ND	ND	280
BES22-06	4	7/21/22	-	-	378	ND	ND	ND	ND	ND	ND	ND	3100
BES22-07	4	7/21/22	-	39	3,218	ND	ND	ND	ND	ND	ND	ND	2600
BES22-08	4	7/21/22	-	-	406	ND	ND	ND	ND	ND	ND	ND	330
BES22-09	4	7/21/22	-	-	851	ND	ND	ND	ND	ND	ND	ND	480
BES22-10	4	7/21/22	-	-	288	ND	ND	ND	ND	ND	ND	ND	210
BES22-11	4	7/21/22	-	-	443	ND	ND	ND	ND	ND	ND	ND	400
BES22-12	4	7/21/22	-	-	2,046	ND	ND	ND	ND	ND	ND	ND	2200
BES22-13	4	7/21/22	-	21	2,726	ND	ND	ND	19	ND	19	19	1700
BES22-14	4	7/21/22	-	-	174	ND	ND	ND	ND	ND	ND	ND	350
BES22-15	4	7/21/22	-	-	1,154	ND	ND	ND	ND	ND	ND	ND	930
BES22-16	4	7/21/22	-	-	1,179	ND	ND	ND	ND	ND	ND	ND	780
BES22-17	4	7/21/22	-	-	170	ND	ND	7.2	52	ND	59.2	59.2	210
BES22-18	4	7/21/22	-	-	1,441	ND	ND	ND	ND	ND	ND	ND	920
BES22-19	4	7/21/22	-	82	4,244	ND	ND	ND	94	530	94	624	3000
BES22-20	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES22-21	4	7/21/22	-	-	1,229	ND	ND	ND	ND	ND	ND	ND	1600
BES22-22	4	7/21/22	-	17	2,778	ND	ND	ND	ND	ND	ND	ND	1900
BES22-23	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	84
BES22-24	4	7/21/22	-	-	1,010	ND	ND	ND	ND	ND	ND	ND	830
BES22-25	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	82
BES22-26	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	110
BES22-27	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	220
BES22-28	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	110
BES22-29	4	7/21/22	-	4	1,187	ND	ND	ND	ND	ND	ND	ND	1100
BES22-30	4	7/21/22	-	-	1,043	ND	ND	ND	ND	ND	ND	ND	890
BES22-31	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	140
BES22-32	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	130
BES22-33	4	7/21/22	-	-	1	ND	ND	ND	ND	ND	ND	ND	260
BES22-34	4	7/21/22	-	5	1,482	ND	ND	ND	ND	ND	ND	ND	1100
BES22-35	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	61
BES22-36	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	76
BES22-37	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	140
BES22-38	4	7/21/22	-	59	1,245	ND	ND	ND	ND	ND	ND	ND	1200
BES22-39	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	130
BES22-40	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	130
BES22-41	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	89
BES22-42	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	110
BES22-43	4	7/21/22	-	-	67	ND	ND	ND	ND	ND	ND	ND	87
BES22-44	4	7/21/22	-	-	316	ND	ND	ND	ND	ND	ND	ND	360
BES22-45	4	7/21/22	-	4	1,125	ND	ND	ND	ND	ND	ND	ND	650
BES22-46	4	7/21/22	-	108	2,097	ND	ND	ND	20	ND	ND	20	2400
BES22-47	4	7/21/22	-	63	1,085	ND	ND	ND	27	ND	ND	27	1200
BES22-48	4	7/21/22	-	-	445	ND	ND	ND	ND	ND	ND	ND	300
BES22-49	4	7/21/22	-	-	181	ND	ND	ND	ND	ND	ND	ND	230
BES22-50	4	7/21/22	-	-	279	ND	ND	ND	ND	ND	ND	ND	320



Client Name: Cimarex Energy
 Site Name: Red Hills SWD #001
 NMOCD Tracking #: NTO1501548835, NJXK1624425919
 Project #: 21E-02797-002
 Lab Reports: 2207B21, 2207B82

Table 2. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					Chloride Concentration
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BES22-51	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	82
BES22-52	4	7/21/22	-	-	1	ND	ND	ND	ND	ND	ND	ND	99
BES22-53	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
BES22-54	4	7/21/22	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-01	0-4	7/20/22	-	28	160	ND	ND	ND	ND	ND	ND	ND	180
WES22-02	0-4	7/20/22	-	17	ND	ND	ND	ND	ND	ND	ND	ND	69
WES22-03	0-4	7/20/22	-	25	209	ND	ND	ND	ND	ND	ND	ND	210
WES22-04	0-4	7/20/22	-	32	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-05	0-4	7/20/22	-	33	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-06	0-4	7/20/22	-	55	4	ND	ND	ND	ND	ND	ND	ND	ND
WES22-07	0-4	7/20/22	-	20	186	ND	ND	ND	ND	ND	ND	ND	200
WES22-08	0-4	7/20/22	-	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
WES22-09	0-4	7/20/22	-	37	551	ND	ND	ND	ND	ND	ND	ND	280
WES22-10	0-4	7/20/22	-	24	141	ND	ND	ND	ND	ND	ND	ND	70
BH22-05	8	7/20/22	-	47	1,226	ND	ND	ND	ND	ND	ND	ND	630
BH22-05	20	7/20/22	-	123	156	ND	ND	ND	ND	ND	ND	ND	70

"ND" Not Detected at the Reporting Limit
 "-" indicates not analyzed/assessed



ATTACHMENT 5



Daily Site Visit Report

Client:	Cimarex Energy Company of Colorado	Inspection Date:	7/20/2022
Site Location Name:	Red Hills Unit 1 SWD	Report Run Date:	7/20/2022 11:27 PM
Client Contact Name:	Laci Luig	API #:	
Client Contact Phone #:	432.208.3035		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	7/20/2022 9:11 AM
Departed Site	7/20/2022 3:34 PM

Field Notes

- 9:23** Arrived at site and filled out safety paperwork.
- 9:25** Will start to map out excavation on Collector and will start to collect soil samples from each wall.
- 10:10** Started field screening soil samples from North, West, and East walls.
- 15:11** Done field screening wall samples. All wall samples meet NMOCD's criterium.

Next Steps & Recommendations

1



Daily Site Visit Report

Site Photos

Viewing Direction: Northeast



Descriptive Photo - 1
Viewing Direction: Northeast
Desc: Southwest corner of excavation
Created: 7/20/2022 3:22:27 PM
Lat:32.096331, Long:-103.883833
8/11/2

Southwest corner of excavation

Viewing Direction: Southeast



Descriptive Photo - 2
Viewing Direction: Southeast
Desc: Northwest corner of excavation
Created: 7/20/2022 3:26:54 PM
Lat:32.096524, Long:-103.883833

Northwest corner of excavation

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Fernando Rodriguez

Signature: 
Signature

Daily Soil Sampling



Client: Client: Cimarex Energy Company of Colorado

Location: Site: Red Hills Unit 1 SWD

Date: (SD: 7/21/22)

Sampling											
		Field Screening								Data Collection	
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
BES22-01	4.0		39	1.76	25.7	2238			✓	✓	
BES22-02	4.0			0.58	25.4	548			✓		
BES22-03	4.0			0.72	25.3	754			✓		
BES22-04	4.0			0.66	25.2	672			✓		
BES22-05	4.0		211	3.20	30.5	4109			✓		
BES22-06	4.0			0.63	31	378			✓		
BES22-07	4.0		39	2.58	30.4	3218			✓		
BES22-08	4.0			0.59	29	406			✓		
BES22-09	4.0			0.88	28.4	851			✓		
BES22-10	4.0			0.55	30.4	288			✓		
BES22-11	4.0			0.63	29.5	443			✓		
BES22-12	4.0			1.78	30.8	2046			✓		
BES22-13	4.0		21	2.17	28.1	2726			✓		
BES22-14	4.0			0.48	30.7	174			✓		
BES22-15	4.0			1.09	28.4	1154			✓		
BES22-16	4.0			1.11	28.5	1179			✓		
BES22-17	4.0			0.39	27.8	170			✓		
BES22-18	4.0			1.28	28.1	1441			✓		
BES22-19	4.0		82	3.21	27.7	4244			✓		
BES22-20	4.0			0.23	29.3	0			✓		
BES22-21	4.0			1.22	31	1229			✓		
BES22-22	4.0		17	2.23	28.9	2778			✓		
BES22-23	4.0			0.16	28.5	0			✓		
BES22-24	4.0			1.05	30.4	1010			✓		
BES22-25	4.0			0.26	28	0			✓		
BES22-26	4.0			0.28	30.2	0			✓		
BES22-27	4.0			0.26	28.5	0			✓		



Daily Soil Sampling

BES22-28	4.0			0.27	30.2	0			✓		
BES22-29	4.0		4	1.14	29.3	1187			✓		
BES22-30	4.0			1.04	29.3	1043			✓		
BES22-31	4.0			0.13	28.7	0			✓		
BES22-32	4.0			0.30	30	0			✓		
BES22-33	4.0			0.33	29.7	1			✓		
BES22-34	4.0		5	1.38	30.5	1482			✓		
BES22-35	4.0			0.23	30.2	0			✓		
BES22-36	4.0			0.23	28.3	0			✓		
BES22-37	4.0			0.21	27.3	0			✓		
BES22-38	4.0		59	1.12	27.3	1245			✓		
BES22-39	4.0			0.24	30.4	0			✓		
BES22-40	4.0			0.30	30.6	0			✓		
BES22-41	4.0			0.12	30.4	0			✓		
BES22-42	4.0			0.25	27.5	0			✓		
BES22-43	4.0			0.31	27.5	67			✓		
BES22-44	4.0			0.53	29.1	316			✓		
BES22-45	4.0		4	1.04	27.4	1125			✓		
BES22-46	4.0		108	1.80	30.3	2097			✓		
BES22-47	4.0		63	1.06	29	1085			✓		
BES22-48	4.0			0.59	28.1	445			✓		
BES22-49	4.0			0.41	28.2	181			✓		
BES22-50	4.0			0.49	28.6	279			✓		
BES22-51	4.0			0.16	28.3	0			✓		
BES22-52	4.0			0.30	28.7	1			✓		
BES22-53	4.0			0.15	30.5	0			✓		
BES22-54	4.0			0.10	29.4	0			✓		

Daily Soil Sampling



Client: Client: Cimarex Energy Company of Colorado

Location: Site: Red Hills Unit 1 SWD

Date: (SD: 7/20/22)

Sampling											
		Field Screening								Data Collection	
		Hydrocarbon		Chloride							
Sample ID	Depth (ft)	VOC (PID)	TPH (ppm)	EC Reading (mS/cm)	Temp (°C)	EC Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Photo Taken	Marked on Sketch	Refusal Depth (ft)
WES22-01	4.0		28	0.26	23.7	160			✓	✓	
WES22-02	4.0		17	0.12	24	0			✓	✓	
WES22-03	4.0		25	0.30	23.9	209			✓	✓	
WES22-04	4.0		32	0.05	24.1	0			✓		
WES22-05	4.0		33	0.08	24.6	0			✓	✓	
WES22-06	4.0		55	0.14	23.3	4			✓	✓	
WES22-07	4.0		20	0.26	23.1	186			✓	✓	
WES22-08	4.0		21	0.08	25.1	0			✓	✓	
WES22-09	4.0		37	0.57	25	551			✓	✓	
WES22-10	4.0		24	0.28	24.8	141			✓	✓	

ATTACHMENT 6



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

August 03, 2022

Monica Peppin
Cimarex Energy
37 Verano Loop
Santa Fe, NM 87509
TEL: (505) 466-8120
FAX:

RE: Red Hills Unit 1 SWD

OrderNo.: 2207B82

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 54 sample(s) on 7/23/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-01 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 11:35:00 AM

Lab ID: 2207B82-001

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1600	60		mg/Kg	20	7/28/2022 1:53:16 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 12:40:33 PM	69077
Surr: BFB	104	70-130		%Rec	1	7/27/2022 12:40:33 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 4:01:30 PM	69110
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 4:01:30 PM	69110
Surr: DNOP	85.1	21-129		%Rec	1	7/28/2022 4:01:30 PM	69110
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 12:40:33 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 12:40:33 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 12:40:33 PM	69077
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 12:40:33 PM	69077
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/27/2022 12:40:33 PM	69077
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/27/2022 12:40:33 PM	69077
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/27/2022 12:40:33 PM	69077
Surr: Toluene-d8	109	70-130		%Rec	1	7/27/2022 12:40:33 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-02 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 11:40:00 AM

Lab ID: 2207B82-002

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	340	60		mg/Kg	20	7/28/2022 2:05:41 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2022 1:07:42 PM	69077
Surr: BFB	103	70-130		%Rec	1	7/27/2022 1:07:42 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 4:25:53 PM	69110
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 4:25:53 PM	69110
Surr: DNOP	107	21-129		%Rec	1	7/28/2022 4:25:53 PM	69110
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 1:07:42 PM	69077
Toluene	ND	0.049		mg/Kg	1	7/27/2022 1:07:42 PM	69077
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2022 1:07:42 PM	69077
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 1:07:42 PM	69077
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/27/2022 1:07:42 PM	69077
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/27/2022 1:07:42 PM	69077
Surr: Dibromofluoromethane	112	70-130		%Rec	1	7/27/2022 1:07:42 PM	69077
Surr: Toluene-d8	106	70-130		%Rec	1	7/27/2022 1:07:42 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-03 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 11:45:00 AM

Lab ID: 2207B82-003

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	340	60		mg/Kg	20	7/28/2022 2:42:56 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 1:34:51 PM	69077
Surr: BFB	101	70-130		%Rec	1	7/27/2022 1:34:51 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 4:50:24 PM	69110
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 4:50:24 PM	69110
Surr: DNOP	103	21-129		%Rec	1	7/28/2022 4:50:24 PM	69110
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 1:34:51 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 1:34:51 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 1:34:51 PM	69077
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 1:34:51 PM	69077
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/27/2022 1:34:51 PM	69077
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/27/2022 1:34:51 PM	69077
Surr: Dibromofluoromethane	109	70-130		%Rec	1	7/27/2022 1:34:51 PM	69077
Surr: Toluene-d8	102	70-130		%Rec	1	7/27/2022 1:34:51 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-04 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 11:50:00 AM

Lab ID: 2207B82-004

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	360	60		mg/Kg	20	7/28/2022 2:55:21 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2022 2:01:59 PM	69077
Surr: BFB	106	70-130		%Rec	1	7/27/2022 2:01:59 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 5:08:35 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 5:08:35 PM	69113
Surr: DNOP	103	21-129		%Rec	1	7/28/2022 5:08:35 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 2:01:59 PM	69077
Toluene	ND	0.049		mg/Kg	1	7/27/2022 2:01:59 PM	69077
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2022 2:01:59 PM	69077
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 2:01:59 PM	69077
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/27/2022 2:01:59 PM	69077
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/27/2022 2:01:59 PM	69077
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/27/2022 2:01:59 PM	69077
Surr: Toluene-d8	109	70-130		%Rec	1	7/27/2022 2:01:59 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-05 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 11:55:00 AM

Lab ID: 2207B82-005

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	280	59		mg/Kg	20	7/28/2022 3:07:45 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 2:29:08 PM	69077
Surr: BFB	113	70-130		%Rec	1	7/27/2022 2:29:08 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	360	15		mg/Kg	1	7/28/2022 5:52:32 PM	69113
Motor Oil Range Organics (MRO)	200	50		mg/Kg	1	7/28/2022 5:52:32 PM	69113
Surr: DNOP	114	21-129		%Rec	1	7/28/2022 5:52:32 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 2:29:08 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 2:29:08 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 2:29:08 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 2:29:08 PM	69077
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/27/2022 2:29:08 PM	69077
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	7/27/2022 2:29:08 PM	69077
Surr: Dibromofluoromethane	109	70-130		%Rec	1	7/27/2022 2:29:08 PM	69077
Surr: Toluene-d8	101	70-130		%Rec	1	7/27/2022 2:29:08 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-06 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:00:00 PM

Lab ID: 2207B82-006

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	3100	150		mg/Kg	50	7/29/2022 10:45:19 AM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 2:56:15 PM	69077
Surr: BFB	101	70-130		%Rec	1	7/27/2022 2:56:15 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 6:07:41 PM	69113
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 6:07:41 PM	69113
Surr: DNOP	98.1	21-129		%Rec	1	7/28/2022 6:07:41 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 2:56:15 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 2:56:15 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 2:56:15 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 2:56:15 PM	69077
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/27/2022 2:56:15 PM	69077
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/27/2022 2:56:15 PM	69077
Surr: Dibromofluoromethane	111	70-130		%Rec	1	7/27/2022 2:56:15 PM	69077
Surr: Toluene-d8	100	70-130		%Rec	1	7/27/2022 2:56:15 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-07 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:05:00 PM

Lab ID: 2207B82-007

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	2600	150		mg/Kg	50	7/29/2022 10:57:44 AM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2022 3:23:18 PM	69077
Surr: BFB	108	70-130		%Rec	1	7/27/2022 3:23:18 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 6:22:58 PM	69113
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 6:22:58 PM	69113
Surr: DNOP	97.8	21-129		%Rec	1	7/28/2022 6:22:58 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/27/2022 3:23:18 PM	69077
Toluene	ND	0.049		mg/Kg	1	7/27/2022 3:23:18 PM	69077
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2022 3:23:18 PM	69077
Xylenes, Total	ND	0.098		mg/Kg	1	7/27/2022 3:23:18 PM	69077
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	7/27/2022 3:23:18 PM	69077
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/27/2022 3:23:18 PM	69077
Surr: Dibromofluoromethane	110	70-130		%Rec	1	7/27/2022 3:23:18 PM	69077
Surr: Toluene-d8	107	70-130		%Rec	1	7/27/2022 3:23:18 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-08 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:10:00 PM

Lab ID: 2207B82-008

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	330	60		mg/Kg	20	7/28/2022 4:09:47 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 3:50:21 PM	69077
Surr: BFB	108	70-130		%Rec	1	7/27/2022 3:50:21 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 6:38:15 PM	69113
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 6:38:15 PM	69113
Surr: DNOP	99.9	21-129		%Rec	1	7/28/2022 6:38:15 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 3:50:21 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 3:50:21 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 3:50:21 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 3:50:21 PM	69077
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/27/2022 3:50:21 PM	69077
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/27/2022 3:50:21 PM	69077
Surr: Dibromofluoromethane	109	70-130		%Rec	1	7/27/2022 3:50:21 PM	69077
Surr: Toluene-d8	107	70-130		%Rec	1	7/27/2022 3:50:21 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-09 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:15:00 PM

Lab ID: 2207B82-009

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	480	60		mg/Kg	20	7/28/2022 4:22:11 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 4:17:24 PM	69077
Surr: BFB	111	70-130		%Rec	1	7/27/2022 4:17:24 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 6:53:23 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 6:53:23 PM	69113
Surr: DNOP	98.0	21-129		%Rec	1	7/28/2022 6:53:23 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 4:17:24 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 4:17:24 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 4:17:24 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 4:17:24 PM	69077
Surr: 1,2-Dichloroethane-d4	115	70-130		%Rec	1	7/27/2022 4:17:24 PM	69077
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/27/2022 4:17:24 PM	69077
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/27/2022 4:17:24 PM	69077
Surr: Toluene-d8	104	70-130		%Rec	1	7/27/2022 4:17:24 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-10 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:20:00 PM

Lab ID: 2207B82-010

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	210	60		mg/Kg	20	7/28/2022 4:34:35 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 4:44:27 PM	69077
Surr: BFB	109	70-130		%Rec	1	7/27/2022 4:44:27 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 7:08:37 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 7:08:37 PM	69113
Surr: DNOP	93.6	21-129		%Rec	1	7/28/2022 7:08:37 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 4:44:27 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 4:44:27 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 4:44:27 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 4:44:27 PM	69077
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	7/27/2022 4:44:27 PM	69077
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/27/2022 4:44:27 PM	69077
Surr: Dibromofluoromethane	115	70-130		%Rec	1	7/27/2022 4:44:27 PM	69077
Surr: Toluene-d8	108	70-130		%Rec	1	7/27/2022 4:44:27 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-11 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:25:00 PM

Lab ID: 2207B82-011

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	400	60		mg/Kg	20	7/28/2022 4:47:00 PM	69122
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 5:11:31 PM	69077
Surr: BFB	107	70-130		%Rec	1	7/27/2022 5:11:31 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 7:23:31 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 7:23:31 PM	69113
Surr: DNOP	95.2	21-129		%Rec	1	7/28/2022 7:23:31 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 5:11:31 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 5:11:31 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 5:11:31 PM	69077
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 5:11:31 PM	69077
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/27/2022 5:11:31 PM	69077
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/27/2022 5:11:31 PM	69077
Surr: Dibromofluoromethane	113	70-130		%Rec	1	7/27/2022 5:11:31 PM	69077
Surr: Toluene-d8	107	70-130		%Rec	1	7/27/2022 5:11:31 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-12 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:30:00 PM

Lab ID: 2207B82-012

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	2200	60		mg/Kg	20	7/28/2022 10:21:58 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 5:38:34 PM	69077
Surr: BFB	110	70-130		%Rec	1	7/27/2022 5:38:34 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 7:38:41 PM	69113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/28/2022 7:38:41 PM	69113
Surr: DNOP	92.8	21-129		%Rec	1	7/28/2022 7:38:41 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 5:38:34 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 5:38:34 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 5:38:34 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 5:38:34 PM	69077
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/27/2022 5:38:34 PM	69077
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/27/2022 5:38:34 PM	69077
Surr: Dibromofluoromethane	111	70-130		%Rec	1	7/27/2022 5:38:34 PM	69077
Surr: Toluene-d8	108	70-130		%Rec	1	7/27/2022 5:38:34 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-13 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:35:00 PM

Lab ID: 2207B82-013

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1700	60		mg/Kg	20	7/28/2022 10:34:22 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2022 6:05:38 PM	69077
Surr: BFB	108	70-130		%Rec	1	7/27/2022 6:05:38 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/28/2022 7:53:41 PM	69113
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/28/2022 7:53:41 PM	69113
Surr: DNOP	101	21-129		%Rec	1	7/28/2022 7:53:41 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 6:05:38 PM	69077
Toluene	ND	0.049		mg/Kg	1	7/27/2022 6:05:38 PM	69077
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2022 6:05:38 PM	69077
Xylenes, Total	ND	0.098		mg/Kg	1	7/27/2022 6:05:38 PM	69077
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	7/27/2022 6:05:38 PM	69077
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	7/27/2022 6:05:38 PM	69077
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/27/2022 6:05:38 PM	69077
Surr: Toluene-d8	102	70-130		%Rec	1	7/27/2022 6:05:38 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-14 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:40:00 PM

Lab ID: 2207B82-014

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	350	60		mg/Kg	20	7/28/2022 11:11:36 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 6:32:40 PM	69077
Surr: BFB	105	70-130		%Rec	1	7/27/2022 6:32:40 PM	69077
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	19	15		mg/Kg	1	7/28/2022 8:08:21 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 8:08:21 PM	69113
Surr: DNOP	96.2	21-129		%Rec	1	7/28/2022 8:08:21 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 6:32:40 PM	69077
Toluene	ND	0.050		mg/Kg	1	7/27/2022 6:32:40 PM	69077
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 6:32:40 PM	69077
Xylenes, Total	ND	0.10		mg/Kg	1	7/27/2022 6:32:40 PM	69077
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/27/2022 6:32:40 PM	69077
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/27/2022 6:32:40 PM	69077
Surr: Dibromofluoromethane	110	70-130		%Rec	1	7/27/2022 6:32:40 PM	69077
Surr: Toluene-d8	103	70-130		%Rec	1	7/27/2022 6:32:40 PM	69077

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-15 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:45:00 PM

Lab ID: 2207B82-015

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	930	60		mg/Kg	20	7/28/2022 11:24:00 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/27/2022 8:20:54 PM	69078
Surr: BFB	103	70-130		%Rec	1	7/27/2022 8:20:54 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 8:23:23 PM	69113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/28/2022 8:23:23 PM	69113
Surr: DNOP	118	21-129		%Rec	1	7/28/2022 8:23:23 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/27/2022 8:20:54 PM	69078
Toluene	ND	0.050		mg/Kg	1	7/27/2022 8:20:54 PM	69078
Ethylbenzene	ND	0.050		mg/Kg	1	7/27/2022 8:20:54 PM	69078
Xylenes, Total	ND	0.099		mg/Kg	1	7/27/2022 8:20:54 PM	69078
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/27/2022 8:20:54 PM	69078
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/27/2022 8:20:54 PM	69078
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/27/2022 8:20:54 PM	69078
Surr: Toluene-d8	107	70-130		%Rec	1	7/27/2022 8:20:54 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-16 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:50:00 PM

Lab ID: 2207B82-016

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	780	60		mg/Kg	20	7/28/2022 11:36:25 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2022 9:42:03 PM	69078
Surr: BFB	108	70-130		%Rec	1	7/27/2022 9:42:03 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 8:37:59 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 8:37:59 PM	69113
Surr: DNOP	95.3	21-129		%Rec	1	7/28/2022 8:37:59 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/27/2022 9:42:03 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/27/2022 9:42:03 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2022 9:42:03 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/27/2022 9:42:03 PM	69078
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/27/2022 9:42:03 PM	69078
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	7/27/2022 9:42:03 PM	69078
Surr: Dibromofluoromethane	112	70-130		%Rec	1	7/27/2022 9:42:03 PM	69078
Surr: Toluene-d8	105	70-130		%Rec	1	7/27/2022 9:42:03 PM	69078

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

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

Analytical Report

Lab Order 2207B82

Date Reported: 8/3/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-17 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 12:55:00 PM

Lab ID: 2207B82-017

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	210	60		mg/Kg	20	7/28/2022 11:48:49 PM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	7.2	5.0		mg/Kg	1	7/28/2022 12:24:09 PM	69078
Surr: BFB	113	70-130		%Rec	1	7/28/2022 12:24:09 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	52	15		mg/Kg	1	7/28/2022 8:53:03 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 8:53:03 PM	69113
Surr: DNOP	96.4	21-129		%Rec	1	7/28/2022 8:53:03 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 12:24:09 PM	69078
Toluene	ND	0.050		mg/Kg	1	7/28/2022 12:24:09 PM	69078
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 12:24:09 PM	69078
Xylenes, Total	ND	0.099		mg/Kg	1	7/28/2022 12:24:09 PM	69078
Surr: 1,2-Dichloroethane-d4	99.4	70-130		%Rec	1	7/28/2022 12:24:09 PM	69078
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/28/2022 12:24:09 PM	69078
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/28/2022 12:24:09 PM	69078
Surr: Toluene-d8	106	70-130		%Rec	1	7/28/2022 12:24:09 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-18 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:00:00 PM

Lab ID: 2207B82-018

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	920	60		mg/Kg	20	7/29/2022 12:01:14 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/28/2022 12:51:14 PM	69078
Surr: BFB	105	70-130		%Rec	1	7/28/2022 12:51:14 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 9:07:44 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 9:07:44 PM	69113
Surr: DNOP	95.0	21-129		%Rec	1	7/28/2022 9:07:44 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 12:51:14 PM	69078
Toluene	ND	0.050		mg/Kg	1	7/28/2022 12:51:14 PM	69078
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 12:51:14 PM	69078
Xylenes, Total	ND	0.10		mg/Kg	1	7/28/2022 12:51:14 PM	69078
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/28/2022 12:51:14 PM	69078
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	7/28/2022 12:51:14 PM	69078
Surr: Dibromofluoromethane	108	70-130		%Rec	1	7/28/2022 12:51:14 PM	69078
Surr: Toluene-d8	106	70-130		%Rec	1	7/28/2022 12:51:14 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-19 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:05:00 PM

Lab ID: 2207B82-019

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	3000	150		mg/Kg	50	7/29/2022 11:10:08 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/28/2022 1:18:17 PM	69078
Surr: BFB	108	70-130		%Rec	1	7/28/2022 1:18:17 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	94	15		mg/Kg	1	7/28/2022 9:22:33 PM	69113
Motor Oil Range Organics (MRO)	530	49		mg/Kg	1	7/28/2022 9:22:33 PM	69113
Surr: DNOP	96.4	21-129		%Rec	1	7/28/2022 9:22:33 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 1:18:17 PM	69078
Toluene	ND	0.048		mg/Kg	1	7/28/2022 1:18:17 PM	69078
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2022 1:18:17 PM	69078
Xylenes, Total	ND	0.096		mg/Kg	1	7/28/2022 1:18:17 PM	69078
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/28/2022 1:18:17 PM	69078
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/28/2022 1:18:17 PM	69078
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/28/2022 1:18:17 PM	69078
Surr: Toluene-d8	110	70-130		%Rec	1	7/28/2022 1:18:17 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-20 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:10:00 PM

Lab ID: 2207B82-020

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	ND	60		mg/Kg	20	7/29/2022 12:26:03 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/28/2022 1:45:25 PM	69078
Surr: BFB	105	70-130		%Rec	1	7/28/2022 1:45:25 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 9:37:15 AM	69113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 9:37:15 AM	69113
Surr: DNOP	96.4	21-129		%Rec	1	7/29/2022 9:37:15 AM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 1:45:25 PM	69078
Toluene	ND	0.048		mg/Kg	1	7/28/2022 1:45:25 PM	69078
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2022 1:45:25 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2022 1:45:25 PM	69078
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/28/2022 1:45:25 PM	69078
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/28/2022 1:45:25 PM	69078
Surr: Dibromofluoromethane	107	70-130		%Rec	1	7/28/2022 1:45:25 PM	69078
Surr: Toluene-d8	104	70-130		%Rec	1	7/28/2022 1:45:25 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-21 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:15:00 PM

Lab ID: 2207B82-021

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1600	60		mg/Kg	20	7/29/2022 12:38:27 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 2:12:31 PM	69078
Surr: BFB	103	70-130		%Rec	1	7/28/2022 2:12:31 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 9:52:39 PM	69113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 9:52:39 PM	69113
Surr: DNOP	108	21-129		%Rec	1	7/28/2022 9:52:39 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 2:12:31 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 2:12:31 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 2:12:31 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2022 2:12:31 PM	69078
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%Rec	1	7/28/2022 2:12:31 PM	69078
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	7/28/2022 2:12:31 PM	69078
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/28/2022 2:12:31 PM	69078
Surr: Toluene-d8	104	70-130		%Rec	1	7/28/2022 2:12:31 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-22 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:20:00 PM

Lab ID: 2207B82-022

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1900	60		mg/Kg	20	7/29/2022 12:50:51 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/28/2022 2:39:36 PM	69078
Surr: BFB	109	70-130		%Rec	1	7/28/2022 2:39:36 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 10:07:59 PM	69113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/28/2022 10:07:59 PM	69113
Surr: DNOP	117	21-129		%Rec	1	7/28/2022 10:07:59 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 2:39:36 PM	69078
Toluene	ND	0.050		mg/Kg	1	7/28/2022 2:39:36 PM	69078
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 2:39:36 PM	69078
Xylenes, Total	ND	0.10		mg/Kg	1	7/28/2022 2:39:36 PM	69078
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/28/2022 2:39:36 PM	69078
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/28/2022 2:39:36 PM	69078
Surr: Dibromofluoromethane	108	70-130		%Rec	1	7/28/2022 2:39:36 PM	69078
Surr: Toluene-d8	107	70-130		%Rec	1	7/28/2022 2:39:36 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-23 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:25:00 PM

Lab ID: 2207B82-023

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	84	60		mg/Kg	20	7/29/2022 1:03:16 AM	69125
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 3:06:45 PM	69078
Surr: BFB	103	70-130		%Rec	1	7/28/2022 3:06:45 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 10:23:30 PM	69113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/28/2022 10:23:30 PM	69113
Surr: DNOP	91.3	21-129		%Rec	1	7/28/2022 10:23:30 PM	69113
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 3:06:45 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 3:06:45 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 3:06:45 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 3:06:45 PM	69078
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/28/2022 3:06:45 PM	69078
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/28/2022 3:06:45 PM	69078
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/28/2022 3:06:45 PM	69078
Surr: Toluene-d8	103	70-130		%Rec	1	7/28/2022 3:06:45 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-24 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:30:00 PM

Lab ID: 2207B82-024

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	830	60		mg/Kg	20	7/29/2022 2:05:19 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 3:33:53 PM	69078
Surr: BFB	106	70-130		%Rec	1	7/28/2022 3:33:53 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 3:32:42 PM	69123
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 3:32:42 PM	69123
Surr: DNOP	81.6	21-129		%Rec	1	7/29/2022 3:32:42 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 3:33:53 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 3:33:53 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 3:33:53 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 3:33:53 PM	69078
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/28/2022 3:33:53 PM	69078
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/28/2022 3:33:53 PM	69078
Surr: Dibromofluoromethane	112	70-130		%Rec	1	7/28/2022 3:33:53 PM	69078
Surr: Toluene-d8	106	70-130		%Rec	1	7/28/2022 3:33:53 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-25 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:35:00 PM

Lab ID: 2207B82-025

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	82	60		mg/Kg	20	7/29/2022 2:17:43 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/28/2022 4:01:01 PM	69078
Surr: BFB	104	70-130		%Rec	1	7/28/2022 4:01:01 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 4:46:03 PM	69123
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 4:46:03 PM	69123
Surr: DNOP	76.1	21-129		%Rec	1	7/29/2022 4:46:03 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 4:01:01 PM	69078
Toluene	ND	0.050		mg/Kg	1	7/28/2022 4:01:01 PM	69078
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 4:01:01 PM	69078
Xylenes, Total	ND	0.10		mg/Kg	1	7/28/2022 4:01:01 PM	69078
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	7/28/2022 4:01:01 PM	69078
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	7/28/2022 4:01:01 PM	69078
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/28/2022 4:01:01 PM	69078
Surr: Toluene-d8	107	70-130		%Rec	1	7/28/2022 4:01:01 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-26 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:40:00 PM

Lab ID: 2207B82-026

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	110	60		mg/Kg	20	7/29/2022 2:30:07 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 4:28:09 PM	69078
Surr: BFB	106	70-130		%Rec	1	7/28/2022 4:28:09 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 5:10:21 PM	69123
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 5:10:21 PM	69123
Surr: DNOP	86.9	21-129		%Rec	1	7/29/2022 5:10:21 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 4:28:09 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 4:28:09 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 4:28:09 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 4:28:09 PM	69078
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/28/2022 4:28:09 PM	69078
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	7/28/2022 4:28:09 PM	69078
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/28/2022 4:28:09 PM	69078
Surr: Toluene-d8	108	70-130		%Rec	1	7/28/2022 4:28:09 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-27 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:45:00 PM

Lab ID: 2207B82-027

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	220	60		mg/Kg	20	7/29/2022 2:42:32 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 4:55:16 PM	69078
Surr: BFB	106	70-130		%Rec	1	7/28/2022 4:55:16 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 5:34:46 PM	69123
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 5:34:46 PM	69123
Surr: DNOP	80.2	21-129		%Rec	1	7/29/2022 5:34:46 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 4:55:16 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 4:55:16 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 4:55:16 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2022 4:55:16 PM	69078
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	7/28/2022 4:55:16 PM	69078
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/28/2022 4:55:16 PM	69078
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/28/2022 4:55:16 PM	69078
Surr: Toluene-d8	105	70-130		%Rec	1	7/28/2022 4:55:16 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-28 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:50:00 PM

Lab ID: 2207B82-028

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	110	61		mg/Kg	20	7/29/2022 2:54:56 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 5:22:24 PM	69078
Surr: BFB	105	70-130		%Rec	1	7/28/2022 5:22:24 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 5:59:11 PM	69123
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 5:59:11 PM	69123
Surr: DNOP	84.1	21-129		%Rec	1	7/29/2022 5:59:11 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 5:22:24 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 5:22:24 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 5:22:24 PM	69078
Xylenes, Total	ND	0.099		mg/Kg	1	7/28/2022 5:22:24 PM	69078
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%Rec	1	7/28/2022 5:22:24 PM	69078
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/28/2022 5:22:24 PM	69078
Surr: Dibromofluoromethane	104	70-130		%Rec	1	7/28/2022 5:22:24 PM	69078
Surr: Toluene-d8	104	70-130		%Rec	1	7/28/2022 5:22:24 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-29 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 1:55:00 PM

Lab ID: 2207B82-029

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1100	60		mg/Kg	20	7/29/2022 3:07:20 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/28/2022 5:49:27 PM	69078
Surr: BFB	104	70-130		%Rec	1	7/28/2022 5:49:27 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 6:23:45 PM	69123
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	7/29/2022 6:23:45 PM	69123
Surr: DNOP	90.9	21-129		%Rec	1	7/29/2022 6:23:45 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 5:49:27 PM	69078
Toluene	ND	0.048		mg/Kg	1	7/28/2022 5:49:27 PM	69078
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2022 5:49:27 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2022 5:49:27 PM	69078
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	7/28/2022 5:49:27 PM	69078
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/28/2022 5:49:27 PM	69078
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/28/2022 5:49:27 PM	69078
Surr: Toluene-d8	106	70-130		%Rec	1	7/28/2022 5:49:27 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-30 4ft

Project: Red Hills Unit 1 SWD

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

Lab ID: 2207B82-030

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	890	60		mg/Kg	20	7/29/2022 4:09:21 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 6:16:32 PM	69078
Surr: BFB	108	70-130		%Rec	1	7/28/2022 6:16:32 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 6:48:11 PM	69123
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	7/29/2022 6:48:11 PM	69123
Surr: DNOP	102	21-129		%Rec	1	7/29/2022 6:48:11 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 6:16:32 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 6:16:32 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 6:16:32 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 6:16:32 PM	69078
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	7/28/2022 6:16:32 PM	69078
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/28/2022 6:16:32 PM	69078
Surr: Dibromofluoromethane	106	70-130		%Rec	1	7/28/2022 6:16:32 PM	69078
Surr: Toluene-d8	105	70-130		%Rec	1	7/28/2022 6:16:32 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-31 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:05:00 PM

Lab ID: 2207B82-031

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	140	60		mg/Kg	20	7/29/2022 4:21:45 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 6:43:36 PM	69078
Surr: BFB	105	70-130		%Rec	1	7/28/2022 6:43:36 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 7:12:43 PM	69123
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 7:12:43 PM	69123
Surr: DNOP	82.0	21-129		%Rec	1	7/29/2022 7:12:43 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 6:43:36 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 6:43:36 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 6:43:36 PM	69078
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2022 6:43:36 PM	69078
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	7/28/2022 6:43:36 PM	69078
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/28/2022 6:43:36 PM	69078
Surr: Dibromofluoromethane	105	70-130		%Rec	1	7/28/2022 6:43:36 PM	69078
Surr: Toluene-d8	102	70-130		%Rec	1	7/28/2022 6:43:36 PM	69078

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

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

Analytical Report

Lab Order 2207B82

Date Reported: 8/3/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-32 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:10:00 PM

Lab ID: 2207B82-032

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	130	61		mg/Kg	20	7/29/2022 4:34:10 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 7:10:44 PM	69078
Surr: BFB	106	70-130		%Rec	1	7/28/2022 7:10:44 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 7:37:09 PM	69123
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	7/29/2022 7:37:09 PM	69123
Surr: DNOP	83.1	21-129		%Rec	1	7/29/2022 7:37:09 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 7:10:44 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 7:10:44 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 7:10:44 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 7:10:44 PM	69078
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/28/2022 7:10:44 PM	69078
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/28/2022 7:10:44 PM	69078
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/28/2022 7:10:44 PM	69078
Surr: Toluene-d8	103	70-130		%Rec	1	7/28/2022 7:10:44 PM	69078

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

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

Analytical Report

Lab Order 2207B82

Date Reported: 8/3/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-33 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:15:00 PM

Lab ID: 2207B82-033

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	260	60		mg/Kg	20	7/29/2022 4:46:34 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 7:37:47 PM	69078
Surr: BFB	107	70-130		%Rec	1	7/28/2022 7:37:47 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 8:01:41 PM	69123
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/29/2022 8:01:41 PM	69123
Surr: DNOP	83.0	21-129		%Rec	1	7/29/2022 8:01:41 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 7:37:47 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 7:37:47 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 7:37:47 PM	69078
Xylenes, Total	ND	0.099		mg/Kg	1	7/28/2022 7:37:47 PM	69078
Surr: 1,2-Dichloroethane-d4	98.2	70-130		%Rec	1	7/28/2022 7:37:47 PM	69078
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/28/2022 7:37:47 PM	69078
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/28/2022 7:37:47 PM	69078
Surr: Toluene-d8	105	70-130		%Rec	1	7/28/2022 7:37:47 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-34 4ft

Project: Red Hills Unit 1 SWD

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

Lab ID: 2207B82-034

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1100	60		mg/Kg	20	7/29/2022 4:58:58 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2022 8:04:48 PM	69078
Surr: BFB	104	70-130		%Rec	1	7/28/2022 8:04:48 PM	69078
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: DGH
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 8:26:06 PM	69123
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 8:26:06 PM	69123
Surr: DNOP	104	21-129		%Rec	1	7/29/2022 8:26:06 PM	69123
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/28/2022 8:04:48 PM	69078
Toluene	ND	0.049		mg/Kg	1	7/28/2022 8:04:48 PM	69078
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2022 8:04:48 PM	69078
Xylenes, Total	ND	0.098		mg/Kg	1	7/28/2022 8:04:48 PM	69078
Surr: 1,2-Dichloroethane-d4	99.7	70-130		%Rec	1	7/28/2022 8:04:48 PM	69078
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	7/28/2022 8:04:48 PM	69078
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/28/2022 8:04:48 PM	69078
Surr: Toluene-d8	100	70-130		%Rec	1	7/28/2022 8:04:48 PM	69078

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-35 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:25:00 PM

Lab ID: 2207B82-035

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	61	60		mg/Kg	20	7/29/2022 5:11:22 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/28/2022 8:31:50 PM	69090
Surr: BFB	105	70-130		%Rec	1	7/28/2022 8:31:50 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 10:54:37 PM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 10:54:37 PM	69105
Surr: DNOP	93.4	21-129		%Rec	1	7/28/2022 10:54:37 PM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 8:31:50 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/28/2022 8:31:50 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 8:31:50 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/28/2022 8:31:50 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/28/2022 8:31:50 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/28/2022 8:31:50 PM	69090
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/28/2022 8:31:50 PM	69090
Surr: Toluene-d8	101	70-130		%Rec	1	7/28/2022 8:31:50 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-36 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:30:00 PM

Lab ID: 2207B82-036

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	76	60		mg/Kg	20	7/29/2022 5:23:47 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/28/2022 9:52:54 PM	69090
Surr: BFB	107	70-130		%Rec	1	7/28/2022 9:52:54 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 11:40:46 PM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 11:40:46 PM	69105
Surr: DNOP	92.6	21-129		%Rec	1	7/28/2022 11:40:46 PM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/28/2022 9:52:54 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/28/2022 9:52:54 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/28/2022 9:52:54 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/28/2022 9:52:54 PM	69090
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%Rec	1	7/28/2022 9:52:54 PM	69090
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/28/2022 9:52:54 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/28/2022 9:52:54 PM	69090
Surr: Toluene-d8	103	70-130		%Rec	1	7/28/2022 9:52:54 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-37 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:35:00 PM

Lab ID: 2207B82-037

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	140	60		mg/Kg	20	7/29/2022 5:36:11 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 2:03:25 PM	69090
Surr: BFB	97.7	70-130		%Rec	1	7/29/2022 2:03:25 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 11:55:48 PM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 11:55:48 PM	69105
Surr: DNOP	93.8	21-129		%Rec	1	7/28/2022 11:55:48 PM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 2:03:25 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 2:03:25 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 2:03:25 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 2:03:25 PM	69090
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/29/2022 2:03:25 PM	69090
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/29/2022 2:03:25 PM	69090
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/29/2022 2:03:25 PM	69090
Surr: Toluene-d8	104	70-130		%Rec	1	7/29/2022 2:03:25 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-38 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:40:00 PM

Lab ID: 2207B82-038

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	1200	60		mg/Kg	20	7/29/2022 5:48:35 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 2:30:36 PM	69090
Surr: BFB	97.9	70-130		%Rec	1	7/29/2022 2:30:36 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 10:00:50 AM	69105
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 10:00:50 AM	69105
Surr: DNOP	97.5	21-129		%Rec	1	7/29/2022 10:00:50 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 2:30:36 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 2:30:36 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 2:30:36 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 2:30:36 PM	69090
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/29/2022 2:30:36 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 2:30:36 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/29/2022 2:30:36 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 2:30:36 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-40 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:45:00 PM

Lab ID: 2207B82-039

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	130	60		mg/Kg	20	7/29/2022 6:50:37 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 2:57:49 PM	69090
Surr: BFB	98.5	70-130		%Rec	1	7/29/2022 2:57:49 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 12:26:28 AM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 12:26:28 AM	69105
Surr: DNOP	91.4	21-129		%Rec	1	7/29/2022 12:26:28 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 2:57:49 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 2:57:49 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 2:57:49 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 2:57:49 PM	69090
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/29/2022 2:57:49 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 2:57:49 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/29/2022 2:57:49 PM	69090
Surr: Toluene-d8	109	70-130		%Rec	1	7/29/2022 2:57:49 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-41 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:50:00 PM

Lab ID: 2207B82-040

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	89	60		mg/Kg	20	7/29/2022 7:03:01 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 3:25:03 PM	69090
Surr: BFB	92.8	70-130		%Rec	1	7/29/2022 3:25:03 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 12:41:35 AM	69105
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 12:41:35 AM	69105
Surr: DNOP	93.4	21-129		%Rec	1	7/29/2022 12:41:35 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 3:25:03 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 3:25:03 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 3:25:03 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 3:25:03 PM	69090
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	7/29/2022 3:25:03 PM	69090
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/29/2022 3:25:03 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/29/2022 3:25:03 PM	69090
Surr: Toluene-d8	104	70-130		%Rec	1	7/29/2022 3:25:03 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-42 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:00:00 PM

Lab ID: 2207B82-041

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	110	60		mg/Kg	20	7/29/2022 7:15:25 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 3:52:16 PM	69090
Surr: BFB	97.0	70-130		%Rec	1	7/29/2022 3:52:16 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 12:56:46 AM	69105
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 12:56:46 AM	69105
Surr: DNOP	95.7	21-129		%Rec	1	7/29/2022 12:56:46 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 3:52:16 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 3:52:16 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 3:52:16 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 3:52:16 PM	69090
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/29/2022 3:52:16 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 3:52:16 PM	69090
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/29/2022 3:52:16 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 3:52:16 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-43 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:05:00 PM

Lab ID: 2207B82-042

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	87	60		mg/Kg	20	7/29/2022 7:27:49 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 4:19:27 PM	69090
Surr: BFB	95.1	70-130		%Rec	1	7/29/2022 4:19:27 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 1:12:01 AM	69105
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 1:12:01 AM	69105
Surr: DNOP	95.5	21-129		%Rec	1	7/29/2022 1:12:01 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 4:19:27 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 4:19:27 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 4:19:27 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 4:19:27 PM	69090
Surr: 1,2-Dichloroethane-d4	99.4	70-130		%Rec	1	7/29/2022 4:19:27 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 4:19:27 PM	69090
Surr: Dibromofluoromethane	104	70-130		%Rec	1	7/29/2022 4:19:27 PM	69090
Surr: Toluene-d8	103	70-130		%Rec	1	7/29/2022 4:19:27 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-44 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:10:00 PM

Lab ID: 2207B82-043

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	360	60		mg/Kg	20	7/29/2022 7:40:13 AM	69134
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 4:46:33 PM	69090
Surr: BFB	97.3	70-130		%Rec	1	7/29/2022 4:46:33 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 1:27:25 AM	69105
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 1:27:25 AM	69105
Surr: DNOP	94.0	21-129		%Rec	1	7/29/2022 1:27:25 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 4:46:33 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 4:46:33 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 4:46:33 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 4:46:33 PM	69090
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/29/2022 4:46:33 PM	69090
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	7/29/2022 4:46:33 PM	69090
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/29/2022 4:46:33 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 4:46:33 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-45 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:15:00 PM

Lab ID: 2207B82-044

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	650	60		mg/Kg	20	7/29/2022 11:45:05 AM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 5:13:43 PM	69090
Surr: BFB	103	70-130		%Rec	1	7/29/2022 5:13:43 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 1:42:41 AM	69105
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/29/2022 1:42:41 AM	69105
Surr: DNOP	90.3	21-129		%Rec	1	7/29/2022 1:42:41 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 5:13:43 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 5:13:43 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 5:13:43 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 5:13:43 PM	69090
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/29/2022 5:13:43 PM	69090
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	7/29/2022 5:13:43 PM	69090
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/29/2022 5:13:43 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 5:13:43 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-46 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:20:00 PM

Lab ID: 2207B82-045

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JTT
Chloride	2400	150		mg/Kg	50	8/1/2022 9:16:41 AM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2022 5:40:53 PM	69090
Surr: BFB	97.5	70-130		%Rec	1	7/29/2022 5:40:53 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	20	14		mg/Kg	1	7/29/2022 1:57:58 AM	69105
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/29/2022 1:57:58 AM	69105
Surr: DNOP	91.9	21-129		%Rec	1	7/29/2022 1:57:58 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/29/2022 5:40:53 PM	69090
Toluene	ND	0.048		mg/Kg	1	7/29/2022 5:40:53 PM	69090
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2022 5:40:53 PM	69090
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2022 5:40:53 PM	69090
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/29/2022 5:40:53 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 5:40:53 PM	69090
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/29/2022 5:40:53 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 5:40:53 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-47 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:25:00 PM

Lab ID: 2207B82-046

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	1200	60		mg/Kg	20	7/29/2022 12:09:47 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 6:07:58 PM	69090
Surr: BFB	95.7	70-130		%Rec	1	7/29/2022 6:07:58 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	27	14		mg/Kg	1	7/29/2022 2:13:14 AM	69105
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 2:13:14 AM	69105
Surr: DNOP	93.0	21-129		%Rec	1	7/29/2022 2:13:14 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 6:07:58 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 6:07:58 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 6:07:58 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 6:07:58 PM	69090
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/29/2022 6:07:58 PM	69090
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/29/2022 6:07:58 PM	69090
Surr: Dibromofluoromethane	103	70-130		%Rec	1	7/29/2022 6:07:58 PM	69090
Surr: Toluene-d8	102	70-130		%Rec	1	7/29/2022 6:07:58 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-48 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:30:00 PM

Lab ID: 2207B82-047

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	300	60		mg/Kg	20	7/29/2022 12:22:08 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2022 6:35:03 PM	69090
Surr: BFB	98.3	70-130		%Rec	1	7/29/2022 6:35:03 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 2:28:23 AM	69105
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	7/29/2022 2:28:23 AM	69105
Surr: DNOP	89.7	21-129		%Rec	1	7/29/2022 2:28:23 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/29/2022 6:35:03 PM	69090
Toluene	ND	0.048		mg/Kg	1	7/29/2022 6:35:03 PM	69090
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2022 6:35:03 PM	69090
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2022 6:35:03 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/29/2022 6:35:03 PM	69090
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/29/2022 6:35:03 PM	69090
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/29/2022 6:35:03 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 6:35:03 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-49 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:35:00 PM

Lab ID: 2207B82-048

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	230	60		mg/Kg	20	7/29/2022 12:34:28 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 7:02:06 PM	69090
Surr: BFB	95.6	70-130		%Rec	1	7/29/2022 7:02:06 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 2:43:07 AM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 2:43:07 AM	69105
Surr: DNOP	90.4	21-129		%Rec	1	7/29/2022 2:43:07 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 7:02:06 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 7:02:06 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 7:02:06 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 7:02:06 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/29/2022 7:02:06 PM	69090
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/29/2022 7:02:06 PM	69090
Surr: Dibromofluoromethane	98.6	70-130		%Rec	1	7/29/2022 7:02:06 PM	69090
Surr: Toluene-d8	107	70-130		%Rec	1	7/29/2022 7:02:06 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-50 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:40:00 PM

Lab ID: 2207B82-049

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	320	60		mg/Kg	20	7/29/2022 1:36:12 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 7:29:09 PM	69090
Surr: BFB	99.6	70-130		%Rec	1	7/29/2022 7:29:09 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/29/2022 2:57:46 AM	69105
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2022 2:57:46 AM	69105
Surr: DNOP	91.6	21-129		%Rec	1	7/29/2022 2:57:46 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/29/2022 7:29:09 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 7:29:09 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 7:29:09 PM	69090
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2022 7:29:09 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/29/2022 7:29:09 PM	69090
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	7/29/2022 7:29:09 PM	69090
Surr: Dibromofluoromethane	98.2	70-130		%Rec	1	7/29/2022 7:29:09 PM	69090
Surr: Toluene-d8	105	70-130		%Rec	1	7/29/2022 7:29:09 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-51 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:44:00 PM

Lab ID: 2207B82-050

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	82	60		mg/Kg	20	7/29/2022 2:13:14 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/29/2022 7:56:10 PM	69090
Surr: BFB	98.4	70-130		%Rec	1	7/29/2022 7:56:10 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 3:12:09 AM	69105
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/29/2022 3:12:09 AM	69105
Surr: DNOP	90.9	21-129		%Rec	1	7/29/2022 3:12:09 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 7:56:10 PM	69090
Toluene	ND	0.049		mg/Kg	1	7/29/2022 7:56:10 PM	69090
Ethylbenzene	ND	0.049		mg/Kg	1	7/29/2022 7:56:10 PM	69090
Xylenes, Total	ND	0.098		mg/Kg	1	7/29/2022 7:56:10 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/29/2022 7:56:10 PM	69090
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/29/2022 7:56:10 PM	69090
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/29/2022 7:56:10 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 7:56:10 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-52 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:50:00 PM

Lab ID: 2207B82-051

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	99	60		mg/Kg	20	7/29/2022 2:25:35 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2022 8:23:11 PM	69090
Surr: BFB	96.4	70-130		%Rec	1	7/29/2022 8:23:11 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 3:26:26 AM	69105
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 3:26:26 AM	69105
Surr: DNOP	90.7	21-129		%Rec	1	7/29/2022 3:26:26 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/29/2022 8:23:11 PM	69090
Toluene	ND	0.048		mg/Kg	1	7/29/2022 8:23:11 PM	69090
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2022 8:23:11 PM	69090
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2022 8:23:11 PM	69090
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	7/29/2022 8:23:11 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 8:23:11 PM	69090
Surr: Dibromofluoromethane	99.8	70-130		%Rec	1	7/29/2022 8:23:11 PM	69090
Surr: Toluene-d8	105	70-130		%Rec	1	7/29/2022 8:23:11 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-53 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 3:55:00 PM

Lab ID: 2207B82-052

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	ND	60		mg/Kg	20	7/29/2022 2:37:56 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 8:50:14 PM	69090
Surr: BFB	103	70-130		%Rec	1	7/29/2022 8:50:14 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 3:40:43 AM	69105
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/29/2022 3:40:43 AM	69105
Surr: DNOP	91.1	21-129		%Rec	1	7/29/2022 3:40:43 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 8:50:14 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 8:50:14 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 8:50:14 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 8:50:14 PM	69090
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/29/2022 8:50:14 PM	69090
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/29/2022 8:50:14 PM	69090
Surr: Dibromofluoromethane	101	70-130		%Rec	1	7/29/2022 8:50:14 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 8:50:14 PM	69090

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

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

Analytical Report

Lab Order 2207B82

Date Reported: 8/3/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-54 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 4:00:00 PM

Lab ID: 2207B82-053

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	ND	60		mg/Kg	20	7/29/2022 2:50:18 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 9:17:16 PM	69090
Surr: BFB	101	70-130		%Rec	1	7/29/2022 9:17:16 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/29/2022 3:54:53 AM	69105
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/29/2022 3:54:53 AM	69105
Surr: DNOP	92.0	21-129		%Rec	1	7/29/2022 3:54:53 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 9:17:16 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 9:17:16 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 9:17:16 PM	69090
Xylenes, Total	ND	0.10		mg/Kg	1	7/29/2022 9:17:16 PM	69090
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/29/2022 9:17:16 PM	69090
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	7/29/2022 9:17:16 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/29/2022 9:17:16 PM	69090
Surr: Toluene-d8	106	70-130		%Rec	1	7/29/2022 9:17:16 PM	69090

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

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

Analytical Report

Lab Order **2207B82**

Date Reported: **8/3/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cimarex Energy

Client Sample ID: BS22-39 4ft

Project: Red Hills Unit 1 SWD

Collection Date: 7/20/2022 2:45:00 PM

Lab ID: 2207B82-054

Matrix: SOIL

Received Date: 7/23/2022 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: NAI
Chloride	130	60		mg/Kg	20	7/29/2022 3:02:38 PM	69151
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2022 9:44:19 PM	69090
Surr: BFB	96.6	70-130		%Rec	1	7/29/2022 9:44:19 PM	69090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/29/2022 4:09:00 AM	69105
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/29/2022 4:09:00 AM	69105
Surr: DNOP	92.4	21-129		%Rec	1	7/29/2022 4:09:00 AM	69105
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/29/2022 9:44:19 PM	69090
Toluene	ND	0.050		mg/Kg	1	7/29/2022 9:44:19 PM	69090
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2022 9:44:19 PM	69090
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2022 9:44:19 PM	69090
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%Rec	1	7/29/2022 9:44:19 PM	69090
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/29/2022 9:44:19 PM	69090
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/29/2022 9:44:19 PM	69090
Surr: Toluene-d8	104	70-130		%Rec	1	7/29/2022 9:44:19 PM	69090

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: MB-69122	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69122	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/28/2022	SeqNo: 3201834	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69122	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69122	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/28/2022	SeqNo: 3201835	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Sample ID: MB-69125	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69125	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/28/2022	SeqNo: 3201868	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69125	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69125	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/28/2022	SeqNo: 3201869	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Sample ID: MB-69134	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69134	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3201910	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69134	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69134	RunNo: 89864								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3201911	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			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: MB-69151	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69151	RunNo: 89897								
Prep Date: 7/29/2022	Analysis Date: 7/29/2022	SeqNo: 3203422	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69151	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69151	RunNo: 89897								
Prep Date: 7/29/2022	Analysis Date: 7/29/2022	SeqNo: 3203423	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: MB-69110	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69110	RunNo: 89822								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201010	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		87.8	21	129			

Sample ID: LCS-69110	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69110	RunNo: 89822								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201017	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.9	64.4	127			
Surr: DNOP	4.6		5.000		91.8	21	129			

Sample ID: MB-69113	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69113	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201471	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		134	21	129			S

Sample ID: LCS-69113	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69113	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201472	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	15	50.00	0	100	64.4	127			
Surr: DNOP	5.7		5.000		114	21	129			

Sample ID: MB-69105	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69105	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201473	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.4	21	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: LCS-69105	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69105	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201474	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	15	50.00	0	88.1	64.4	127			
Surr: DNOP	5.1		5.000		101	21	129			

Sample ID: 2207B82-004AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-04 4ft	Batch ID: 69113	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201476	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	14	45.62	0	117	36.1	154			
Surr: DNOP	5.7		4.562		126	21	129			

Sample ID: 2207B82-004AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-04 4ft	Batch ID: 69113	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201477	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	14	46.51	0	105	36.1	154	9.59	33.9	
Surr: DNOP	5.5		4.651		118	21	129	0	0	

Sample ID: 2207B82-035AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-35 4ft	Batch ID: 69105	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201511	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	15	49.70	0	80.6	36.1	154			
Surr: DNOP	4.6		4.970		93.1	21	129			

Sample ID: 2207B82-035AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-35 4ft	Batch ID: 69105	RunNo: 89862								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201512	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	14	48.12	0	83.7	36.1	154	0.588	33.9	
Surr: DNOP	4.6		4.812		95.9	21	129	0	0	

Sample ID: MB-69123	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69123	RunNo: 89887								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3202572	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: MB-69123	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69123	RunNo: 89887								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3202572	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		84.0	21	129			

Sample ID: 2207B82-024AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-24 4ft	Batch ID: 69123	RunNo: 89887								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3203202	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	49.70	0	87.2	36.1	154	6.39	33.9	
Surr: DNOP	4.0		4.970		80.1	21	129	0	0	

Sample ID: LCS-69123	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69123	RunNo: 89887								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3203242	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	15	50.00	0	98.5	64.4	127			
Surr: DNOP	4.4		5.000		88.0	21	129			

Sample ID: 2207B82-024AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS22-24 4ft	Batch ID: 69123	RunNo: 89887								
Prep Date: 7/28/2022	Analysis Date: 7/29/2022	SeqNo: 3203289	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	15	49.16	0	82.7	36.1	154			
Surr: DNOP	3.8		4.916		76.8	21	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: 2207b82-016ams	SampType: MS4	TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: BS22-16 4ft	Batch ID: 69078	RunNo: 89849									
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199696	Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.2	0.025	0.9804	0	127	75.8	123			S	
Toluene	1.1	0.049	0.9804	0	115	68.3	130				
Ethylbenzene	1.1	0.049	0.9804	0	114	76.6	132				
Xylenes, Total	3.4	0.098	2.941	0.03179	115	74.7	132				
Surr: 1,2-Dichloroethane-d4	0.55		0.4902		112	70	130				
Surr: 4-Bromofluorobenzene	0.53		0.4902		107	70	130				
Surr: Dibromofluoromethane	0.56		0.4902		114	70	130				
Surr: Toluene-d8	0.51		0.4902		103	70	130				

Sample ID: 2207b82-016amsd	SampType: MSD4	TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: BS22-16 4ft	Batch ID: 69078	RunNo: 89849									
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199697	Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.3	0.025	0.9911	0	129	75.8	123	2.70	20	S	
Toluene	1.2	0.050	0.9911	0	117	68.3	130	3.11	20		
Ethylbenzene	1.1	0.050	0.9911	0	114	76.6	132	0.380	20		
Xylenes, Total	3.4	0.099	2.973	0.03179	114	74.7	132	0.528	20		
Surr: 1,2-Dichloroethane-d4	0.55		0.4955		111	70	130	0	0		
Surr: 4-Bromofluorobenzene	0.54		0.4955		108	70	130	0	0		
Surr: Dibromofluoromethane	0.57		0.4955		114	70	130	0	0		
Surr: Toluene-d8	0.51		0.4955		104	70	130	0	0		

Sample ID: Ics-69077	SampType: LCS4	TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: BatchQC	Batch ID: 69077	RunNo: 89849									
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199698	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	120	80	120			S	
Toluene	1.2	0.050	1.000	0	118	80	120				
Ethylbenzene	1.1	0.050	1.000	0	112	80	120				
Xylenes, Total	3.5	0.10	3.000	0	116	80	120				
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.7	70	130				
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130				
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130				
Surr: Toluene-d8	0.53		0.5000		105	70	130				

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: ics-69078	SampType: LCS4		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: BatchQC	Batch ID: 69078		RunNo: 89849							
Prep Date: 7/26/2022	Analysis Date: 7/27/2022		SeqNo: 3199699		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	114	80	120			
Toluene	1.1	0.050	1.000	0	105	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		108	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		113	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: mb-69077	SampType: MBLK		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batch ID: 69077		RunNo: 89849							
Prep Date: 7/26/2022	Analysis Date: 7/27/2022		SeqNo: 3199700		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	0.54		0.5000		107	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		109	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: mb-69078	SampType: MBLK		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batch ID: 69078		RunNo: 89849							
Prep Date: 7/26/2022	Analysis Date: 7/27/2022		SeqNo: 3199701		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	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130			
Surr: Toluene-d8	0.53		0.5000		106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: ics-69090	SampType: LCS4		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: BatchQC	Batch ID: 69090		RunNo: 89891							
Prep Date: 7/27/2022	Analysis Date: 7/28/2022		SeqNo: 3202207		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	119	80	120			
Toluene	1.1	0.050	1.000	0	114	80	120			
Ethylbenzene	1.1	0.050	1.000	0	109	80	120			
Xylenes, Total	3.4	0.10	3.000	0	112	80	120			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		108	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: mb-69090	SampType: MBLK		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batch ID: 69090		RunNo: 89891							
Prep Date: 7/27/2022	Analysis Date: 7/28/2022		SeqNo: 3202208		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	0.54		0.5000		109	70	130			
Surr: 4-Bromofluorobenzene	0.56		0.5000		111	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		115	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID: 2207b82-036ams	SampType: MS4		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: BS22-36 4ft	Batch ID: 69090		RunNo: 89916							
Prep Date: 7/27/2022	Analysis Date: 7/29/2022		SeqNo: 3203118		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	0.9970	0	94.9	75.8	123			
Toluene	0.94	0.050	0.9970	0	93.8	68.3	130			
Ethylbenzene	0.93	0.050	0.9970	0	93.3	76.6	132			
Xylenes, Total	2.8	0.10	2.991	0.03233	93.6	74.7	132			
Surr: 1,2-Dichloroethane-d4	0.53		0.4985		107	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.4985		102	70	130			
Surr: Dibromofluoromethane	0.53		0.4985		106	70	130			
Surr: Toluene-d8	0.53		0.4985		106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: 2207B82-036AMSD	SampType: MSD4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BS22-36 4ft	Batch ID: 69090	RunNo: 89916								
Prep Date: 7/27/2022	Analysis Date: 7/29/2022	SeqNo: 3203119 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	0.9852	0	90.5	75.8	123	5.88	20	
Toluene	0.93	0.049	0.9852	0	94.7	68.3	130	0.216	20	
Ethylbenzene	0.88	0.049	0.9852	0	88.9	76.6	132	6.01	20	
Xylenes, Total	2.7	0.099	2.956	0.03233	90.6	74.7	132	4.43	20	
Surr: 1,2-Dichloroethane-d4	0.48		0.4926		97.2	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.49		0.4926		99.2	70	130	0	0	
Surr: Dibromofluoromethane	0.48		0.4926		97.9	70	130	0	0	
Surr: Toluene-d8	0.53		0.4926		107	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: 2207b82-015ams	SampType: MS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: BS22-15 4ft	Batch ID: 69078	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199790	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	31	4.9	24.73	1.726	117	65.9	123			
Surr: BFB	550		494.6		110	70	130			

Sample ID: 2207b82-015amsd	SampType: MSD	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: BS22-15 4ft	Batch ID: 69078	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199791	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.93	1.726	90.4	65.9	123	23.4	20	R
Surr: BFB	540		498.5		108	70	130	0	0	

Sample ID: lcs-69077	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 69077	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199793	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	70	130			
Surr: BFB	550		500.0		109	70	130			

Sample ID: lcs-69078	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 69078	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199794	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	70	130			
Surr: BFB	550		500.0		110	70	130			

Sample ID: mb-69077	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 69077	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199795	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	520		500.0		104	70	130			

Sample ID: mb-69078	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 69078	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199796	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B82

03-Aug-22

Client: Cimarex Energy
Project: Red Hills Unit 1 SWD

Sample ID: mb-69078	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 69078	RunNo: 89849								
Prep Date: 7/26/2022	Analysis Date: 7/27/2022	SeqNo: 3199796	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			

Sample ID: 2207b82-035ams	SampType: MS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: BS22-35 4ft	Batch ID: 69090	RunNo: 89891								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3202229	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.73	0	99.4	65.9	123			
Surr: BFB	520		494.6		105	70	130			

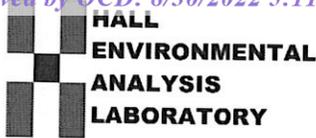
Sample ID: 2207b82-035amsd	SampType: MSD	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: BS22-35 4ft	Batch ID: 69090	RunNo: 89891								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3202230	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.90	0	96.9	65.9	123	1.87	20	
Surr: BFB	540		498.0		108	70	130	0	0	

Sample ID: lcs-69090	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 69090	RunNo: 89891								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3202232	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	70	130			
Surr: BFB	540		500.0		109	70	130			

Sample ID: mb-69090	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 69090	RunNo: 89891								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3202233	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		109	70	130			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: Cimarex Energy Work Order Number: 2207B82 RcptNo: 1

Received By: Juan Rojas 7/23/2022 8:10:00 AM
Completed By: Juan Rojas 7/23/2022 9:32:45 AM
Reviewed By: CME 7/25/22

Chain of Custody

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

Log In

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

of preserved bottles checked for pH: Adjusted? Checked by: JN 7/23/22

Special Handling (if applicable)

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

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

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 4.4, Good, [], [], []

Chain-of-Custody Record

Client: Cimarex

Mailing Address: On File

Phone #: _____

email or Fax#: _____

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

Accreditation: Az Compliance NELAC Other

EDD (Type) _____

Turn-Around Time: _____

Standard Rush 5 Day

Project Name: Red Hills Unit 2 SWD

Project #: 21E-02797-02-05

Project Manager: Monica Reppin

Sampler: Fernando Rodriguez

On Ice: Yes No

of Coolers: _____

Cooler Temp (including CF): 4.6-6.2-4.4 (°C)

Container Type and # 4oz jar 1ce

Preservative Type _____

HEAL No. 7207B82

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/20	11:35	Soil	B522-01 1ft	4oz jar 1ce		-001
	11:40		B522-02			-002
	11:45		B522-03			-003
	11:50		B522-04			-004
	11:55		B522-05			-005
	12:00		B522-06			-006
	12:05		B522-07			-007
	12:10		B522-08			-008
	12:15		B522-09			-009
	12:20		B522-10			-010
	12:25		B522-11			-011
	12:30		B522-12			-012

Date: _____ Time: _____

Relinquished by: _____

Date: _____ Time: _____

Relinquished by: _____

Received by: Admire Date: 7/20/22 Time: 1030

Received by: [Signature] Date: 7/23/22 Time: 810



HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Analysis Request

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

Remarks: CC Monica Reppin

Chain-of-Custody Record

Client: Camarot

Mailing Address: On file

Phone #: _____

email or Fax#: _____

QA/QC Package: Standard Level 4 (Full Validation) Az Compliance Other

Accreditation: NELAC Other

EDD (Type) _____

Turn-Around Time: Standard Rush 5 DAM

Project Name: Red Hills Unit A SWD

Project #: 215-02797-02-05

Project Manager: Monica Peppin

Sampler: Fernando Rodriguez

On Ice: Yes No

of Coolers: 1

Cooler Temp (including CP): 4.6-6.7 = 4.4 (°C)

Container Type and # 4oz jar

Preservative Type Ice

HEAL No. 2207382

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/20	12:35	soil	BS22-13	4oz jar	Ice	-013
	12:40		BS22-14			-014
	12:45		BS22-15			-015
	12:50		BS22-16			-016
	12:55		BS22-17			-017
	13:00		BS22-18			-018
	13:05		BS22-19			-019
	13:10		BS22-20			-020
	13:15		BS22-21			-021
	13:20		BS22-22			-022
	13:25		BS22-23			-023
	13:30		BS22-24			-024

Date: _____ Time: _____ Relinquished by: _____

Date: 7/20/22 Time: 1000 Relinquished by: adamm

Received by: adamm Date: 7/20/22 Time: 1030

Received by: Pat Courier Date: 7/23/22 Time: 8:10

Analysis Request

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

Remarks:

cc Monica Peppin

Chain-of-Custody Record

Client: Cimarron

Mailing Address: On Site

Phone #: _____

email or Fax#: _____

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

Accreditation: Az Compliance Other

NELAC Other

EDD (Type) _____

Turn-Around Time: Standard Rush 5 PM

Project Name: Red Hills Unit 1 SWD

Project #: 215-02197-02-05

Project Manager: Monica Peppin

Sampler: Fernando Rodriguez

On Ice: Yes No

of Coolers: 1

Cooler Temp (including CF): 4-6-0.7=4.4 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/20	13:35	Soil	B522-25	402 Jar	Ice	22071382
	13:40		B522-26			-025
	13:45		B522-27			-026
	13:50		B522-28			-027
	13:55		B522-29			-028
	14:00		B522-30			-029
	14:05		B522-31			-030
	14:10		B522-32			-031
	14:15		B522-33			-032
	14:20		B522-34			-033
	14:25		B522-35			-034
	14:30		B522-36			-035

Date: _____ Time: _____

Relinquished by: _____

Date: 7/20/22 Time: 1900

Relinquished by: Cimarron



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

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

Remarks: CC Monica Peppin

Chain-of-Custody Record

Client: Cumarex

Mailing Address: Dr. Fire

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: Red Hills Unit 1 SWD

Project #: 1AE-02197-02-05

Project Manager: Monica Peppin

Sampler: Fernando Rodriguez

On Ice: Yes No

of Coolers: _____

Cooler Temp (including CF): 4.6-0.2=4.4 (°C)

HEAL No. 2: 7207B887

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2
7/10	14:30	Soil	B522-37	402 JAV	Ice	-037
	14:40		B522-38			-038
	14:45		B522-40			-039
	14:50		B522-41			-040
	14:55		B522-42			-041
	15:00		B522-43			-042
	15:05		B522-44			-043
	15:10		B522-45			-044
	15:15		B522-46			-045
	15:20		B522-47			-046
	15:25		B522-48			-047
	15:30		B522-49			-048

Date: _____ Time: _____

Relinquished by: _____

Date: 7/22/22 Time: 1030

Received by: Monica Peppin Via: _____

Date: 7/23/22 Time: 8:10

Received by: [Signature] Via: _____



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

Analysis Request

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

Remarks: CC Monica Peppin

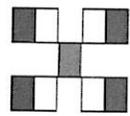
Chain-of-Custody Record

Client: Camaret
 Mailing Address: Onfile
 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:
Red Hills Unit 1 SWD
 Project #:
12E-02197-02-05
 Project Manager:
Monica Leppin
 Sampler: Fernando Rodriguez
 On Ice: Yes No
 # of Coolers: 1
 Cooler Temp (including CF): 4.6-0.2-4.4 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
7/20	15:35	Soil	B522-50	902 jar	100	22071382
	15:40		B522-51			-049
	15:45		B522-52			-050
	15:50		B522-53			-051
	15:55		B522-54			-052
4/20	14:25		B522-39' 4'			-053
			Dev sample bottle	JN-7123122		054

Date: _____ Time: _____
 Relinquished by: _____
 Date: 7/20/22 Time: 1900
 Relinquished by: Camaret
 Received by: Camaret Date: 7/22/22 Time: 1030
 Received by: Ed Camaret Date: 7/22/22 Time: 8:10



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

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

Remarks: CC Monica Leppin



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

July 29, 2022

Michael Moffitt

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Red Hills SWD 1

OrderNo.: 2207B21

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 12 sample(s) on 7/22/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-01 0-4'

Project: Red Hills SWD 1

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

Lab ID: 2207B21-001

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/25/2022 7:52:53 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/25/2022 7:52:53 PM
Surr: DNOP	82.4	21-129		%Rec	1	7/25/2022 7:52:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/26/2022 3:34:17 AM
Surr: BFB	105	37.7-212		%Rec	1	7/26/2022 3:34:17 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	7/26/2022 3:34:17 AM
Toluene	ND	0.047		mg/Kg	1	7/26/2022 3:34:17 AM
Ethylbenzene	ND	0.047		mg/Kg	1	7/26/2022 3:34:17 AM
Xylenes, Total	ND	0.094		mg/Kg	1	7/26/2022 3:34:17 AM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	7/26/2022 3:34:17 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	180	60		mg/Kg	20	7/27/2022 9:23:38 PM

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

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

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-02 0-4'

Project: Red Hills SWD 1

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

Lab ID: 2207B21-002

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 5:22:00 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/28/2022 5:22:00 AM
Surr: DNOP	106	21-129		%Rec	1	7/28/2022 5:22:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2022 8:07:00 PM
Surr: BFB	92.5	37.7-212		%Rec	1	7/25/2022 8:07:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/25/2022 8:07:00 PM
Toluene	ND	0.048		mg/Kg	1	7/25/2022 8:07:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2022 8:07:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/25/2022 8:07:00 PM
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	1	7/25/2022 8:07:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	69	60		mg/Kg	20	7/27/2022 10:00:41 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-03 0-4'

Project: Red Hills SWD 1

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

Lab ID: 2207B21-003

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 6:32:53 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/28/2022 6:32:53 AM
Surr: DNOP	96.0	21-129		%Rec	1	7/28/2022 6:32:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/25/2022 9:07:00 PM
Surr: BFB	97.3	37.7-212		%Rec	1	7/25/2022 9:07:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/25/2022 9:07:00 PM
Toluene	ND	0.049		mg/Kg	1	7/25/2022 9:07:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/25/2022 9:07:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/25/2022 9:07:00 PM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	7/25/2022 9:07:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	210	60		mg/Kg	20	7/27/2022 10:13:02 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-04 0-4'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 10:30:00 AM

Lab ID: 2207B21-004

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 6:56:29 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 6:56:29 AM
Surr: DNOP	98.4	21-129		%Rec	1	7/28/2022 6:56:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2022 10:06:00 PM
Surr: BFB	93.4	37.7-212		%Rec	1	7/25/2022 10:06:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/25/2022 10:06:00 PM
Toluene	ND	0.048		mg/Kg	1	7/25/2022 10:06:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2022 10:06:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/25/2022 10:06:00 PM
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	7/25/2022 10:06:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	61		mg/Kg	20	7/27/2022 10:25:23 PM

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

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

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-05 0-4'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 10:40:00 AM

Lab ID: 2207B21-005

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 7:20:03 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 7:20:03 AM
Surr: DNOP	97.8	21-129		%Rec	1	7/28/2022 7:20:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2022 10:26:00 PM
Surr: BFB	91.1	37.7-212		%Rec	1	7/25/2022 10:26:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/25/2022 10:26:00 PM
Toluene	ND	0.048		mg/Kg	1	7/25/2022 10:26:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2022 10:26:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/25/2022 10:26:00 PM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	7/25/2022 10:26:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	61		mg/Kg	20	7/27/2022 11:02:26 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-06 0-4'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 10:50:00 AM

Lab ID: 2207B21-006

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	7/28/2022 5:11:18 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	7/28/2022 5:11:18 PM
Surr: DNOP	98.4	21-129		%Rec	1	7/28/2022 5:11:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2022 10:46:00 PM
Surr: BFB	94.6	37.7-212		%Rec	1	7/25/2022 10:46:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/25/2022 10:46:00 PM
Toluene	ND	0.050		mg/Kg	1	7/25/2022 10:46:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2022 10:46:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2022 10:46:00 PM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	7/25/2022 10:46:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	59		mg/Kg	20	7/27/2022 11:14:46 PM

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

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

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-07 0-4'

Project: Red Hills SWD 1

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

Lab ID: 2207B21-007

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 5:59:48 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 5:59:48 PM
Surr: DNOP	106	21-129		%Rec	1	7/28/2022 5:59:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/25/2022 11:05:00 PM
Surr: BFB	90.4	37.7-212		%Rec	1	7/25/2022 11:05:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/25/2022 11:05:00 PM
Toluene	ND	0.049		mg/Kg	1	7/25/2022 11:05:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/25/2022 11:05:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/25/2022 11:05:00 PM
Surr: 4-Bromofluorobenzene	87.1	70-130		%Rec	1	7/25/2022 11:05:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	200	61		mg/Kg	20	7/27/2022 10:53:54 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-08 0-4'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 11:10:00 AM

Lab ID: 2207B21-008

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 6:24:15 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 6:24:15 PM
Surr: DNOP	95.5	21-129		%Rec	1	7/28/2022 6:24:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2022 11:25:00 PM
Surr: BFB	94.9	37.7-212		%Rec	1	7/25/2022 11:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	7/25/2022 11:25:00 PM
Toluene	ND	0.050		mg/Kg	1	7/25/2022 11:25:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2022 11:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/25/2022 11:25:00 PM
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	7/25/2022 11:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	ND	60		mg/Kg	20	7/27/2022 11:06:15 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-09 0-4'

Project: Red Hills SWD 1

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

Lab ID: 2207B21-009

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 6:48:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2022 6:48:42 PM
Surr: DNOP	122	21-129		%Rec	1	7/28/2022 6:48:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2022 11:45:00 PM
Surr: BFB	91.8	37.7-212		%Rec	1	7/25/2022 11:45:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/25/2022 11:45:00 PM
Toluene	ND	0.048		mg/Kg	1	7/25/2022 11:45:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2022 11:45:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/25/2022 11:45:00 PM
Surr: 4-Bromofluorobenzene	87.2	70-130		%Rec	1	7/25/2022 11:45:00 PM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	280	60		mg/Kg	20	7/27/2022 11:18:35 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-10 0-4'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 11:30:00 AM

Lab ID: 2207B21-010

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	7/28/2022 7:13:05 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2022 7:13:05 PM
Surr: DNOP	114	21-129		%Rec	1	7/28/2022 7:13:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/26/2022 12:04:00 AM
Surr: BFB	96.3	37.7-212		%Rec	1	7/26/2022 12:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/26/2022 12:04:00 AM
Toluene	ND	0.048		mg/Kg	1	7/26/2022 12:04:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/26/2022 12:04:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	7/26/2022 12:04:00 AM
Surr: 4-Bromofluorobenzene	90.4	70-130		%Rec	1	7/26/2022 12:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	70	60		mg/Kg	20	7/27/2022 11:30:56 AM

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

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

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-05 8'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 12:00:00 PM

Lab ID: 2207B21-011

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 7:37:19 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	7/28/2022 7:37:19 PM
Surr: DNOP	99.7	21-129		%Rec	1	7/28/2022 7:37:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/26/2022 12:24:00 AM
Surr: BFB	96.4	37.7-212		%Rec	1	7/26/2022 12:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/26/2022 12:24:00 AM
Toluene	ND	0.048		mg/Kg	1	7/26/2022 12:24:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/26/2022 12:24:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	7/26/2022 12:24:00 AM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	7/26/2022 12:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	630	60		mg/Kg	20	7/27/2022 11:43:17 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order **2207B21**

Date Reported: **7/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH22-05 20'

Project: Red Hills SWD 1

Collection Date: 7/20/2022 12:25:00 PM

Lab ID: 2207B21-012

Matrix: SOIL

Received Date: 7/22/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	7/28/2022 8:01:33 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/28/2022 8:01:33 PM
Surr: DNOP	94.9	21-129		%Rec	1	7/28/2022 8:01:33 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/26/2022 1:04:00 AM
Surr: BFB	95.1	37.7-212		%Rec	1	7/26/2022 1:04:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	7/26/2022 1:04:00 AM
Toluene	ND	0.049		mg/Kg	1	7/26/2022 1:04:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/26/2022 1:04:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	7/26/2022 1:04:00 AM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	7/26/2022 1:04:00 AM
EPA METHOD 300.0: ANIONS						Analyst: JTT
Chloride	70	60		mg/Kg	20	7/27/2022 12:20:20 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 Estimated value
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: MB-69091	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69091	RunNo: 89832								
Prep Date: 7/27/2022	Analysis Date: 7/27/2022	SeqNo: 3199704	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69091	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69091	RunNo: 89832								
Prep Date: 7/27/2022	Analysis Date: 7/27/2022	SeqNo: 3199705	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	90	110			

Sample ID: MB-69106	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 69106	RunNo: 89832								
Prep Date: 7/27/2022	Analysis Date: 7/27/2022	SeqNo: 3199730	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-69106	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 69106	RunNo: 89832								
Prep Date: 7/27/2022	Analysis Date: 7/27/2022	SeqNo: 3199731	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: MB-68995	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 68995	RunNo: 89755								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3197420			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.2		10.00		81.9	21	129			

Sample ID: LCS-68995	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 68995	RunNo: 89755								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3197422			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	50.00	0	85.5	64.4	127			
Surr: DNOP	3.8		5.000		76.9	21	129			

Sample ID: MB-69030	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69030	RunNo: 89822								
Prep Date: 7/25/2022	Analysis Date: 7/27/2022	SeqNo: 3199182			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		97.3	21	129			

Sample ID: LCS-69030	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69030	RunNo: 89822								
Prep Date: 7/25/2022	Analysis Date: 7/27/2022	SeqNo: 3199184			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	15	50.00	0	100	64.4	127			
Surr: DNOP	5.0		5.000		99.4	21	129			

Sample ID: 2207B21-002AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: WS22-02 0-4'	Batch ID: 69030	RunNo: 89822								
Prep Date: 7/25/2022	Analysis Date: 7/28/2022	SeqNo: 3199187			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	15	48.40	0	102	36.1	154			
Surr: DNOP	4.5		4.840		93.6	21	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: 2207B21-002AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: WS22-02 0-4'	Batch ID: 69030	RunNo: 89822								
Prep Date: 7/25/2022	Analysis Date: 7/28/2022	SeqNo: 3199188	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	14	46.90	0	109	36.1	154	3.73	33.9	
Surr: DNOP	4.6		4.690		98.9	21	129	0	0	

Sample ID: MB-69110	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 69110	RunNo: 89822								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201010	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		87.8	21	129			

Sample ID: LCS-69110	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 69110	RunNo: 89822								
Prep Date: 7/27/2022	Analysis Date: 7/28/2022	SeqNo: 3201017	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.8	21	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: mb-68990	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 68990	RunNo: 89759								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196558	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		100	37.7	212			

Sample ID: lcs-68990	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 68990	RunNo: 89759								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196559	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	72.3	137			
Surr: BFB	2000		1000		201	37.7	212			

Sample ID: lcs-68997	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196729	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.3	72.3	137			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: mb-68997	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196730	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	930		1000		92.7	37.7	212			

Sample ID: 2207b21-002ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS22-02 0-4'	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196732	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.06	0	109	70	130			
Surr: BFB	2000		962.5		209	37.7	212			

Sample ID: 2207b21-002amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS22-02 0-4'	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196733	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: 2207b21-002amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS22-02 0-4'	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196733			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	24.04	0	92.9	70	130	15.7	20	
Surr: BFB	1900		961.5		200	37.7	212	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: mb-68990	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 68990	RunNo: 89759								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196597	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	0.97		1.000		97.3	70	130			

Sample ID: LCS-68990	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 68990	RunNo: 89759								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196598	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.5	80	120			
Toluene	0.99	0.050	1.000	0	98.6	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.6	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.4	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: lcs-68997	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196782	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.3	80	120			
Toluene	0.87	0.050	1.000	0	87.1	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.5	80	120			
Xylenes, Total	2.6	0.10	3.000	0	88.2	80	120			
Surr: 4-Bromofluorobenzene	0.86		1.000		86.5	70	130			

Sample ID: mb-68997	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196783	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.87		1.000		86.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207B21

29-Jul-22

Client: Vertex Resources Services, Inc.

Project: Red Hills SWD 1

Sample ID: 2207b21-003ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: WS22-03 0-4'	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196786	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	0.9950	0	85.4	68.8	120			
Toluene	0.87	0.050	0.9950	0	87.4	73.6	124			
Ethylbenzene	0.88	0.050	0.9950	0	88.6	72.7	129			
Xylenes, Total	2.7	0.10	2.985	0	88.8	75.7	126			
Surr: 4-Bromofluorobenzene	0.89		0.9950		89.2	70	130			

Sample ID: 2207b21-003amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: WS22-03 0-4'	Batch ID: 68997	RunNo: 89774								
Prep Date: 7/22/2022	Analysis Date: 7/25/2022	SeqNo: 3196787	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9862	0	89.5	68.8	120	3.81	20	
Toluene	0.90	0.049	0.9862	0	91.5	73.6	124	3.66	20	
Ethylbenzene	0.92	0.049	0.9862	0	92.9	72.7	129	3.90	20	
Xylenes, Total	2.7	0.099	2.959	0	92.9	75.7	126	3.63	20	
Surr: 4-Bromofluorobenzene	0.87		0.9862		88.1	70	130	0	0	

Qualifiers:

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



Sample Log-In Check List

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

Work Order Number: **2207B21**

RcptNo: 1

Received By: **Juan Rojas** 7/22/2022 7:00:00 AM

Juan Rojas

Completed By: **Cheyenne Cason** 7/22/2022 7:46:00 AM

Cheyenne Cason

Reviewed By: *KPL* 7-22-22

Chain of Custody

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

Log In

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

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: *JR 7/22/22*

Special Handling (if applicable)

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

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

16. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Not Present			

Chain-of-Custody Record

Client: Vertex

Mailing Address:

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:

Red Hills SWD #1

Project #:

21E-02797

Project Manager:

Michael Moffitt

Sampler: FR

On Ice: Yes No

of Coolers: 1

Cooler Temp (including CF): 1, -0.5, 1 (°C)

Container Type and #

402 ice cool

Preservative Type

None

HEAL No.

2207321

001

002

003

004

005

006

007

008

009

010

WS22-01 0-4'

WS22-02 0-4'

WS22-03 0-4'

WS22-04 0-4'

WS22-05 0-4'

WS22-06 0-4'

WS22-07 0-4'

WS22-08 0-4'

WS22-09 0-4'

WS22-10 0-4'

1900

Date: 7/11/22 Time: 1900

Date: 7/11/22 Time: 1900

Relinquished by: [Signature]

Relinquished by: [Signature]

Received by: [Signature]

Received by: [Signature]

Date: 7/11/22

Date: 7/11/22

Via: Express

Via: Express

Remarks: cc: M. Moffitt & Laci Luig report

Remarks: cc: M. Moffitt & Laci Luig report

Analysis Request

BTEX / MTBE / TMBs (8021)

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCBs

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

C, F, Br, NO₃, NO₂, PO₄, SO₄

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Chain-of-Custody Record

Client: Vertex

Mailing Address:

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:

Red Hills SWD #1

Project #:

22E-

Project Manager:

Michael Moffitt

Sampler: MJP

On Ice: Yes No

of Coolers: 1

Cooler Temp (including CP): 1.1-0.2-1.1 (°C)

Container Type and #

4oz ice

Preservative Type

ice

HEAL No.

2207B21

Date	Time	Matrix	Sample Name
<u>7/20</u>	<u>12:00</u>	<u>soil</u>	<u>BH22-05 8'</u>
<u>7/20</u>	<u>12:05</u>	<u>soil</u>	<u>BH22-05 20'</u>

Analysis Request

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

Remarks:

Received by: [Signature] Date: 7/12/22 Time: 9:30
 Received by: [Signature] Date: 7/22/22 Time: 7:00

CC: M Moffitt & C. Ludwig

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720
District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 139205

CONDITIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 600 N. Marienfeld Street Midland, TX 79701	OGRID: 162683
	Action Number: 139205
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved. Please implement 19.15.29.13 NMAC when completing P&A.	9/7/2022