



Incident Number: nAPP2331855166

Incident Closure

Russell Federal 19-30

Section 19, Township 26 South, Range 32 East

County: Lea

32.0259172, -103.7170441

Vertex File Number: 24E-04568

Prepared for:

Sahara Operating Company

Prepared by:

Vertex Resource Services Inc.

Date:

May 2025

Sahara Operating Company
Russell Federal 19-30

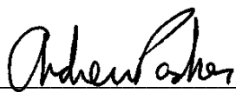
Incident Closure
May 2025

Incident Closure
Russell Federal 19-30
Section 19, Township 26 South, Range 32 East
County: Lea
32.0259172, -103.7170441

Prepared for:
Sahara Operating Company
PO Box 4130
Midland, Texas 79704

New Mexico Oil Conservation Division
508 West Texas Avenue
Artesia, New Mexico 88210

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



Andrew Parker, MGIS
SENIOR PROJECT MANAGER

May 08, 2025

Date

Sahara Operating Company
Russell Federal 19-30

Incident Closure
May 2025

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Sahara Operating Company
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1.0 Introduction

Sahara Operating Company retained Vertex Resource Services Inc. (Vertex) to conduct an Incident Closure for a produced water release that occurred on October 31, 2023, at the release location commonly known as the Russell Fed 19-30 Release (hereafter referred to as the "site"). The Notification of Release was submitted to the New Mexico Oil Conservation Division (NMOCD) on November 1, 2023. Incident ID number nAPP2331855166 was assigned to this incident. The C-141 Initial was submitted to NMOCD's digital reporting system on June 7, 2024.

This report provides a description of remediation activities associated with the site. Upon NMOCD's approval of the proposed variance presented in Section 3.0 and Appendix A, the information presented demonstrates that closure criteria established in 19.15.29 of the New Mexico Administrative Code (NMAC) have been met and all applicable regulations were followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release, with the understanding that restoration of the release site will be completed following remediation activities as per NMAC 19.15.29.13.

2.0 Remedial Actions Taken

Remediation efforts began on October 14, 2024, and final surface reclamation was completed on May 5, 2025. Vertex personnel supervised the excavation of impacted soils. Field screening for chlorides was completed to identify areas requiring additional excavation of impacted soils. Relevant Daily Field Reports documenting various phases of the remediation are presented in Appendix B.

Impacted soils were removed to a depth of 1 to 12 feet below ground surface (bgs). 1,405 cubic yards of impacted soil was transported by a licensed waste hauler and disposed of at Desert Environmental waste management facility.

Notification that confirmatory samples were being collected was provided to the NMOCD and notice confirmations are summarized in Appendix C. Confirmatory composite samples were collected from the base and walls of the excavation to not exceed 200 square foot increments. Each sample location was a 5-point composite within the designated grid.

A total of 79 samples, including two backfill samples, were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Cardinal Laboratories under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA SM4500CL-B). A summary of laboratory results is presented in Table 1, and the laboratory data reports are included in Appendix D. All confirmatory samples collected and analyzed were either below closure criteria or meet closure criteria per proposed variance as discussed in Section 3.

Closure Criteria for the areas not within the variance area are defined as, where depth-to-water is greater than 100 ft:

- Upper 4-feet
 - Chloride < 600 mg/kg
 - TPH (GRO + DRO + MRO) < 100 mg/kg
 - BTEX < 50 mg/kg
 - Benzene < 10 mg/kg
- Below 4-feet
 - Chloride < 20,000 mg/kg
 - TPH (GRO + DRO + MRO) < 2,500 mg/kg
 - TPH (GRO + DRO) < 1,000 mg/kg
 - BTEX < 50 mg/kg
 - Benzene < 10 mg/kg

The Closure Criteria for the proposed variance area is defined as, where depth-to-water is > 100 ft:

- Below 1-foot
 - Chloride < 20,000 mg/kg
 - TPH (GRO + DRO + MRO) < 2,500 mg/kg
 - TPH (GRO + DRO) < 1,000 mg/kg
 - BTEX < 50 mg/kg
 - Benzene < 10 mg/kg

Prior to the discovery that depth-to-water is greater than 100 ft bgs, Closure Criteria were to the most stringent concentrations. NMOCD approved the recently discovered depth-to-water data and updated Closure Criteria on March 11, 2025. Prior to the approval, excavation depths exceeded 4 feet with a maximum depth of 12 feet. The area south of the southern ConocoPhilips pipeline was remediated to the most stringent Closure Criteria.

- Figure 1 shows remediation excavation extent and depths
- Figure 2 shows base sample grid square footages with variance areas identified
- Figure 3 shows confirmation sample locations

3.0 Variance Request

Sahara Operating Company respectfully asks NMOCD for a variance to the approved Closure Criteria for the northwest remediation area that underlies overhead pipelines and is within an area of very hard caliche. The variance request was first presented to NMOCD on March 7, 2025. NMOCD responded on March 11, 2025, with approval of the depth-to-water and extension of time, which was included in the variance request. Verbal communication with Mr. Nelson Velez of NMOCD concluded that the variance request for the subject northwest area was to be included in the Closure Report. A copy of the variance request with email communication is included in Appendix C.

For further clarification, NMOCD asked that vertical delineation within the variance request area be defined. Vertical delineation was obtained during the November 7, 2023, characterization sampling and is represented by soil sample SSA-03 in Table 1 and on Figure 3.

Sahara Operating Company
Russell Federal 19-30

Incident Closure
May 2025

4.0 Reclamation Activities

Following remediation activities, reclamation was completed to restore the surface to its current use as a utility right-of-way (ROW) and pastureland in accordance with 19.15.29.13 NMAC.

The remediated areas were backfilled, contoured, and seeded, which was completed on May 5, 2025, with clean, non-waste-containing earthen material, including a minimum of 1 ft of topsoil suitable for revegetation. The area was contoured to match the existing utility ROW and pastureland. The location was reseeded with seed mix BLM #1 Seed Mix for loamy sites. Seed was mechanically broadcasted at a rate of 40 PLS per acre and chain-dragged into place. The site will be monitored for revegetation, soil stability and noxious weeds.

5.0 Closure Request

Confirmatory samples were analyzed by the laboratory analysis and found to be below allowable concentrations as per the NMAC Closure Criteria for soils impacted by a release where groundwater is greater than 100 feet bgs and per proposed variance. Based on these findings, Sahara Operating Company requests that this incident be closed.

Should you have any questions or concerns, please do not hesitate to contact Andrew Parker at 575.689.7007 or aparker@vertexresource.com.

Sahara Operating Company
Russell Federal 19-30

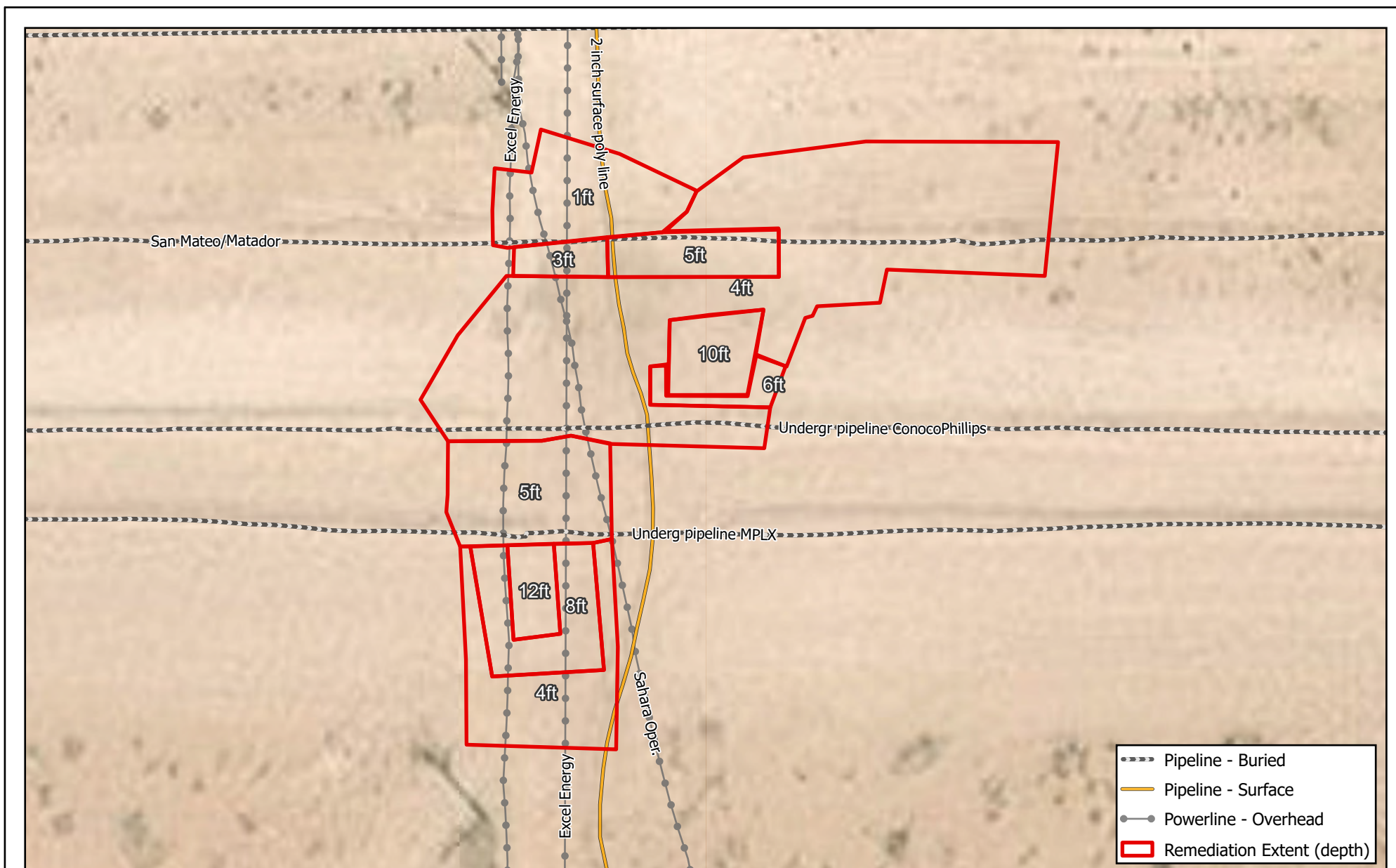
Incident Closure
May 2025

6.0 Limitations

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

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

FIGURES



Map Center:
Lat/Long: 32.025763°N, 103.716954°W
Date: Apr 15/25
NAD 1983 StatePlane New Mexico East FIPS 3001 Feet



Excavation Extents with Depths
Russell Federal 19-30
(nAPP2331855166)

FIGURE:

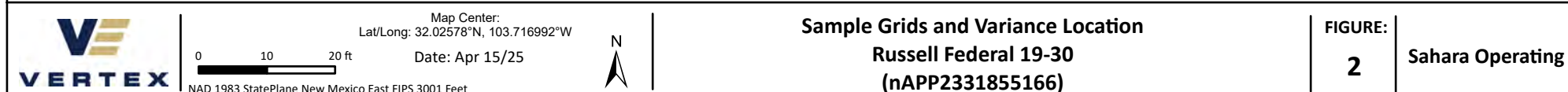
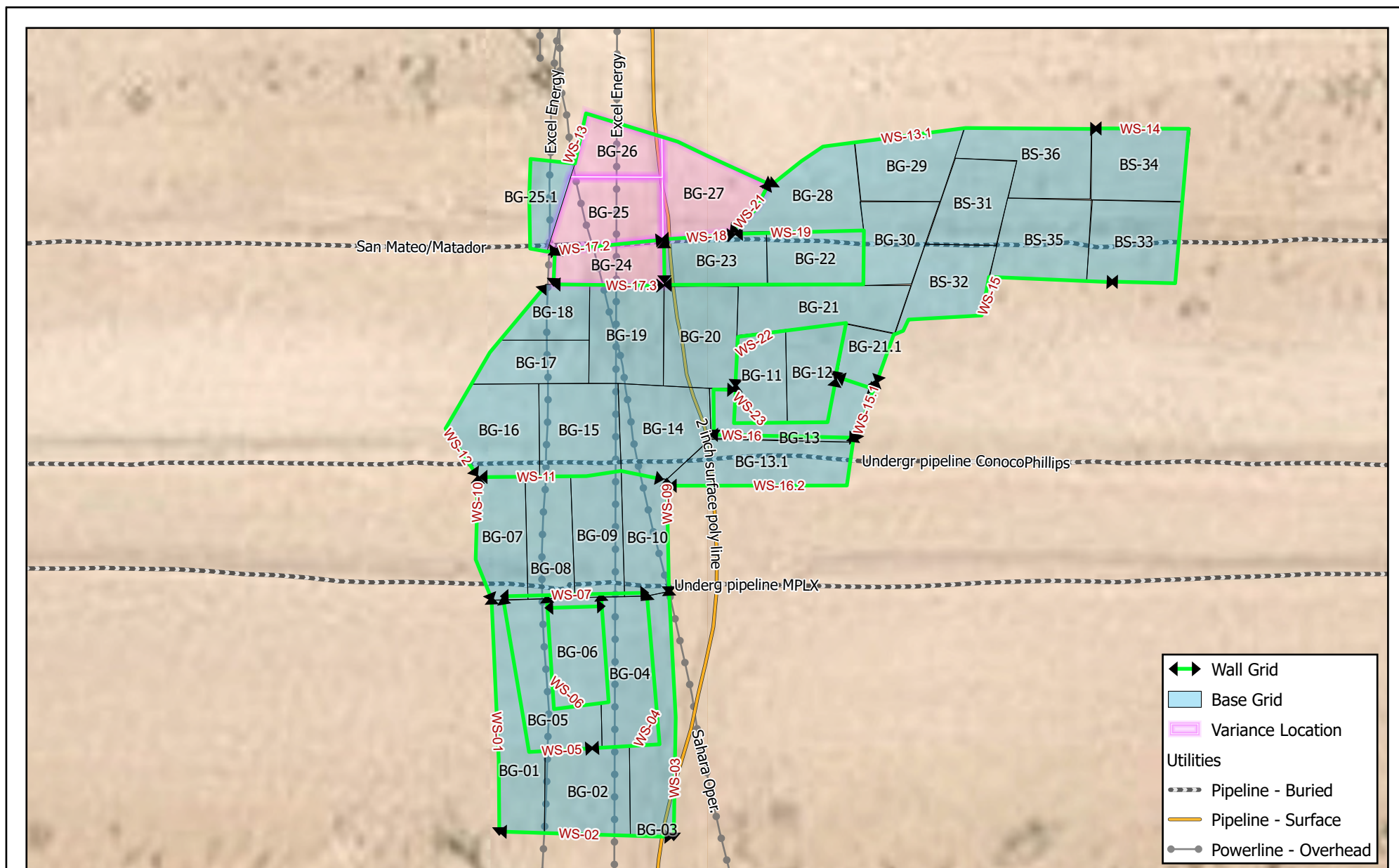
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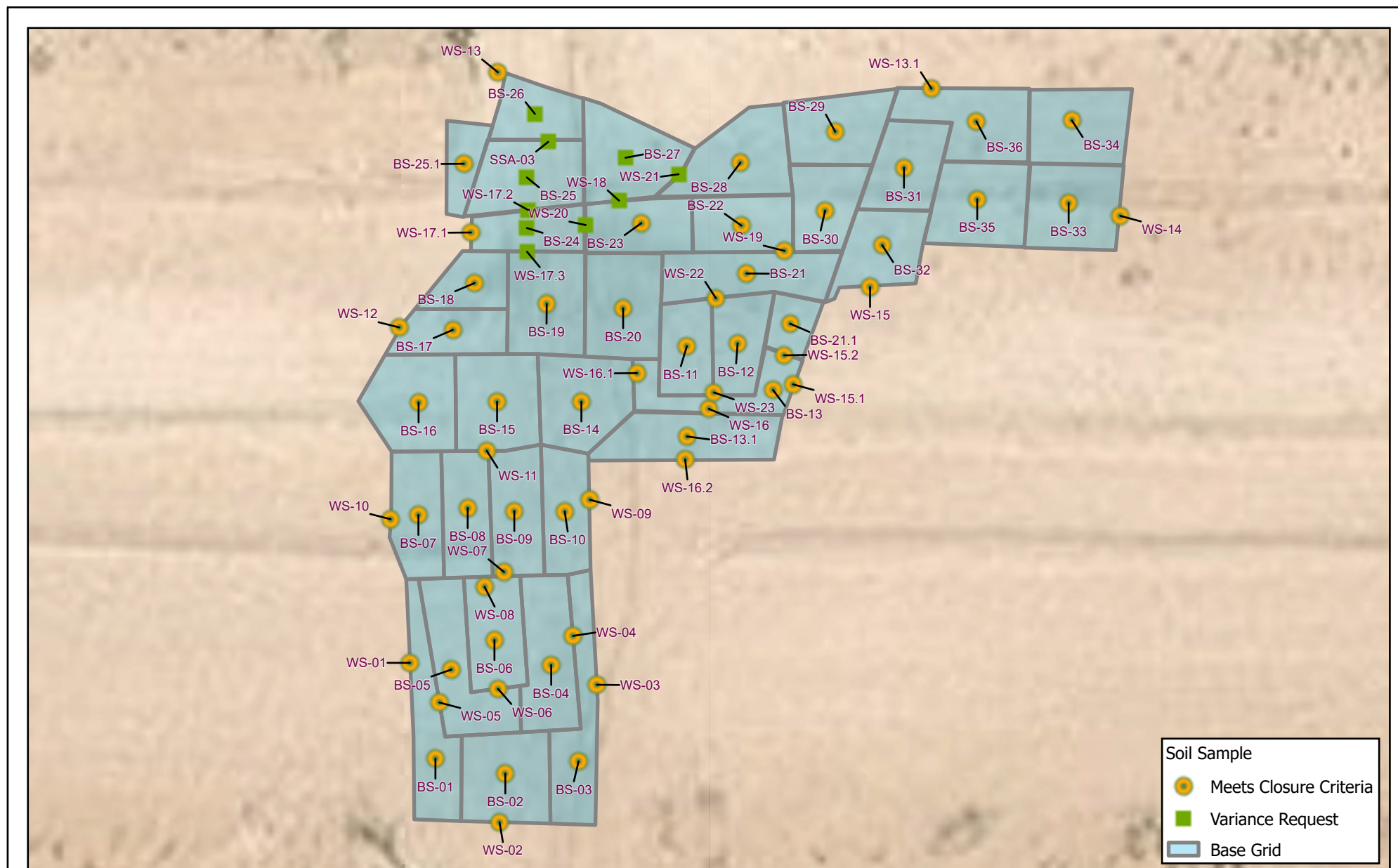
Sahara Operating

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

Note: Georeferenced image from Esri, 2024. Site features from GPS, Vertex, 2024.

VERSATILITY. EXPERTISE.





TABLES

Client Name: Sahara Operating Company

Site Name: Russell Federal 19-30

NMOCD Tracking # : nAPP2331855166

Project #: 24E-04568

Lab Reports: H236155, H250411, H250551, H251187, H251653, H251969

Table 1.Confirmatory Laboratory Results										
Sample Description			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)			
DTW > 100 ft										
Characterization Sample										
SSA-03	0-2	November 7, 2023	ND	ND	ND	ND	ND	ND	ND	640
	2-4	November 7, 2023	ND	ND	ND	ND	ND	ND	ND	592
	4.3	November 7, 2023	ND	ND	ND	ND	ND	ND	ND	704
Base Samples										
BS-01	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS-02	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	80
BS-03	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	48
BS-04	8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	240
BS-05	8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS-06	12	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	128
BS-07	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,160
BS-08	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,400
BS-09	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	11,000
BS-10	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	6,000
BS-11	10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	384
BS-12	10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	352
BS-13	6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	992
BS-13.1	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	7330
BS-14	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	10,800
BS-15	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	5,280
BS-16	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS-17	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS-18	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,880
BS-19	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	7,520
BS-20	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	14,600
BS-21	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,500
BS-21.1	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	240
BS-22	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,260
BS-23	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,040
BS-24	3	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,640
BS-25	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	9,800
BS-25.1	1	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	128
BS-26	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	3,280
BS-27	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	5,860
BS-28	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	672
BS-29	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,240
BS-30	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,960
BS-31	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	1170
BS-32	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	1120
BS-33	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	1340
BS-34	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	656
BS-35	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	3400
BS-36	4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	1020

Client Name: Sahara Operating Company

Site Name: Russell Federal 19-30

NMOCD Tracking # : nAPP2331855166

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Sample Description			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)				
DTW > 100 ft										
Wall Samples										
WS-01	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
WS-02	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	48
WS-03	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	80
WS-04	4-8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-05	4-8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-06	8-12	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	224
WS-07	5-8	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	6240
WS-08	9	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	4400
WS-08	11	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	5440
WS-08	12	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	1020
WS-08	12.5	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	416
WS-09	0-5	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-10	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	560
WS-10	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	400
WS-11	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	8,800
WS-12	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	128
WS-13	0-1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,960
	0-1	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	240
WS-13.1	0-4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	64
WS-14	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,600
	0-4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	160
WS-15	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	896
WS-15	0-4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	480
WS-15.1	0-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	272
WS-15.2	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	128
WS-16	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,480
WS-16	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,400
WS-16.1	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	13,400
WS-16.2	0-4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	304
WS-17	0-3	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,330
WS-17.1	0-3	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	336
WS-17.2	1-3	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	800
WS-17.3	3-4	April 1, 2025	ND	ND	ND	ND	ND	ND	ND	2840
WS-18	1-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	3,920
WS-19	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	6,260
WS-20	3-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	9,060
WS-21	1-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	10,000
WS-22	6-10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	896
WS-23	6-10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	320
Backfill Samples										
Topsoil Backfill-01	0	March 17, 2025	ND	ND	ND	ND	ND	ND	ND	16
Caliche Backfill-01	0	March 17, 2025	ND	ND	ND	ND	ND	ND	ND	128

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

Bold and green shaded indicates variance request

Grey shaded indicates soil excavated/removed

APPENDIX A – Variance Request

From: [Velez, Nelson, EMNRD](#)
To: [Andrew Parker](#)
Cc: [Bratcher, Michael, EMNRD](#); blm_nm_cfo_spill@blm.gov; shannon@saharaoper.com; rob@saharaoper.com
Subject: Re: [EXTERNAL] FW: Russell Fed 19-30 Extension Request (nAPP2331855166)
Date: Tuesday, March 11, 2025 3:11:38 PM
Attachments: [image001.png](#)
[Outlook-loucwb13.png](#)

Caution: This email is from an external sender. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Good afternoon Andrew,

Thank you for the correspondence and please except my apology for the late response.

60-day time extension request and variance to determine depth to water is approved.
Remediation Due date updated to May 9, 2025.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

The OCD requires a copy of all correspondence relative to remedial activities be included in all proposals and/or final closure reports. Correspondence required to be included in reports may include, but not limited to, notifications for liner inspections, sample events, spill/release/fire, and request for time extensions or variances.

Regards,

Nelson Velez • Environmental Specialist - Adv
Environmental Bureau | EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87410
(505) 469-6146 | nelson.velez@emnrd.nm.gov
<http://www.emnrd.nm.gov/oed>



From: Andrew Parker <aparker@vertexresource.com>
Sent: Friday, March 7, 2025 9:58 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>; Enviro, OCD, EMNRD
<OCD.Enviro@emnrd.nm.gov>

Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; blm_nm_cfo_spill@blm.gov <blm_nm_cfo_spill@blm.gov>; shannon@saharaoper.com <shannon@saharaoper.com>; rob@saharaoper.com <rob@saharaoper.com>
Subject: RE: [EXTERNAL] FW: Russell Fed 19-30 Extension Request (nAPP2331855166)

Mr. Velez,

On the behalf of Sahara Operating, Vertex Resource Services, submits the attached extension and variance request for the Russell Federal 19-30 release (nAPP2331855166). Working around the buried pipelines, overhead powerlines, and the hard caliche rock has significantly reduced the time required to complete the remediation. Furthermore, recent depth-to-water data was discovered showing that groundwater is greater than 110-feet below ground surface. The attached includes a request for NMOCD to accept this data with a revision to the Closure Criteria concentrations per 19.15.29 NMAC.

Thank you,

Andrew Parker
Senior Project Manager
Vertex Resource Services Inc.
3101 Boyd Drive,
Carlsbad, NM 88220

P 575.689.7007

www.vertex.ca

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From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Tuesday, December 3, 2024 1:09 PM
To: Andrew Parker <aparker@vertexresource.com>; Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; blm_nm_cfo_spill@blm.gov; shannon@saharaoper.com; rob@saharaoper.com
Subject: Re: [EXTERNAL] FW: Russell Fed 19-30 Extension Request (nAPP2331855166)

Caution: This email is from an external sender. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Good day Andrew,

Your time extension request for 90-days is approved. Remediation Due date has been updated to March 10, 2025.

Please keep a copy of this communication for inclusion within the appropriate report



March 7, 2025

NM Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: Remediation Extension Request
Incident ID: nAPP2331855166
Russell Fed 19-30 Release

Mr. Velez,

On the behalf of Sahara Operating, Vertex Resource asks for a 60-day extension for the remediation of the Russell Federal 19-30 Release (nAPP2331855166). The closure report is due March 10, 2025. The proposed due date is May 9, 2025.

Excavation around the buried pipelines and underneath the powerlines has significantly slowed the time needed to remediate the impacted soils. A very hard caliche was also encountered at 1 to 12 feet below ground surface, further slowing the excavation process. Excavation of impacted material within the hard caliche and below the powerlines has proven extremely difficult and dangerous and is further discuss below. Exhibit 1 shows the current excavation extent relative to soil samples collected to date. Soil sample symbology noting either "Meeting Closure Criteria" or "Exceeding Closure Criteria" is based upon the proposed revisions to the Closure Criteria concentrations presented below. Wall and base samples represent a 5-point composite not representing an area greater than 200 sq ft. Table 1 is a summary of analytical.

We respectfully ask NMOCD to revise the Closure Criteria per the approved remediation plan to accommodate a recently discovered exploratory boring located 712 feet north of the release. The boring was drilled by ENSOLUM on February 15, 2023 for Incident Number NAPP2215827276. The total depth of the boring was 110 feet and was left open for 72-hours, after which the boring was gauged for the presence of groundwater. No groundwater was detected. The borehole log (reproduced from the ENSOLUM report) and the OSE permit are attached. Exhibit 2 shows the location of the borehole relative to the release.



Incident #: nAPP2331855166
Russell Federal 19-30 Release

The revised proposed Closure Criteria is defined as:

- Upper 4-feet
 - Chloride < 600 mg/kg
 - TPH (GRO + DRO + MRO) < 100 mg/kg
 - BTEX < 50 mg/kg
 - Benzene < 10 mg/kg
- Below 4-feet
 - Chloride < 20,000 mg/kg
 - TPH (GRO + DRO + MRO) < 2,500 mg/kg
 - TPH (GRO + DRO) < 1,000 mg/kg
 - BTEX < 50 mg/kg
 - Benzene < 10 mg/kg


Furthermore, we respectfully ask for a variance to the Closure Criteria at the northwest corner where base samples exceed Closure Criteria. Excavation within the variance request area is hindered by the very hard caliche at 1-foot, the buried powerlines, and overhead powerlines. A mini-excavator and backhoe equipped with a hammer could not penetrate the hard caliche. Mobilizing a trackhoe was unsuccessful due to the safe working distance offset to the Sahara Operating powerlines and the energized EXCEL Energy powerlines 3-feet above the Sahara Operating powerlines. Photo documentation showing the location of overhead powerlines is presented in Attachment A.

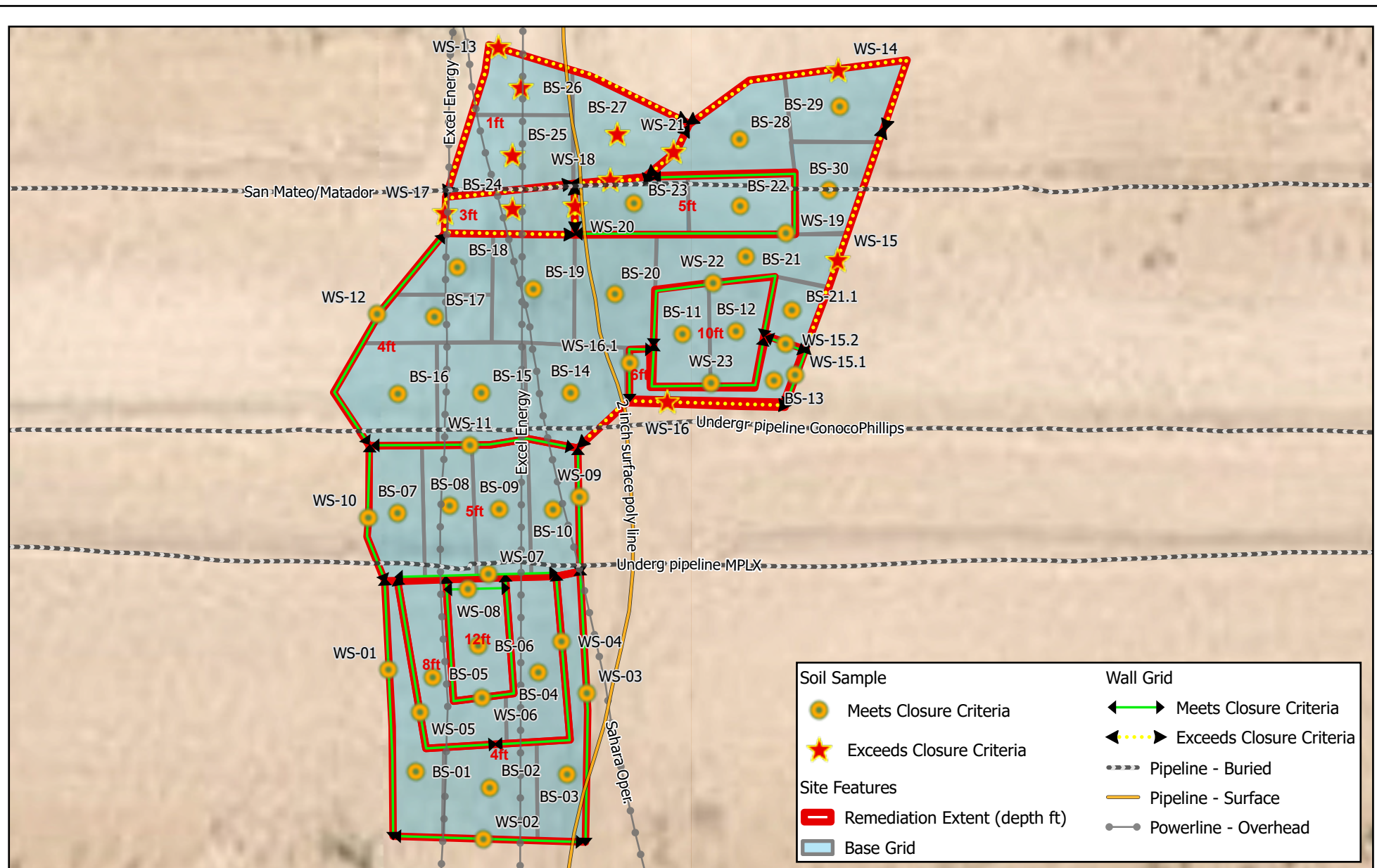
The variance request is protective of groundwater as

- Vertical delineation shows impacted soils do not exceed the most stringent Closure Criteria at 12-feet below ground surface.
- Caliche rock will continue to retard downward vertical migration of chlorides (chemical of concern)
- Depth-to-water is greater than 110-feet.

Remediation will continue along the northeastern, eastern, and southeastern walls (WS-14, WS-15, and WS-16 respectively).

Thank you for your consideration,


Andrew Parker
Senior Project Manager
Vertex Resource Services Inc
c: (575) 689-7007



NAD 1983 StatePlane New Mexico East FIPS 3001 Feet
 0 10 20 ft
 Map Center:
 Lat/Long: 32.025766°N, 103.716959°W

Date: Mar 06/25



Remediation Extent
Russell Federal 19-30
(nAPP2331855166)

Exhibit:

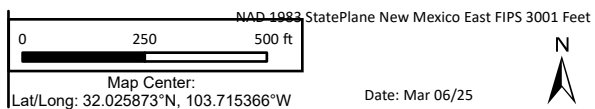
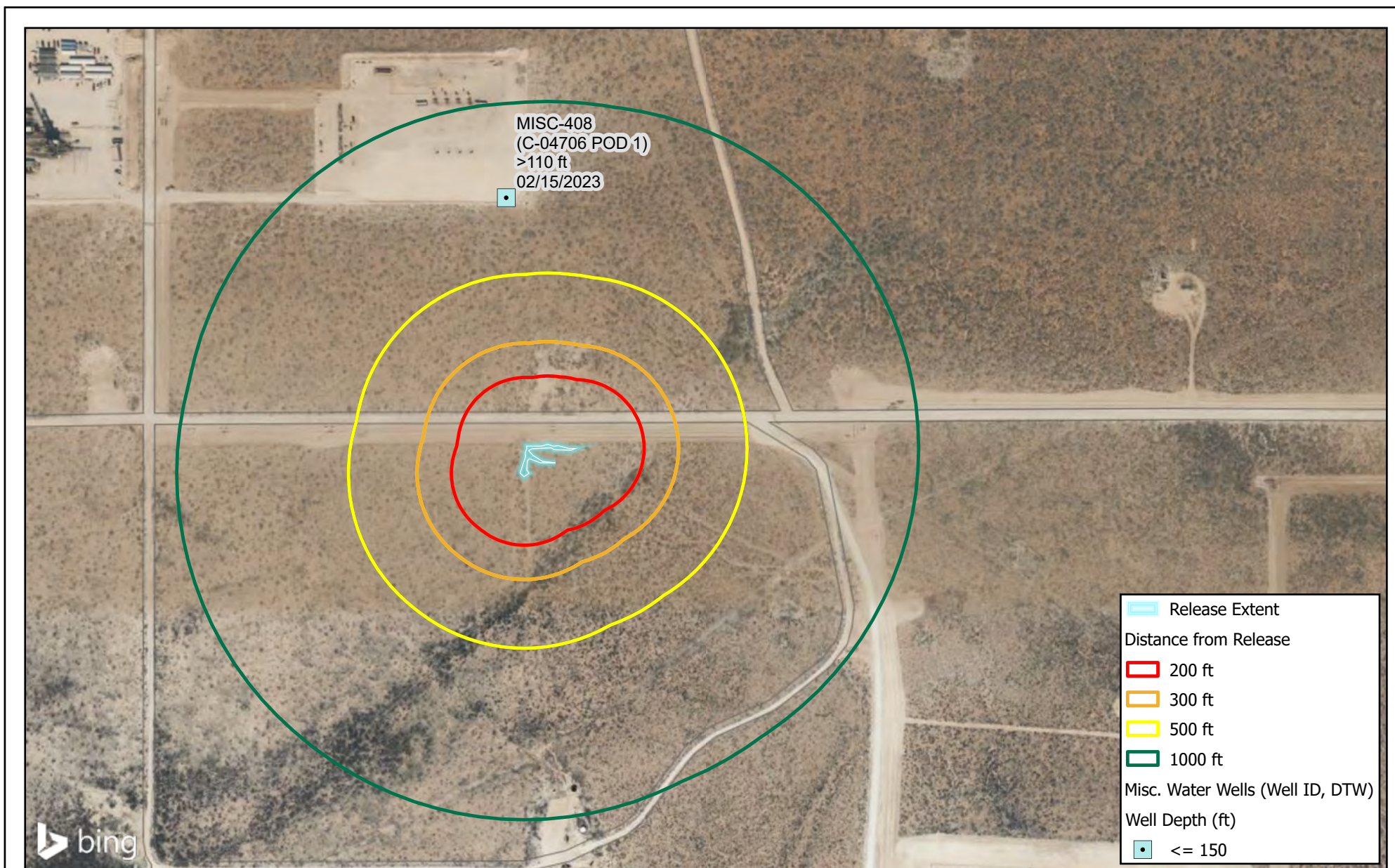
1

Sahara Operating

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

Note: Georeferenced image from Esri, 2024. Site features from GPS, Vertex, 2024.

VERSATILITY. EXPERTISE.



Depth-to-Water
Russell Federal 19-30
(nAPP2331855166)

Exhibit:

2

Sahara Operating

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

Note: Georeferenced image from Esri, 2024. Site features from GPS, Vertex, 2024.

VERSATILITY. EXPERTISE.

Client Name: Sahara Operating Company
 Site Name: Russell Federal 19-30
 NMOCD Tracking # : nAPP2331855166
 Project #: 24E-04568
 Lab Reports: H250411, H250551 and H251187

Table 1.Confirmatory Laboratory Results										
Sample Description			Petroleum Hydrocarbons							Inorganic Chloride Concentration
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)				
DTW > 100 ft										
Base Samples										
BS-01	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS-02	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	80
BS-03	4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	48
BS-04	8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	240
BS-05	8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS-06	12	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	128
BS-07	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,160
BS-08	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,400
BS-09	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	11,000
BS-10	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	6,000
BS-11	10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	384
BS-12	10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	352
BS-13	6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	992
BS-14	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	10,800
BS-15	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	5,280
BS-16	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS-17	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS-18	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,880
BS-19	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	7,520
BS-20	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	14,600
BS-21	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,500
BS-21.1	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	240
BS-22	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,260
BS-23	5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,040
BS-24	3	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,640
BS-25	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	9,800
BS-26	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	3,280
BS-27	1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	5,860
BS-28	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	672
BS-29	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,240
BS-30	4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	2,960
Wall Samples										
WS-01	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	32
WS-02	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	48
WS-03	0-4	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	80
WS-04	4-8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-05	4-8	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-06	8-12	January 21, 2025	ND	ND	ND	ND	ND	ND	ND	224
WS-07	5-8	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	6240
WS-08	9	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	4400
WS-08	11	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	5440
WS-08	12	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	1020
WS-08	12.5	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	416
WS-09	0-5	January 29, 2025	ND	ND	ND	ND	ND	ND	ND	208
WS-10	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	560
WS-10	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	400
WS-11	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	8,800
WS-12	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	128


Client Name: Sahara Operating Company
 Site Name: Russell Federal 19-30
 NMOCD Tracking # : nAPP2331855166
 Project #: 24E-04568
 Lab Reports: H250411, H250551 and H251187

Table 1.Confirmatory Laboratory Results																	
Sample Description			Petroleum Hydrocarbons							Inorganic							
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable												
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration							
											(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
											DTW > 100 ft						
WS-13	0-1	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,960							
WS-14	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,600							
WS-15	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	896							
WS-15.1	0-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	272							
WS-15.2	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	128							
WS-16	0-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,480							
WS-16	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	4,400							
WS-16.1	4-6	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	13,400							
WS-17	0-3	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	1,330							
WS-18	1-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	3,920							
WS-19	4-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	6,260							
WS-20	3-5	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	9,060							
WS-21	1-4	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	10,000							
WS-22	6-10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	896							
WS-23	6-10	February 24, 2025	ND	ND	ND	ND	ND	ND	ND	320							

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

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

								Sample Name: BH01		Date: 02/15/2023					
								Site Name: Zia Hills 19-1							
								Incident Number: NAPP2215827276							
								Job Number: 03D2024049							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J. Falcomata		Method: Air Rotary					
Coordinates: 32.027844, -103.717185								Hole Diameter: 6"		Total Depth: 110'					
Comments: Soil boring was advanced to a total depth of 110' bgs. No water was observed within the soil boring after at least 72 hours. On 11/14/2022 the soil boring was plugged and abandoned using hydrated bentonite chips.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
D	-	-	N	-	-	10	GW	WELL GRADED GRAVEL W/ SAND: very coarse to coarse to medium grained, tan to light brown, no odor.							
D	-	-	N	-	-	20	SM	SILTY SAND W/ GRAVEL: very fine to fine to medium grained, tan to slightly reddish brown, no odor.							
D	-	-	N	-	-	30	SM	SILTY SAND: very fine to fine grained, tan to light brown, no odor.							
M	-	-	N	-	-	40	SM	SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.							
M	-	-	N	-	-	50	SM	SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.							
D	-	-	N	-	-	60	SM	SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.							
M	-	-	N	-	-	70	SM	SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.							
M	-	-	N	-	-	80	SP-SC	POORLY GRADED SAND W/ CLAY: very fine grained, medium to dark brown, slightly damp, no odor.							
M	-	-	N	-	-	90	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.							
M	-	-	N	-	-	100	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.							
M	-	-	N	-	-	110	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.							
Total Depth @ 110 feet bgs															



WELL PLUGGING PLAN OF OPERATIONS



NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: BH01

Name of well owner: ConocoPhillips Company

Mailing address: 600 West illinois Ave County: _____

City: Midland State: Texas Zip code: 79701

Phone number: 575-988-2043 E-mail: charles.r.beauvais@conocophillips.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: West Texas Drilling Services

New Mexico Well Driller License No.: WD #1184 Expiration Date: 10/31/2023

IV. WELL INFORMATION: ☐ Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 1 min, 40.55 sec
Longitude: 103 deg, 43 min, 1.84 sec, NAD 83

2) Reason(s) for plugging well(s):

Soil Boring

OSE 017 FEB 7 2023 PM 1:10

3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? NA If yes, provide additional detail, including analytical results and/or laboratory report(s): _____

5) Static water level: >100 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 110 feet

- 7) Inside diameter of innermost casing: 2 inches.
- 8) Casing material: Temporary PVC SCH 40
- 9) The well was constructed with:
☐ an open-hole production interval, state the open interval: NA
☐ a well screen or perforated pipe, state the screened interval(s): NA
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA
- 11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? If yes, please describe:
- 12) Has all pumping equipment and associated piping been removed from the well? NA If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING: ☐ If plugging method differs between multiple wells on same site, a separate form must be completed for each method.

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The temporary 2" well materials will be removed. If no water is encountered, drill cutting will be used to ten feet below ground surface and plugged to surface with hydrated bentonite. If groundwater is encountered the boring will be plugged, tremie from bottom to a slurry of Portland Type 1/II cement in lifts
- 2) Will well head be cut-off below land surface after plugging? NA

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: 287 18.0 GAL
- 4) Type of Cement proposed: Type I/II
- 5) Proposed cement grout mix: <6.0 gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: batch-mixed and delivered to the site
X mixed on site

OSE DTI FEB 7 2023 PM 1:10

- 7) Grout additives requested, and percent by dry weight relative to cement:

N/A

- 8) Additional notes and calculations:

NA

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

NA

VIII. SIGNATURE:

I, Kalei Jennings, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Kalei Jennings

02/06/2023

Signature of Applicant

Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

☒

Approved subject to the attached conditions.

☐

Not approved for the reasons provided on the attached letter.

OCD DTI FEB 7 2023 #ML103

Witness my hand and official seal this 15th day of February, 2023.



Mike A. Hamman, P.E., New Mexico State Engineer

By:

Samantha Davis
Samantha Davis

Water Resources Professional II

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)	NA	NA	0
Bottom of proposed interval of grout placement (ft bgl)	NA	NA	100
Theoretical volume of grout required per interval (gallons)	NA	NA	287
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement	NA	NA	<6.0
Mixed on-site or batch-mixed and delivered?	NA	NA	onsite
Grout additive 1 requested	NA	NA	NA
Additive 1 percent by dry weight relative to cement	NA	NA	NA
Grout additive 2 requested	NA	NA	NA
Additive 2 percent by dry weight relative to cement	NA	NA	NA

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TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)	NA	NA	0
Bottom of proposed sealant of grout placement (ft bgl)	NA	NA	10
Theoretical volume of sealant required per interval (gallons)	NA	NA	26
Proposed abandonment sealant (manufacturer and trade name)	NA	NA	Baroid Hole Plug

QSE DJT FEB 7 2023 PM 1:10



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

1900 West Second St.
 Roswell, New Mexico 88201
 Phone: (575) 622-6521
 Fax: (575) 623- 8559

Applicant has identified wells, listed below, to be plugged.
 West Texas Drilling Services (WD-1184) will perform the plugging.

Permittee: ConocoPhillips Company
 NMOSE Permit Number: C-4706-POD1

NMOSE File	Casing diameter (inches)	Well depth (feet bgl)	Approximate static water level (feet bgl)	Latitude	Longitude
C4706-POD1	2" Soil Boring	110	100	32° 01' 40.55"	103° 43' 1.84"

Specific Plugging Conditions of Approval for Well located in Eddy County, New Mexico.

1. Water well drilling and well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.
2. Ground Water encountered: The total Theoretical volume of sealant required for abandonment of soil boring well is approximately 18.0 gallons. Total minimum volume of necessary sealant shall be calculated upon sounding the actual pluggable depth of well, which is estimated at 110 feet.
3. Dry Hole: The total Theoretical volume of sealant required for abandonment of soil boring well is approximately 16.3 gallons. Total minimum volume of necessary sealant shall be calculated upon sounding the actual pluggable depth of well, which is estimated at 10 feet.
4. **Ground Water encountered:** Type I/II Portland cement mixed with 5.2 to 6.0 gallons of fresh water per 94-lb sack of cement is approved for the plugging the well.
5. **Dry Hole:** (a) Drill cuttings up to ten feet of land surface. (b) 10 feet to 0 feet – Hydrated bentonite. The bentonite shall be hydrated separately with its required increments of water prior to being mixed into the cement slurry.

6. Sealant shall be placed by pumping through a tremie pipe extended to near well bottom and kept below top of the slurry column as the well is plugged from bottom-upwards in a manner that displaces the standing water column upwards from below. Tremie pipe may be pulled as necessary to retain minimal submergence in the advancing column of sealant.
7. Should cement "shrinks-back" occur in the well, use of a tremie for topping off is required for cement placement deeper than 20 feet below land surface or if water is present in the casing. The approved sealant for topping off is identified in condition 3 & 4 of these Specific Conditions of Approval.
8. Any open annulus encountered surrounding the casing shall also be sealed by the placement of the approved sealant. When plugging shallow wells with no construction or environmental concerns, and if the well record on a well to be plugged shows a proper 20-foot annular seal, a plugging plan can propose the use of clean fill material to a nominal 30 feet bgs, then placing an OSE approved sealant to surface. Lacking that information, we would require an excavation of at least 2-feet which shall then be filled in its entirety with sealant to surface.
9. Should the NMED, or another regulatory agency sharing jurisdiction of the project authorize, or by regulation require a more stringent well plugging procedure than herein acknowledged, the more-stringent procedure should be followed. This, in part, includes provisions regarding pre-authorization to proceed, contaminant remediation, inspection, pulling/perforating of casing, or prohibition of free discharge of any fluid from the borehole during or related to the plugging process.
10. NMOSE witnessing of the plugging of the shallow well will not be required.
11. Any deviation from this plan must obtain an approved variance from this office prior to implementation.
12. A Well Plugging Record itemizing actual abandonment process and materials used shall be filed with the State Engineer within 30 days after completion of well plugging. For the plugging record, please resurvey coordinate location for well and note coordinate system for GPS unit. Please attach a copy of these plugging conditions.

The NMOSE Well Plugging Plan of Operations is hereby approved with the aforesaid conditions applied.

Witness my hand and seal this 15th day of February, 2023

Mike A. Hamman, P.E. State Engineer



By: _____

A handwritten signature in blue ink, appearing to read "S. Davis", is written over a horizontal line.

Samantha Davis
Water Resources Professional II



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

Mike A. Hamman, P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

February 15, 2023

ConocoPhillips Company
600 West Illinois Ave
Midland, Texas 79701

RE: Well Plugging Plan of Operations for well no. C-4706-POD1

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced well subject to the attached Conditions of Approval. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer. subject to the attached Conditions of Approval.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

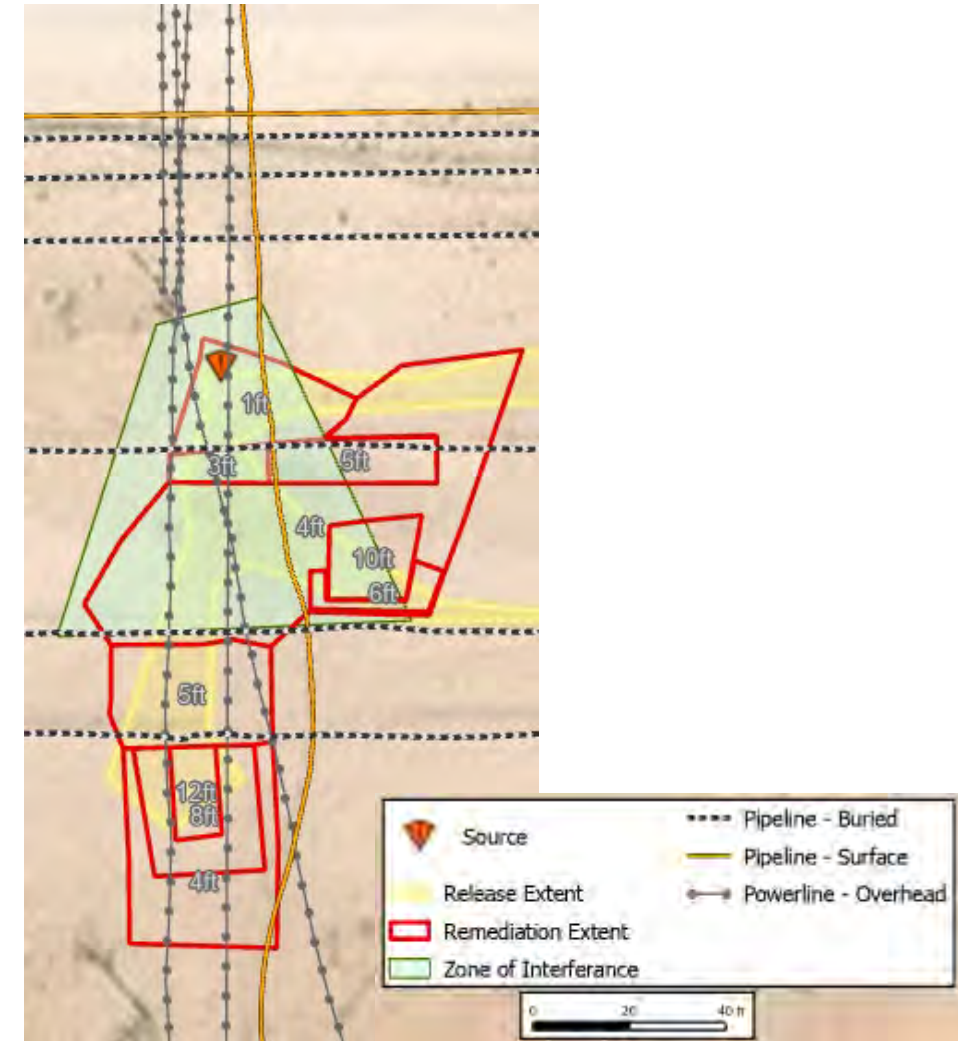
Sincerely,

A handwritten signature in blue ink, appearing to read "Samantha Davis", written over a horizontal line.

Samantha Davis
Water Resources Professional II

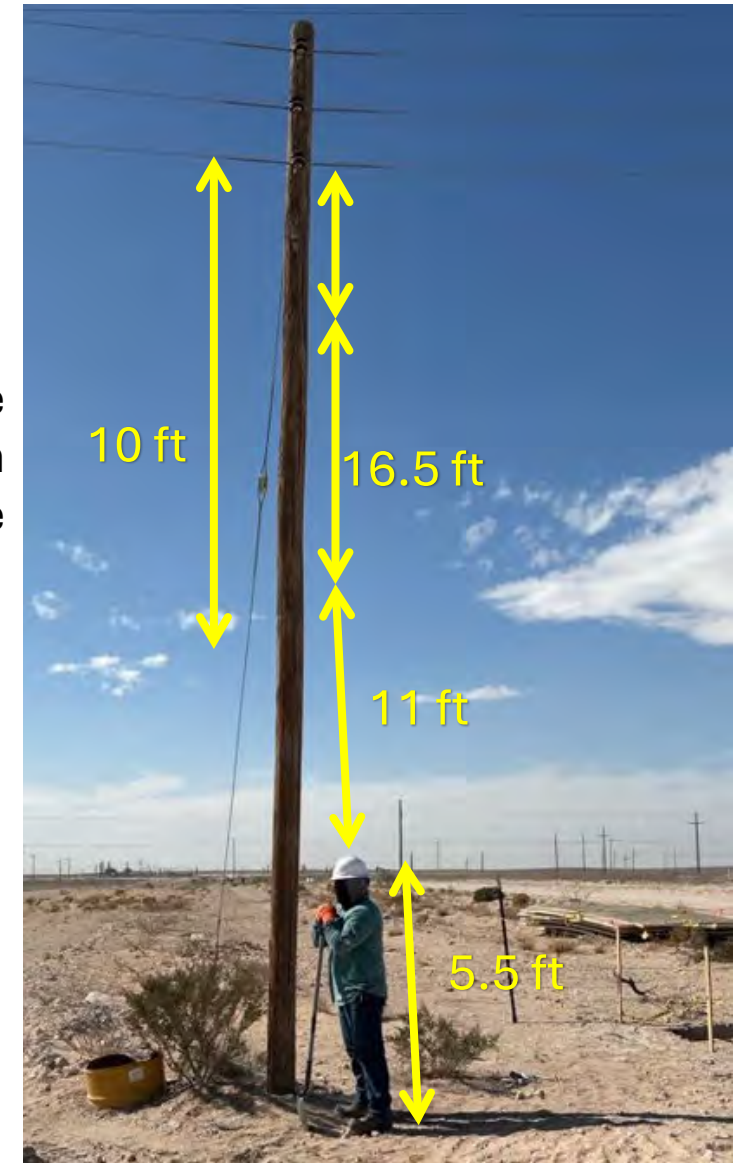
Variance Request Presentation

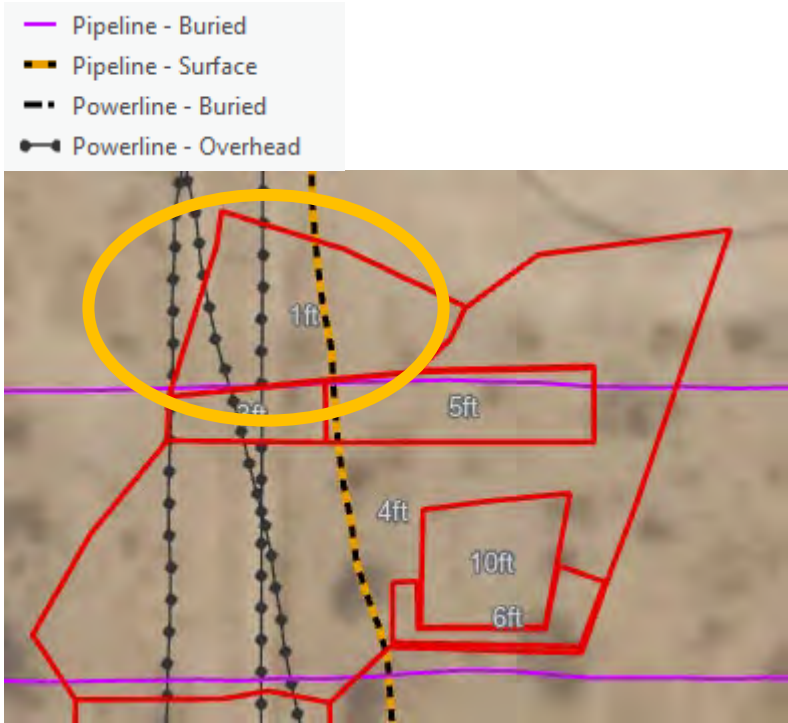
- Overhead Powerlines overlying Buried Pipelines
- Very Hard Caliche at 1 foot below ground surface





Sahara Operating Line
10-ft Setback from
Sahara Operating Line





Northwestern Variance Request Area



North Central 5 ft Excavation Area.

- 0-1 ft topsoil
- 2-5 ft hard caliche/rock
- Excavated via trackhoe



Descriptive Photo - 2
Viewing Direction: West
Rock encountered on eastern side of excavation at 10ft
Created: 5/15/2025 11:13:27 AM
Lat: 33.025772, Long: -103.718624

Caliche rock at 10 ft depth





San Mateo line exposed on eastern edge of excavation. Wall where sampling was taken



Rock surrounding San Mateo line



Large rock excavated



Excavation extent viewing NE from SW corner



Excavation from NE edge viewing west.

APPENDIX B – Daily Field Reports

Daily Site Visit Report



Field Notes

- 10:43** Completed JSAs and conducted safety meetings with Polaris, Flex, Matador/San Mateo, ConocoPhillips, and MPLX/Marathon personnel. On site to identify and hydrovac buried lines.
- 10:52** Matador/San Mateo representative confirmed line location and communicated that they will need to be on site for hydrovac and excavation within 10 feet of the line. The north side of the layflat lines is currently inaccessible due to surface line interference. The line will be accessible on Monday January 20th and representative is scheduled to be on location.
- 12:42** ConocoPhillips representative confirmed line locations and will need to be present for all ground disturbance within 25 feet of unspotted COP lines. Hydrovac will spot lines prior to excavation. At least one pothole along line must be 3x3 feet. South COP line is within 25 feet of the MPLX line. Ground disturbance threshold is within 12 feet once lines have been daylighted with hydrovac.
- 11:01** Marathon/MPLX representative identified line location and will need to be on site for all excavation work within 12 feet of their line if it is not completely exposed. Exposure of the line and 2 feet on either side for the length of the initial excavation allows equipment work to 24 inches of the exposed line.
- 13:21** Flex plans to build an "air bridge" over the infrastructure immediately south of the lease road to allow access to the north excavation. The materials are to be fabricated immediately and hauled tomorrow, Tuesday January 15. The line crossing should be completed on that date.
- 13:17** The 5 lay flat lines running east-west across the release area will not have any ground disturbance within 8 feet to north and south to maintain stability. Large spools have been placed along the lines. It is possible they will be removed in the near future.
- 13:55** Hydrovac completed spotting ConocoPhillips southernmost line per instructions from representative. The hydrovac truck and COP representative will be on site again Friday to spot the line north of the planned north excavation and oversee excavation close to the southernmost line. The COP representative will also be on site Monday for excavation and hydrovac in proximity to the Matador/San Mateo line. The hydrovac left to dispose of material and refill water after completion of COP spotting.
- 15:23** Once hydrovac returned from dumping and refilling water they started removing material around the MPLX line. Objective was to remove material 2 feet off of either edge of pipeline.
- 15:59** Hydrovac crew started spotting MPLX line and will return to finish the following morning.

Next Steps & Recommendations

- 1 Continue hydrovac of MPLX line the following morning.
- 2 Start excavation south of MPLX line after air bridge is built.

Daily Site Visit Report



Site Photos

Viewing Direction: East



South of lay flat lines facing east. Hydrovac spotted southernmost ConocoPhillips line.

Viewing Direction: West



South of lay flat lines facing west. Hydrovac spotted southernmost ConocoPhillips line.

Viewing Direction: Southwest



Southwest of lease road facing southwest. ConocoPhillips pipeline within 25 feet of initial excavation area.

Viewing Direction: West



North of lay flat lines facing west. San Mateo/Matador pipeline inside north initial excavation area.



Daily Site Visit Report

Viewing Direction: East



North of lay flat lines facing east. San Mateo/Matador pipeline inside north initial excavation area.

Viewing Direction: West



South of lay flat lines facing west. Hydrovac started spotting MPLX line.

Viewing Direction: East



South of lay flat lines facing east. Hydrovac started spotting MPLX line.

Viewing Direction: Northeast



South of lay flat lines facing northeast. Hydrovac holes fenced.



Daily Site Visit Report

Client:	Sahara Operating Co.	Inspection Date:	1/16/2025
Site Location Name:	Russell Federal 19-30	Report Run Date:	1/17/2025 2:14 AM
Client Contact Name:		API #:	
Client Contact Phone #:			
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site 1/16/2025 7:49 AM

Departed Site 1/16/2025 4:13 PM

Field Notes

- 9:37** Completed JSA on arrival. Conducted safety meeting with Flex work crew and discussed extension of excavation south. MPLX/Marathon representative scheduled to be on location later in the morning.
- 14:31** Swept potential ground disturbance areas with magnetic locator prior to ground disturbance. Flex started expanding excavation to 4 feet bgs south.
- 18:26** Once MPLX/Marathon representative arrived Flex increased depth of excavation to 8 feet bgs. Field screening results of excavation at 8 feet bgs exceeded 600 ppm chloride at center of excavation base.
- 18:31** Flex increased depth of center of excavation to 10 feet bgs. Field screening results exceeded 600 ppm chloride. Debris had not been fully removed from excavation surface. Work crew will remove remaining material from excavation surface the following morning and fresh samples will be collected.
- 18:32** Continue excavation.

Next Steps & Recommendations

1

Daily Site Visit Report



Site Photos

Viewing Direction: Southeast



South of lay flat lines facing southeast.
Excavation to 8 feet bgs.

Viewing Direction: Southwest



South of lay flat lines facing southwest.
Excavation to 8 feet bgs.

Viewing Direction: Northwest



South of lay flat lines facing northwest.
Excavation to 8 feet bgs.

Viewing Direction: North



10' excavation. Facing North

Daily Site Visit Report



Site Photos

Viewing Direction: West



Swept work area using a magnetic locator.

Viewing Direction: Northwest



Removed material placed on liner

Viewing Direction: Northeast



Southwest corner of excavation facing northeast.

Viewing Direction: Northwest



Southeast corner of excavation facing northwest



Daily Site Visit Report

Viewing Direction: West



Excavation progress between ConocoPhillips and MPLX/Marathon pipelines.

Viewing Direction: South



Area near MPLX pipeline that was dug using hand tools.

Viewing Direction: South



Area near MPLX pipeline that was dug using hand tools.

Viewing Direction: South



Removed material placed on liner



Daily Site Visit Report

Viewing Direction: South



North end of south excavation facing south.

Viewing Direction: Northwest



Removed material placed on liner

Daily Site Visit Report



Site Photos

Viewing Direction: East



Area where 2 lines are that excavation will resume

Viewing Direction: South



Wall will be dug out 2ft.

Viewing Direction: West



Large section of rock in excavation

Viewing Direction: North



Rock Hit at depth of 1 ft.



Daily Site Visit Report

Viewing Direction: Northwest



Rock being broken to extend excavation

Viewing Direction: Northwest



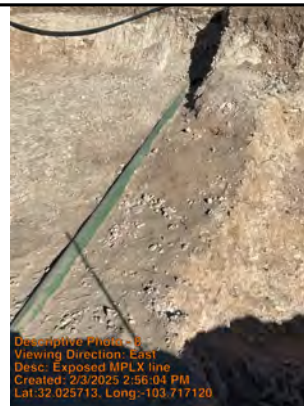
Rock encountered on eastern wall

Viewing Direction: South



Excavation continuing north of the Conoco line. Hard rock was again encountered

Viewing Direction: East



Exposed MPLX line



Daily Site Visit Report

Viewing Direction: Northeast



Using rock hammer to break up rock so that excavation can go down to 4 ft.

Viewing Direction: Southeast



Extent away from MPLX pipeline

Daily Site Visit Report



Site Photos

Viewing Direction: South



Sahara power lines fuse box. Power is still shut off

Viewing Direction: East



Eastern wall north of Conoco Phillips line

Viewing Direction: Northeast



Excavation following spill extent. Excavated down to 4ft

Viewing Direction: Southeast



Excavation North of Conoco line



Daily Site Visit Report

Viewing Direction: Northeast



Current extent of excavation

Viewing Direction: Southeast



Eastern wall where we will have to dig down and do benching to reach a depth of 6ft

Daily Site Visit Report



Site Photos

Viewing Direction: Southeast



Rock encountered at 3ft on Northside

Viewing Direction: Northwest



Large rock excavated

Viewing Direction: West



Section of western wall where it has washed in

Viewing Direction: North



North wall of excavation



Daily Site Visit Report

Viewing Direction: West



Section to be removed Friday covering San Mateo line

Daily Site Visit Report



Site Photos

Viewing Direction: South



WS-16 0-4 ft stepped out southward

Viewing Direction: South



WS-16 0-4 ft stepped out southward additional foot horizontally

Viewing Direction: West



WS-16 0-4 ft stepped out southward additional foot horizontally looking west

Viewing Direction: South



WS-16 0-4 ft stepped out southward one additional foot horizontally



Daily Site Visit Report

<p>Viewing Direction: West</p>  <p><small>Descriptive Photo - 5 Viewing Direction: West Desc: WS-16 0-4 ft stepped out southward one additional foot horizontally looking west Created: 5/16/2025 2:06:30 PM Lat:32.95992, Long:-103.716579</small></p>	<p>Viewing Direction: South</p>  <p><small>Descriptive Photo - 6 Viewing Direction: South Desc: WS-16 0-4 ft stepped out southward one additional 2 feet horizontally Created: 5/16/2025 2:07:01 PM Lat:32.95992, Long:-103.717016</small></p>
<p>WS-16 0-4 ft stepped out southward one additional foot horizontally looking west</p>	<p>WS-16 0-4 ft stepped out southward one additional 2 feet horizontally</p>
<p>Viewing Direction: West</p>  <p><small>Descriptive Photo - 7 Viewing Direction: West Desc: WS-16 0-4 ft stepped out southward one additional 2 feet horizontally looking west Created: 5/16/2025 2:07:13 PM Lat:32.95992, Long:-103.716579</small></p>	<p>Viewing Direction: East</p>  <p><small>Descriptive Photo - 8 Viewing Direction: East Desc: South Area to be backfilled Created: 5/16/2025 2:53:25 PM Lat:32.95992, Long:-103.717200</small></p>
<p>WS-16 0-4 ft stepped out southward one additional 2 feet horizontally looking west</p>	<p>South Area to be backfilled</p>



Daily Site Visit Report

Viewing Direction: Northeast



Northwest, north, northwest sections to be excavated

Viewing Direction: East



Wall excavated approximately 4 feet beyond ConocoPhillips line

Viewing Direction: North



Area with safety fencing in place

Daily Site Visit Report



Site Photos

Viewing Direction: South



Backfilling of south area

Viewing Direction: South



5 point composite sample of approx. 200 sq ft area BS-31 4ft

Viewing Direction: East



5 point composite sample of approx. 200 sq ft area BS-32 4ft





Viewing Direction: East



5 point composite sample of approx. 200 sq ft area BS-33 4ft



Daily Site Visit Report

<p>Viewing Direction: East</p>  <p>5 point composite sample of approx. 200 sq ft area BS-34 4ft</p>	<p>Viewing Direction: East</p>  <p>5 point composite sample of approx. 200 sq ft area BS-35 4ft</p>
<p>Viewing Direction: East</p>  <p>5 point composite sample of approx. 200 sq ft area BS-36 4ft</p>	<p>Viewing Direction: East</p>  <p>5 point composite sample of approx. 200 sq ft area BS-37 4ft</p>



Daily Site Visit Report

Client:	<u>Sahara Operating Co.</u>	Inspection Date:	<u>4/1/2025</u>
Site Location Name:	<u>Russell Federal 19-30</u>	Report Run Date:	<u>4/2/2025 6:44 PM</u>
Client Contact Name:	<u></u>	API #:	<u></u>
Client Contact Phone #:	<u></u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

Summary of Times

Arrived at Site 4/1/2025 10:00 AM

Departed Site 4/1/2025 2:15 PM

Field Notes

- 10:28** Arrived on site at 10:00 AM. Completed job safety assessment and paperwork. Met with construction contractors. Communication with line representatives.
Began confirmation sampling at 10:19 AM.
- 13:15** Collected confirmation samples and field screened. All screening resulted below criteria limits.
- 13:46** Prepared samples for lab per standards.

Next Steps & Recommendations

- 1 Confirm lab samples
- 2 Backfill



Daily Site Visit Report

Site Photos

Viewing Direction: North



5 point composite sample of approx. 200 or less sq ft
area WS-13 0-1ft





Viewing Direction: Northwest



5 point composite sample of approx. 200 or less sq ft
area BS-25.1 1ft




Daily Site Visit Report

<p>Viewing Direction: East</p>  <p><small>Descriptive Photo - 7 Viewing Direction: East Data: 5 point composite sample of approx. 200 or less sq ft area WS-16.2 0-4ft Created: 4/1/2025 11:51:42 AM Lat:32.025716, Long:-103.717029</small></p> <p>5 point composite sample of approx. 200 or less sq ft area WS-16.1 0-4ft</p>	<p>Viewing Direction: Southeast</p>  <p><small>Descriptive Photo - 8 Viewing Direction: Southeast Data: 5 point composite sample of approx. 200 or less sq ft area WS-15 0-4ft Created: 4/1/2025 11:57:02 AM Lat:32.025899, Long:-103.710019</small></p> <p>5 point composite sample of approx. 200 or less sq ft area WS-15 0-4ft</p>
<p>Viewing Direction: East</p>  <p><small>Descriptive Photo - 9 Viewing Direction: East Data: 5 point composite sample of approx. 200 or less sq ft area WS-14 0-4ft Created: 4/1/2025 11:50:32 AM Lat:32.025647, Long:-103.716890</small></p> <p>5 point composite sample of approx. 200 or less sq ft area WS-14 0-4ft</p>	<p>Viewing Direction: North</p>  <p><small>Descriptive Photo - 10 Viewing Direction: North Data: 5 point composite sample of approx. 200 or less sq ft area WS-13 0-4ft Created: 4/1/2025 11:55:21 AM Lat:32.025886, Long:-103.716846</small></p> <p>5 point composite sample of approx. 200 or less sq ft area WS-13.1 0-4ft</p>




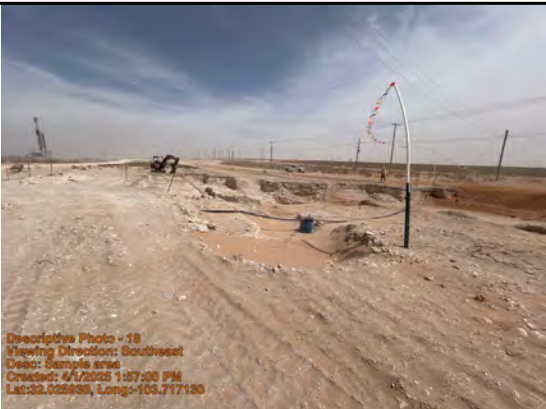


Daily Site Visit Report

<p>Viewing Direction: Northwest</p>  <p>Descriptive Photo - 11 Viewing Direction: Northwest Data: 5 point composite sample of approx. 200 or less sq ft area BS-31 4ft Created: 01/20/2025 11:00:13 AM Lat: 32.025885, Long: -103.710894</p> <p>5 point composite sample of approx. 200 or less sq ft area BS-31 4ft</p>	<p>Viewing Direction: East</p>  <p>Descriptive Photo - 12 Viewing Direction: East Data: 5 point composite sample of approx. 200 or less sq ft area BS-32 4ft Created: 01/20/2025 11:00:13 AM Lat: 32.025885, Long: -103.710894</p> <p>5 point composite sample of approx. 200 or less sq ft area BS-32 4ft</p>
<p>Viewing Direction: East</p>  <p>Descriptive Photo - 13 Viewing Direction: East Data: 5 point composite sample of approx. 200 or less sq ft area BS-33 4ft Created: 01/20/2025 11:00:46 AM Lat: 32.025894, Long: -103.710894</p> <p>5 point composite sample of approx. 200 or less sq ft area BS-33 4ft</p>	<p>Viewing Direction: East</p>  <p>Descriptive Photo - 14 Viewing Direction: East Data: 5 point composite sample of approx. 200 or less sq ft area BS-34 4ft Created: 01/20/2025 11:02:10 AM Lat: 32.025886, Long: -103.710894</p> <p>5 point composite sample of approx. 200 or less sq ft area BS-34 4ft</p>



Daily Site Visit Report

<p>Viewing Direction: East</p>  <p>5 point composite sample of approx. 200 or less sq ft area BS-35 4ft</p>	<p>Viewing Direction: West</p>  <p>5 point composite sample of approx. 200 or less sq ft area BS-36 4ft</p>
<p>Viewing Direction: North</p>  <p>Sample area</p>	<p>Viewing Direction: Southeast</p>  <p>Sample area</p>

Daily Site Visit Report



Remediation Site Photos

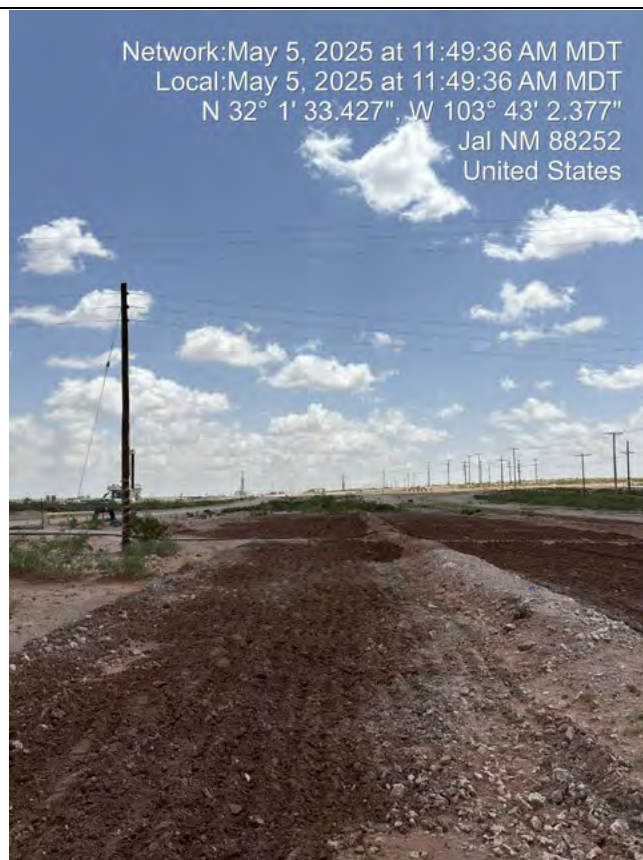


Photo 1: Northern third of remediation area viewing east from west edge. Lease access road at photo left.

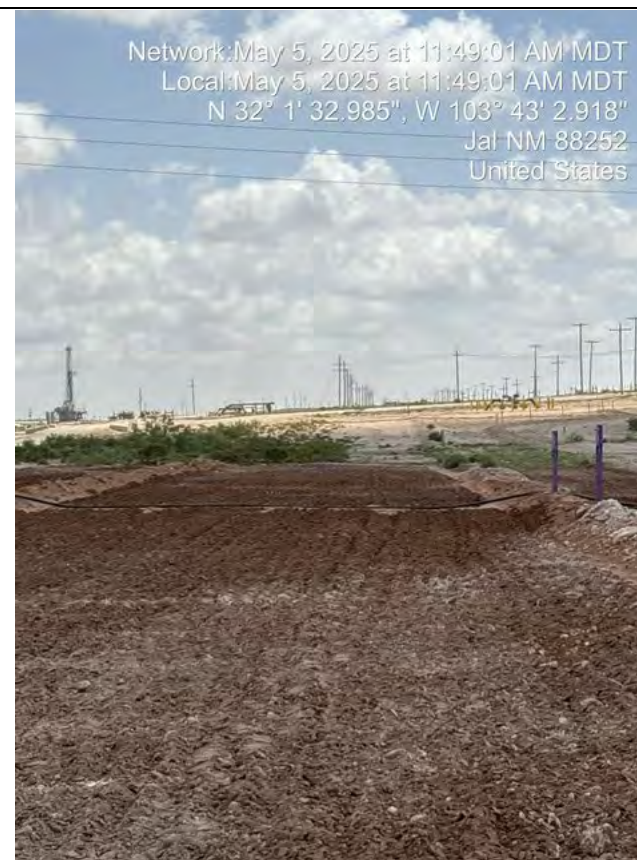


Photo 2: Central third of remediation area viewing east.

May 5, 2025

Released to Imaging: 7/2/2025 9:55:05 AM

Page 1 of 2

Daily Site Visit Report



Photo 3: Southern third of remediation area viewing west.



Photo 4: Southern extent of remediation extent viewing east along the pipeline service road.

May 5, 2025

Released to Imaging: 7/2/2025 9:55:05 AM

Page 2 of 2

APPENDIX C – Notifications

Communication Summary
(reproduced from NMOCD's digital reporting system)

Date	Detail
03/28/2025	The (03/28/2025, C-141N) application [446588] was assigned to this incident.
03/28/2025	The (03/28/2025, C-141N) application [446585] was assigned to this incident.
03/11/2025	60-day time extension request and variance to determine depth to water is approved. Remediation Due date updated to May 9, 2025. Email submitted by third party stated, " Vertex Resource Services, submits the attached extension and variance request for the Russell Federal 19-30 release (nAPP2331855166). Working around the buried pipelines, overhead powerlines, and the hard caliche rock has significantly reduced the time required to complete the remediation. Furthermore, recent depth-to-water data was discovered showing that groundwater is greater than 110-feet below ground surface. The attached includes a request for NMOCD to accept this data with a revision to the Closure Criteria concentrations per 19.15.29 NMAC".
02/24/2025	The (02/24/2025, C-141N) application [434469] was assigned to this incident.
02/19/2025	The (02/19/2025, C-141N) application [433669] was assigned to this incident.
02/19/2025	The (02/19/2025, C-141N) application [433667] was assigned to this incident.
01/22/2025	The (01/22/2025, C-141N) application [423833] was assigned to this incident.
01/22/2025	The (01/22/2025, C-141N) application [423830] was assigned to this incident.
01/17/2025	The (01/17/2025, C-141N) application [421923] was assigned to this incident.
01/17/2025	The (01/17/2025, C-141N) application [421920] was assigned to this incident.
12/03/2024	Time extension request for 90-days is approved. Remediation Due date has been updated to March 10, 2025. Justification submitted via email on 11/19/2024 states, "As shown on the attached map and the Daily Field Report (DFR), five (5) active layflats transect the proposed remediation area from east to west and span 15 feet north to south. We are actively monitoring the continued usage of the layflats. The layflats are providing water to non-Sahara Operating oil and gas drilling operations. We will begin remediation as soon as possible upon the decommissioning of the lines. Access to the southern portion of the remediation area is 1,000 ft from the west and will likely require right-of-entry permits and cultural resource surveys if the extension request is denied and the layflats have to be circumnavigated. Furthermore, if the extension request is denied a deferral request will be required for the portion of the release underlying the layflats. Access from the east is blocked by the subject layflats as they follow the ROW and turn south. Lastly, the presence of the buried pipelines and the location of the layflats creates minimal areas to move equipment in and out without causing additional surface damage to undisturbed areas".

Date	Detail
09/10/2024	App ID 380070: The remediation plan is approved. Sahara Operating Co. has 90-days (December 9, 2024) to submit to OCD its appropriate or final remediation closure report.

APPENDIX D – Laboratory Data Reports and Chain of Custody Forms



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 14, 2023

KRISTIN POPE

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: RUSSELL FED 19-30

Enclosed are the results of analyses for samples received by the laboratory on 11/09/23 13:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 1 @ 0-2 FT (H236155-01)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	1.93		
Toluene*	<0.050	0.050	11/10/2023	ND	2.18	109	2.00	1.53		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	1.34		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.74	112	6.00	1.40		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 76.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.2 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 1 @ 2-4 FT (H236155-02)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	1.93		
Toluene*	<0.050	0.050	11/10/2023	ND	2.18	109	2.00	1.53		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	1.34		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.74	112	6.00	1.40		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 93.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.2 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 1 @ 4.3 FT (H236155-03)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	1.93		
Toluene*	<0.050	0.050	11/10/2023	ND	2.18	109	2.00	1.53		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	1.34		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.74	112	6.00	1.40		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 98.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 2 @ 0-2 FT (H236155-04)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	12200	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 2 @ 2-4 FT (H236155-05)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11400	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 2 @ 4.3 FT (H236155-06)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10000	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 3 @ 0-2 FT (H236155-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	640	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 98.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 3 @ 2-4 FT (H236155-08)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 99.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 3 @ 4.3 FT (H236155-09)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	704	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 95.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 4 @ 0-2 FT (H236155-10)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 91.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 4 @ 2-4 FT (H236155-11)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 91.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 4 @ 4.3 FT (H236155-12)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	19.6	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 5 @ 0-2 FT (H236155-13)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 74.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 66.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 5 @ 2-4 FT (H236155-14)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 98.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 5 @ 4.3 FT (H236155-15)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 89.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: HA - 6 @ 0-2 FT (H236155-16)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 83.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: HA - 7 @ 0-2 FT (H236155-17)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 8 @ 0-2 FT (H236155-18)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8660	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 8 @ 2-4 FT (H236155-19)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9200	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 8 @ 4.3 FT (H236155-20)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10900	16.0	11/10/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	185	92.4	200	0.254	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	168	84.2	200	0.863	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 9 @ 0-2 FT (H236155-21)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 9 @ 2-4 FT (H236155-22)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 74.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 9 @ 4.3 FT (H236155-23)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 10 @ 0-2 FT (H236155-24)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3840	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 10 @ 2-4 FT (H236155-25)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2120	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 10 @ 4.3 FT (H236155-26)

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5120	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
 KRISTIN POPE
 901 RIO GRANDE BLVD SUITE F-142
 ALBUQUERQUE NM, 87104
 Fax To: NONE

Received: 11/09/2023
 Reported: 11/14/2023
 Project Name: RUSSELL FED 19-30
 Project Number: NONE GIVEN
 Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Dionica Hinojos

Sample ID: SSA - 11 @ 0-2 FT (H236155-27)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37	
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/10/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 94.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 11 @ 2-4 FT (H236155-28)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/10/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
KRISTIN POPE
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received: 11/09/2023
Reported: 11/14/2023
Project Name: RUSSELL FED 19-30
Project Number: NONE GIVEN
Project Location: SAHARA - BATTLE AXE RD

Sampling Date: 11/07/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Dionica Hinojos

Sample ID: SSA - 11 @ 4.3 FT (H236155-29)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	103	2.00	2.37		
Toluene*	<0.050	0.050	11/10/2023	ND	2.15	108	2.00	1.47		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	2.11		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.52	109	6.00	1.37		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/10/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	188	93.9	200	1.18	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	173	86.5	200	1.19	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.7 % 49.1-148

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Notes and Definitions

- QR-04 The RPD for the BS/BSD was outside of historical limits.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: R.T. Hicks Consultants Project Manager: Kristin Pope Address: 901 Rio Grande Blvd NW, Suite F-142 City: Albuquerque State: NM Zip: 87104 Phone #: 505-266-5004 Fax #: Project #: Project Owner: Sahara Project Name: Russell Fed 19-30 Project Location: Battle Axe Rd Sampler Name: Kristin Pope				BILL TO P.O. #: Company: R.T. Hicks Attn: Randy Address: City: State: Zip: Phone #: Fax #:				ANALYSIS REQUEST																			
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	BTEX	TPH										
H236155																											
1	SSA-1 @ 0-2 ft	G	1										11-7-2023	0957	✓	✓	✓										
2	SSA-1 @ 2-4 ft	G	1											0959	✓	✓	✓										
3	SSA-1 @ 4.3 ft	G	1											1000	✓	✓	✓										
4	SSA-2 @ 0-2 ft	G	1											1056	✓	✓	✓										
5	SSA-2 @ 2-4 ft	G	1											1059	✓	✓	✓										
6	SSA-2 @ 4.3 ft	G	1											1106	✓	✓	✓										
7	SSA-3 @ 0-2 ft	G	1											1111	✓	✓	✓										
8	SSA-3 @ 2-4 ft	G	1											1118	✓	✓	✓										
9	SSA-3 @ 4.3 ft	G	1											1126	✓	✓	✓										
10	SSA-4 @ 0-2 ft	G	1											1149	✓	✓	✓										

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Relinquished By: Kristin Pope Date: 11-9-23 Time: 13:05 Relinquished By:	Received By: [Signature] Date: Time:	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Add) Phone #: All Results are emailed. Please provide Email address: kristin@rthicksconsult.com, R@rthicksconsult.com REMARKS:
--	--	---

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 2.94 Corrected Temp. °C 2.1140	Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	CHECKED BY: (Initials) [Signature]	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush Thermometer ID #113 Correction Factor -0.5°C	Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Observed Temp. °C Corrected Temp. °C
---	---	---	---	--	--

FORM-006 R 3.2 10/01/21

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FORM-006 R 3.2 10/07/21



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: R.T. Hicks Consultants Project Manager: Kristin Pope Address: 901 Rio Grande Blvd NW, Suite F-142 City: Albuquerque State: NM Zip: 87104 Phone #: 505-266-5004 Fax #: Project #: Project Owner: Sahara Project Name: Russell Fed 19-30 Project Location: Battle Axe Rd Sampler Name: Kristin Pope				BILL TO P.O. #: Company: R.T. Hicks Attn: Randy Address: City: State: Zip: Phone #: Fax #:				ANALYSIS REQUEST																
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	BTEX	TPH							
H236155	21 SSA-9 @ 0-2 ft	G	1										11-7-2023	1415	✓	✓	✓							
	22 SSA-9 @ 2-4 ft	G	1											1418	✓	✓	✓							
	23 SSA-9 @ 4.3 ft	G	1											1430	✓	✓	✓							
	24 SSA-10 @ 0-2 ft	G	1											1432	✓	✓	✓							
	25 SSA-10 @ 2-4 ft	G	1											1440	✓	✓	✓							
	26 SSA-10 @ 4.3 ft	G	1											1441	✓	✓	✓							
	27 SSA-11 @ 0-2 ft	G	1											1445	✓	✓	✓							
	28 SSA-11 @ 2-4 ft	G	1											1458	✓	✓	✓							
	29 SSA-11 @ 4.3 ft	G	1											1504	✓	✓	✓							
KP																								

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Relinquished By:	Date:	Received By:	Verbal Result:
Kristin Pope	11-9-23	[Signature]	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No [Add'l Phone #:
Relinquished By:	Time:		All Results are emailed. Please provide Email address:
	13:09		kristin@rthicksconsult.com, R@rthicksconsult.com
Date:	Received By:	REMARKS:	
Time:			

Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY:	Turnaround Time:	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	9.90C	Cool Intact	(Initials)	Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Cool Intact
	Corrected Temp. °C	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Thermometer ID #143	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Observed Temp. °C
				Correction Factor -0.5°C	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Corrected Temp. °C

FORM-006 R 3.2 10/07/21

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 29, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: RUSSELL FEDERAL 19-30

Enclosed are the results of analyses for samples received by the laboratory on 01/23/25 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 01 4' (H250411-01)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175	
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87	
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93	
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40	
Total BTEX	<0.300	0.300	01/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	01/24/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 87.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.9 % 49.1-148

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 02 4' (H250411-02)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175	
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87	
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93	
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40	
Total BTEX	<0.300	0.300	01/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/24/2025	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 74.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 03 4' (H250411-03)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/24/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	01/24/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 87.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 04 8' (H250411-04)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/24/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 125 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	01/24/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 87.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 05 8' (H250411-05)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175	
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87	
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93	
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40	
Total BTEX	<0.300	0.300	01/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/24/2025	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 95.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 06 12' (H250411-06)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/24/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	01/24/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 89.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 01 0-4' (H250411-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/24/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/24/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/24/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/24/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/24/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	01/24/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	199	99.7	200	0.0601	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	192	96.0	200	0.964	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 86.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 02 0-4' (H250411-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/25/2025	ND	2.23	112	2.00	0.175	
Toluene*	<0.050	0.050	01/25/2025	ND	2.20	110	2.00	1.87	
Ethylbenzene*	<0.050	0.050	01/25/2025	ND	2.34	117	2.00	4.93	
Total Xylenes*	<0.150	0.150	01/25/2025	ND	7.20	120	6.00	4.40	
Total BTEX	<0.300	0.300	01/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/24/2025	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	202	101	200	1.93	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	196	98.1	200	3.23	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 83.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 03 0-4' (H250411-09)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/25/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/25/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/25/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/25/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	01/24/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	202	101	200	1.93	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	196	98.1	200	3.23	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 95.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 04 4-8' (H250411-10)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/25/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/25/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/25/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/25/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	01/24/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	202	101	200	1.93	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	196	98.1	200	3.23	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 96.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 05 4-8' (H250411-11)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/25/2025	ND	2.23	112	2.00	0.175		
Toluene*	<0.050	0.050	01/25/2025	ND	2.20	110	2.00	1.87		
Ethylbenzene*	<0.050	0.050	01/25/2025	ND	2.34	117	2.00	4.93		
Total Xylenes*	<0.150	0.150	01/25/2025	ND	7.20	120	6.00	4.40		
Total BTEX	<0.300	0.300	01/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 123 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	01/24/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	202	101	200	1.93	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	196	98.1	200	3.23	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 97.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.7 % 49.1-148

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/23/2025
 Reported: 01/29/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/21/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 06 8-12' (H250411-12)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/25/2025	ND	2.23	112	2.00	0.175	
Toluene*	<0.050	0.050	01/25/2025	ND	2.20	110	2.00	1.87	
Ethylbenzene*	<0.050	0.050	01/25/2025	ND	2.34	117	2.00	4.93	
Total Xylenes*	<0.150	0.150	01/25/2025	ND	7.20	120	6.00	4.40	
Total BTEX	<0.300	0.300	01/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	01/24/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2025	ND	202	101	200	1.93	
DRO >C10-C28*	<10.0	10.0	01/24/2025	ND	196	98.1	200	3.23	
EXT DRO >C28-C36	<10.0	10.0	01/24/2025	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Vertex Resource Services (for Sahara Operating)				BILL TO				ANALYSIS REQUEST																			
Project Manager: Andrew Parker				P.O. #: 24E-04568				<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX (8021)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH:8015D(GRO / DRO / MRO)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> </div>																			
Address: 3101 Boyd Drive				Company: Vertex Resource																							
City: Carlsbad State: NM Zip: 88220				Attn: Andrew Parker																							
Phone #: 575.725.5001 Fax #: 575.725.5001				Address: 3101 Boyd Drive																							
Project #: 24E-04568 Project Owner: Rob McAlpine				City: Carlsbad																							
Project Name: Russell Federal 19-30				State: NM Zip: 88220																							
Project Location:				Phone #: 575.725.5001																							
Sampler Name: L. Pullman.				Fax #:																							
FOR LAB USE ONLY																											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME													
H250411																											
1	BS-01 4'	C	1			X							01.21.25	11:35	X	X	X										
2	BS-02 4'	C	1			X							01.21.25	11:40	X	X	X										
3	BS-03 4'	C	1			X							01.21.25	11:45	X	X	X										
4	BS-04 8'	C	1			X							01.21.25	11:10	X	X	X										
5	BS-05 8'	C	1			X							01.21.25	11:15	X	X	X										
6	BS-06 12'	C	1			X							01.21.25	11:00	X	X	X										
7	WS-01 0-4'	C	1			X							01.21.25	11:55	X	X	X										
8	WS-02 0-4'	C	1			X							01.21.25	12:05	X	X	X										
9	WS-03 0-4'	C	1			X							01.21.25	12:10	X	X	X										
10	WS-04 4-8'	C	1			X							01.21.25	11:20	X	X	X										

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Relinquished By:	Date: 1-23-25	Received By:	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: 07:00	Received By:	Please provide Email results to: Andrew Parker (aparker@vertexresource.com), Lakin Pullman (lpullman@vertexresource.com), permain@vertexresource.com	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 1.0 Corrected Temp. °C 0.4	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: (Initials)	
		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		Bacteria (only) Sample Condition: Cool Intact <input type="checkbox"/> Observed Temp. °C
		Thermometer ID #140 Correction Factor -0.5°C		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C

REMARKS: Direct Bill to Sahara Operating Company, Incident #: nAPP2331855166

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Vertex Resource Services (for Sahara Operating)

Project Manager: Andrew Parker

Address: 3101 Boyd Drive

City: Carlsbad State: NM

Zip: 88220

Phone #:

575.725.5001

Fax #:

Project #: 24E-04568

Project Owner: Rob McAlpine

Project Name: Russell Federal 19-30

Project Location:

Sampler Name: L. Pullman.

BILL TO

P.O. #: 24E-04568

Company: Vertex Resource

Attn: Andrew Parker

Address: 3101 Boyd Drive

City: Carlsbad

State: NM Zip: 88220

Phone #: 575.725.5001

Fax #:

ANALYSIS REQUEST

BTEX (8021)

TPH:8015D(CRO / DRO / MRO)

Chloride

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER:

ACID/BASE

ICE / COOL

OTHER:

PRESERV.

SAMPLING

DATE

TIME

H250411

11 WS-05 4-8'

12 WS-06 8-12'

C

1

X

01.21.25

11:25

X

X

X

C

1

X

01.21.25

11:05

X

X

X

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Relinquished By: 	Date: 1-23-25 Time: 07:00	Received By: 	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date: 1-23-25 Time:	Received By:	Please provide Email results to: Andrew Parker (aparker@vertexresource.com), Lakin Pullman (lpullman@vertexresource.com), permain@vertexresource.com
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: 1.0 Corrected Temp. °C: 0.4	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No	REMARKS: Direct Bill to Sahara Operating Company, Incident #: nAPP2331855166
		CHECKED BY: (Initials) 	Turnaround Time: Standard <input checked="" type="checkbox"/> Bacteria (only) Sample Condition Rush <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C: Thermometer ID: 3113 #140 Correction Factor: -0.6°C 1/23/25
			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C:

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

2/1



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 05, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: RUSSELL FEDERAL 19-30

Enclosed are the results of analyses for samples received by the laboratory on 01/30/25 13:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 07 5-8' (H250551-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/30/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/30/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/30/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/30/2025	ND	6.43	107	6.00	3.49	
Total BTEX	<0.300	0.300	01/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6240	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 99.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 08 9' (H250551-02)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/30/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/30/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/30/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/30/2025	ND	6.43	107	6.00	3.49	
Total BTEX	<0.300	0.300	01/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4400	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 08 11' (H250551-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/30/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/30/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/30/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/30/2025	ND	6.43	107	6.00	3.49	
Total BTEX	<0.300	0.300	01/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5440	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 08 12' (H250551-04)

BTEX 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/30/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/30/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/30/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/30/2025	ND	6.43	107	6.00	3.49	
Total BTEX	<0.300	0.300	01/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1020	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 93.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 08 12.5' (H250551-05)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/31/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/31/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/31/2025	ND	6.43	107	6.00	3.49	
Total BTX	<0.300	0.300	01/31/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 89.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.1 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 01/30/2025
 Reported: 02/05/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: ROB MC ALPINE

Sampling Date: 01/29/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 09 0-5' (H250551-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2025	ND	1.92	96.1	2.00	2.31	
Toluene*	<0.050	0.050	01/31/2025	ND	2.10	105	2.00	2.28	
Ethylbenzene*	<0.050	0.050	01/31/2025	ND	2.07	104	2.00	1.49	
Total Xylenes*	<0.150	0.150	01/31/2025	ND	6.43	107	6.00	3.49	
Total BTEX	<0.300	0.300	01/31/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	01/31/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/30/2025	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	01/30/2025	ND	179	89.6	200	2.14	
EXT DRO >C28-C36	<10.0	10.0	01/30/2025	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex Resource Services (for Sahara Operating)				BILL TO				ANALYSIS REQUEST															
Project Manager: Andrew Parker				P.O. #: 24E-04568				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BT EX (8021)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH: 8015 D (GRO/DRO/MRO)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">chloride</div> </div>															
Address: 3101 Boyd Dr				Company: Vertex Resource																			
City: Carlsbad State: NM Zip: 88220				Attn: Andrew Parker																			
Phone #: 575.725.5001 Fax #:				Address: 3101 Boyd Dr																			
Project #: 24E-04568 Project Owner: Rob McAlpine				City: Carlsbad																			
Project Name: Russell Federal 19-30				State: NM Zip: 88220																			
Project Location:				Phone #: 575.725.5001																			
Sampler Name: ALudvik				Fax #:																			
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING															
Lab I.D.	Sample I.D.	(GRAB OR C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME									
H250551																							
	1 WS-07 5-8'	C	1			X							01.28.25	0945	X	X	X						
	2 WS-08 9'													1000									
	3 WS-08 11'													1005									
	4 WS-08 12'													1010									
	5 WS-08 12.5'													1015									
	6 WS-09 0-5'													1200									

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Relinquished By:	Date: 1-30-25	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
	Time: 1335		All Results are emailed. Please provide Email address: Andrew Parker (a.parker@vertexresource.com)
Relinquished By:	Date:	Received By:	ALudvik@vertexresource.com Lpullman@vertexresource.com
	Time:		perman@vertexresource.com
Delivered By: (Circle One)	Observed Temp. °C 1.9	Sample Condition	REMARKS:
Sampler - UPS - Bus - Other:	Corrected Temp. °C 1.3	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Bill to Vertex, Project Number 24E-04568, Incident # APP235, 185516
		CHECKED BY: (Initials)	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
			Bacteria (only) Sample Condition
			Cool <input type="checkbox"/> Intact <input type="checkbox"/> Observed Temp. °C
			<input type="checkbox"/> Yes <input type="checkbox"/> Yes
			<input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C

FORM-006 R 3.0 08/03/24

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 06, 2025

ANDREW PARKER

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: RUSSELL FEDERAL 19-30

Enclosed are the results of analyses for samples received by the laboratory on 02/27/25 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at

www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BS - 07 5'	H251187-01	Soil	24-Feb-25 09:00	27-Feb-25 14:00
BS - 08 5'	H251187-02	Soil	24-Feb-25 09:10	27-Feb-25 14:00
BS - 09 5'	H251187-03	Soil	24-Feb-25 09:20	27-Feb-25 14:00
BS - 10 5'	H251187-04	Soil	24-Feb-25 09:30	27-Feb-25 14:00
WS - 10 0-4'	H251187-05	Soil	24-Feb-25 09:40	27-Feb-25 14:00
WS - 10 4-5'	H251187-06	Soil	24-Feb-25 09:50	27-Feb-25 14:00
WS - 11 4-5'	H251187-07	Soil	24-Feb-25 10:00	27-Feb-25 14:00
BS - 11 10'	H251187-08	Soil	24-Feb-25 10:10	27-Feb-25 14:00
BS - 12 10'	H251187-09	Soil	24-Feb-25 10:20	27-Feb-25 14:00
BS - 13 6'	H251187-10	Soil	24-Feb-25 10:30	27-Feb-25 14:00
BS - 14 4'	H251187-11	Soil	24-Feb-25 10:40	27-Feb-25 14:00
BS - 15 4'	H251187-12	Soil	24-Feb-25 10:50	27-Feb-25 14:00
BS - 16 4'	H251187-13	Soil	24-Feb-25 11:00	27-Feb-25 14:00
BS - 17 4'	H251187-14	Soil	24-Feb-25 11:10	27-Feb-25 14:00
BS - 18 4'	H251187-15	Soil	24-Feb-25 11:20	27-Feb-25 14:00
BS - 19 4'	H251187-16	Soil	24-Feb-25 11:30	27-Feb-25 14:00
BS - 20 4'	H251187-17	Soil	24-Feb-25 11:40	27-Feb-25 14:00
BS - 21 4'	H251187-18	Soil	24-Feb-25 11:50	27-Feb-25 14:00
WS - 12 0-4'	H251187-19	Soil	24-Feb-25 12:00	27-Feb-25 14:00
WS - 15 0-4'	H251187-20	Soil	24-Feb-25 12:10	27-Feb-25 14:00
WS - 16 0-4'	H251187-21	Soil	24-Feb-25 12:20	27-Feb-25 14:00
WS - 16 4-6'	H251187-22	Soil	24-Feb-25 12:30	27-Feb-25 14:00
WS - 22 6-10'	H251187-23	Soil	24-Feb-25 12:40	27-Feb-25 14:00
WS - 23 6-10'	H251187-24	Soil	24-Feb-25 12:50	27-Feb-25 14:00
WS - 17 0-3'	H251187-25	Soil	24-Feb-25 13:00	27-Feb-25 14:00
WS - 18 1'-5'	H251187-26	Soil	24-Feb-25 13:10	27-Feb-25 14:00
WS - 19 4-5'	H251187-27	Soil	24-Feb-25 13:20	27-Feb-25 14:00

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 20 3-5'	H251187-28	Soil	24-Feb-25 13:30	27-Feb-25 14:00
BS - 22 5'	H251187-29	Soil	24-Feb-25 13:40	27-Feb-25 14:00
WS - 15.1 0-6'	H251187-30	Soil	25-Feb-25 09:00	27-Feb-25 14:00
WS - 15.2 4-6'	H251187-31	Soil	25-Feb-25 09:10	27-Feb-25 14:00
WS - 16.1 4-6'	H251187-32	Soil	25-Feb-25 09:20	27-Feb-25 14:00
BS - 21.1 4'	H251187-33	Soil	25-Feb-25 09:30	27-Feb-25 14:00
BS - 23 5'	H251187-34	Soil	25-Feb-25 09:40	27-Feb-25 14:00
BS - 24 3'	H251187-35	Soil	25-Feb-25 09:50	27-Feb-25 14:00
BS - 25 1'	H251187-36	Soil	25-Feb-25 10:00	27-Feb-25 14:00
BS - 26 1'	H251187-37	Soil	25-Feb-25 10:10	27-Feb-25 14:00
BS - 27 1'	H251187-38	Soil	25-Feb-25 10:20	27-Feb-25 14:00
BS - 28 4'	H251187-39	Soil	25-Feb-25 10:30	27-Feb-25 14:00
BS - 29 4'	H251187-40	Soil	25-Feb-25 10:40	27-Feb-25 14:00
BS - 30 4'	H251187-41	Soil	25-Feb-25 10:50	27-Feb-25 14:00
WS - 13 0-1'	H251187-42	Soil	25-Feb-25 11:00	27-Feb-25 14:00
WS - 14 0-4'	H251187-43	Soil	25-Feb-25 11:10	27-Feb-25 14:00
WS - 21 1-4'	H251187-44	Soil	25-Feb-25 11:20	27-Feb-25 14:00

03/06/25 - Client changed the project name, project number, sample IDs on -26 and -30 (see COC). This is the revised report and will replace the one sent on 03/05/25.

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 07 5'
H251187-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4160		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022842	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134 5022842 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 90.7 % 71.8-148 5022832 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 83.1 % 63.9-155 5022832 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 08 5'
H251187-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4400		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022842	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022842	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	110 %	71.5-134	5022842	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	95.6 %	71.8-148	5022832	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	87.1 %	63.9-155	5022832	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 09 5'
H251187-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	11000		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022843	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	119 %	71.5-134	5022843	JH	03-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	98.6 %	71.8-148	5022832	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	90.9 %	63.9-155	5022832	MS	03-Mar-25	8015B
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 10 5'
H251187-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	6000		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134 5022843 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 100 % 71.8-148 5022832 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 91.0 % 63.9-155 5022832 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 10 0-4'
H251187-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	560		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			119 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			83.0 %		71.8-148	5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			72.0 %		63.9-155	5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 10 4-5'
H251187-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	400		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			117 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			91.3 %		71.8-148	5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			79.2 %		63.9-155	5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 11 4-5'
H251187-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	8800		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021**S-04**

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			135 %	71.5-134		5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			96.9 %	71.8-148		5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			87.6 %	63.9-155		5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 11 10'
H251187-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	384		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			127 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			101 %		71.8-148	5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			91.5 %		63.9-155	5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 12 10'
H251187-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	352		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			130 %	71.5-134		5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			97.8 %	71.8-148		5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			86.8 %	63.9-155		5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 13 6'
H251187-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	992		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			124 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022832	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			100 %		71.8-148	5022832	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			90.1 %		63.9-155	5022832	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 14 4'
H251187-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	10800		16.0	mg/kg	4	5030310	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			127 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			88.7 %		71.8-148	5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			87.6 %		63.9-155	5022833	MS	03-Mar-25	8015B	
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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 15 4'
H251187-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	5280		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	QM-07
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134 5022843 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 92.8 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 94.2 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 16 4'
H251187-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2080		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 123 % 71.5-134 5022843 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 84.5 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 82.6 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 17 4'
H251187-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2080		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 124 % 71.5-134 5022843 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 88.3 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 87.3 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 18 4'
H251187-15 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2880		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 125 % 71.5-134 5022843 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 89.8 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 87.7 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 19 4'
H251187-16 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	7520		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134 5022843 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 103 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 103 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 20 4'
H251187-17 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	14600		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	122 %	71.5-134	5022843	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	102 %	71.8-148	5022833	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	101 %	63.9-155	5022833	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 21 4'
H251187-18 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1500		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			128 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			94.3 %		71.8-148	5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			92.2 %		63.9-155	5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 12 0-4'
H251187-19 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	128		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	127 %	71.5-134	5022843	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	93.5 %	71.8-148	5022833	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	91.1 %	63.9-155	5022833	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 15 0-4'
H251187-20 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	896		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	128 %	71.5-134	5022843	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	88.7 %	71.8-148	5022833	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	86.3 %	63.9-155	5022833	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 16 0-4'
H251187-21 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4480		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	129 %	71.5-134	5022843	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	79.2 %	71.8-148	5022833	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	76.4 %	63.9-155	5022833	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 16 4-6'
H251187-22 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4400		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022843	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022843	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			124 %		71.5-134	5022843	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			81.3 %		71.8-148	5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			78.6 %		63.9-155	5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 22 6-10'**H251187-23 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	896		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134 5022844 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 95.2 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 92.7 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 23 6-10'**H251187-24 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	320		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			109 %		71.5-134	5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			93.2 %		71.8-148	5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			91.7 %		63.9-155	5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 17 0-3'
H251187-25 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1330		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			108 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			91.6 %	71.8-148		5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			89.9 %	63.9-155		5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 18 1'-5'
H251187-26 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	3920		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			106 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			91.8 %	71.8-148		5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			89.2 %	63.9-155		5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 19 4-5'
H251187-27 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	6260		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134 5022844 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 93.6 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 92.3 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 20 3-5'
H251187-28 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	9060		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			105 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			93.9 %	71.8-148		5022833	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			92.5 %	63.9-155		5022833	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 22 5'
H251187-29 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1260		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134 5022844 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 86.7 % 71.8-148 5022833 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 84.6 % 63.9-155 5022833 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 15.1 0-6'**H251187-30 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	272		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	107 %	71.5-134	5022844	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022833	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	94.9 %	71.8-148	5022833	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	99.8 %	63.9-155	5022833	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 15.2 4-6'**H251187-31 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	128		16.0	mg/kg	4	5030317	CT	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	109 %	71.5-134	5022844	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	81.3 %	71.8-148	5022822	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	70.6 %	63.9-155	5022822	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 16.1 4-6'
H251187-32 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	13400		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	QM-07
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134 5022844 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 89.0 % 71.8-148 5022822 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 78.4 % 63.9-155 5022822 MS 03-Mar-25 8015B

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 21.1 4'
H251187-33 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	240		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	71.5-134		5022844	JH	04-Mar-25	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
Surrogate: 1-Chlorooctane			86.3 %	71.8-148		5022822	MS	03-Mar-25	8015B	
Surrogate: 1-Chlorooctadecane			79.5 %	63.9-155		5022822	MS	03-Mar-25	8015B	

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 23 5'
H251187-34 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1040		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			105 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			77.0 %	71.8-148		5022822	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			68.9 %	63.9-155		5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 24 3'
H251187-35 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2640		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	106 %	71.5-134	5022844	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	79.1 %	71.8-148	5022822	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	66.6 %	63.9-155	5022822	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 25 1'
H251187-36 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	9800		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			107 %		71.5-134	5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			92.2 %		71.8-148	5022822	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			80.3 %		63.9-155	5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 26 1'
H251187-37 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	3280		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			108 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			78.7 %	71.8-148		5022822	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			69.6 %	63.9-155		5022822	MS	03-Mar-25	8015B	
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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 27 1'
H251187-38 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	5860		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			109 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			90.7 %	71.8-148		5022822	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			79.0 %	63.9-155		5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 28 4'
H251187-39 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	672		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			108 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			94.6 %	71.8-148		5022822	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			82.4 %	63.9-155		5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 29 4'
H251187-40 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2240		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			107 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			88.6 %	71.8-148		5022822	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			76.0 %	63.9-155		5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

BS - 30 4'
H251187-41 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2960		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	109 %	71.5-134	5022844	JH	04-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	85.9 %	71.8-148	5022822	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	75.4 %	63.9-155	5022822	MS	03-Mar-25	8015B
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 13 0-1'
H251187-42 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1960		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5022844	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5022844	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			107 %	71.5-134		5022844	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	04-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	04-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	04-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			83.6 %	71.8-148		5022822	MS	04-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			77.2 %	63.9-155		5022822	MS	04-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 14 0-4'
H251187-43 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1600		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030102	JH	04-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			124 %		71.5-134	5030102	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			77.5 %		71.8-148	5022822	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			66.7 %		63.9-155	5022822	MS	03-Mar-25	8015B	
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

WS - 21 1-4'
H251187-44 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	10000		16.0	mg/kg	4	5030333	AC	03-Mar-25	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030102	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030102	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			117 %		71.5-134	5030102	JH	04-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5022822	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			82.9 %		71.8-148	5022822	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			73.4 %		63.9-155	5022822	MS	03-Mar-25	8015B	
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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5030310 - 1:4 DI Water**Blank (5030310-BLK1)**

Prepared & Analyzed: 03-Mar-25

Chloride	ND	16.0	mg/kg							
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LCS (5030310-BS1)

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120			
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LCS Dup (5030310-BSD1)

Prepared & Analyzed: 03-Mar-25

Chloride	432	16.0	mg/kg	400		108	80-120	3.77	20	
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Batch 5030317 - 1:4 DI Water**Blank (5030317-BLK1)**

Prepared & Analyzed: 03-Mar-25

Chloride	ND	16.0	mg/kg							
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LCS (5030317-BS1)

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120			
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LCS Dup (5030317-BSD1)

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
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Batch 5030333 - 1:4 DI Water**Blank (5030333-BLK1)**

Prepared & Analyzed: 03-Mar-25

Chloride	ND	16.0	mg/kg							
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LCS (5030333-BS1)

Prepared & Analyzed: 03-Mar-25

Chloride	400	16.0	mg/kg	400		100	80-120			
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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NAReported:
06-Mar-25 18:00**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5030333 - 1:4 DI Water**LCS Dup (5030333-BSD1)**

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	
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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5022842 - Volatiles**Blank (5022842-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0556		mg/kg	0.0500		111	71.5-134			

LCS (5022842-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	1.93	0.050	mg/kg	2.00		96.4	82.8-130			
Toluene	2.21	0.050	mg/kg	2.00		110	86-128			
Ethylbenzene	2.25	0.050	mg/kg	2.00		112	85.9-128			
m,p-Xylene	4.64	0.100	mg/kg	4.00		116	89-129			
o-Xylene	2.22	0.050	mg/kg	2.00		111	86.1-125			
Total Xylenes	6.87	0.150	mg/kg	6.00		114	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0508		mg/kg	0.0500		102	71.5-134			

LCS Dup (5022842-BSD1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	1.89	0.050	mg/kg	2.00		94.7	82.8-130	1.80	15.8	
Toluene	2.16	0.050	mg/kg	2.00		108	86-128	2.10	15.9	
Ethylbenzene	2.18	0.050	mg/kg	2.00		109	85.9-128	3.07	16	
m,p-Xylene	4.52	0.100	mg/kg	4.00		113	89-129	2.75	16.2	
o-Xylene	2.16	0.050	mg/kg	2.00		108	86.1-125	2.99	16.7	
Total Xylenes	6.68	0.150	mg/kg	6.00		111	88.2-128	2.83	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0508		mg/kg	0.0500		102	71.5-134			

Batch 5022843 - Volatiles**Blank (5022843-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5022843 - Volatiles**Blank (5022843-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0571		mg/kg	0.0500		114	71.5-134			

LCS (5022843-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	1.94	0.050	mg/kg	2.00		97.0	82.8-130			
Toluene	1.95	0.050	mg/kg	2.00		97.6	86-128			
Ethylbenzene	2.04	0.050	mg/kg	2.00		102	85.9-128			
m,p-Xylene	4.18	0.100	mg/kg	4.00		104	89-129			
o-Xylene	2.11	0.050	mg/kg	2.00		106	86.1-125			
Total Xylenes	6.29	0.150	mg/kg	6.00		105	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0522		mg/kg	0.0500		104	71.5-134			

LCS Dup (5022843-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	1.89	0.050	mg/kg	2.00		94.6	82.8-130	2.54	15.8	
Toluene	1.98	0.050	mg/kg	2.00		99.1	86-128	1.47	15.9	
Ethylbenzene	2.11	0.050	mg/kg	2.00		106	85.9-128	3.46	16	
m,p-Xylene	4.34	0.100	mg/kg	4.00		108	89-129	3.79	16.2	
o-Xylene	2.21	0.050	mg/kg	2.00		111	86.1-125	4.62	16.7	
Total Xylenes	6.55	0.150	mg/kg	6.00		109	88.2-128	4.07	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0556		mg/kg	0.0500		111	71.5-134			

Batch 5022844 - Volatiles**Blank (5022844-BLK1)**

Prepared: 28-Feb-25 Analyzed: 04-Mar-25

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0570		mg/kg	0.0500		114	71.5-134			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 5022844 - Volatiles**LCS (5022844-BS1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

Benzene	1.78	0.050	mg/kg	2.00		89.0	82.8-130		
Toluene	2.04	0.050	mg/kg	2.00		102	86-128		
Ethylbenzene	2.18	0.050	mg/kg	2.00		109	85.9-128		
m,p-Xylene	4.33	0.100	mg/kg	4.00		108	89-129		
o-Xylene	2.19	0.050	mg/kg	2.00		110	86.1-125		
Total Xylenes	6.52	0.150	mg/kg	6.00		109	88.2-128		

Surrogate: 4-Bromofluorobenzene (PID)

0.0563

mg/kg

0.0500

113

71.5-134

LCS Dup (5022844-BSD1)

Prepared: 28-Feb-25 Analyzed: 04-Mar-25

Benzene	1.79	0.050	mg/kg	2.00		89.3	82.8-130	0.355	15.8
Toluene	1.90	0.050	mg/kg	2.00		94.9	86-128	7.08	15.9
Ethylbenzene	2.03	0.050	mg/kg	2.00		101	85.9-128	7.29	16
m,p-Xylene	4.03	0.100	mg/kg	4.00		101	89-129	7.05	16.2
o-Xylene	2.05	0.050	mg/kg	2.00		102	86.1-125	6.82	16.7
Total Xylenes	6.08	0.150	mg/kg	6.00		101	88.2-128	6.97	16.3

Surrogate: 4-Bromofluorobenzene (PID)

0.0533

mg/kg

0.0500

107

71.5-134

Batch 5030102 - Volatiles**Blank (5030102-BLK1)**

Prepared: 01-Mar-25 Analyzed: 04-Mar-25

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						

Surrogate: 4-Bromofluorobenzene (PID)

0.0627

mg/kg

0.0500

125

71.5-134

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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 5030102 - Volatiles**LCS (5030102-BS1)**

Prepared: 01-Mar-25 Analyzed: 04-Mar-25

Benzene	1.91	0.050	mg/kg	2.00		95.7	82.8-130		
Toluene	2.12	0.050	mg/kg	2.00		106	86-128		
Ethylbenzene	2.33	0.050	mg/kg	2.00		116	85.9-128		
m,p-Xylene	4.82	0.100	mg/kg	4.00		120	89-129		
o-Xylene	2.43	0.050	mg/kg	2.00		121	86.1-125		
Total Xylenes	7.24	0.150	mg/kg	6.00		121	88.2-128		

Surrogate: 4-Bromofluorobenzene (PID)

0.0580

mg/kg

0.0500

116

71.5-134

LCS Dup (5030102-BSD1)

Prepared: 01-Mar-25 Analyzed: 04-Mar-25

Benzene	1.95	0.050	mg/kg	2.00		97.4	82.8-130	1.77	15.8
Toluene	2.17	0.050	mg/kg	2.00		109	86-128	2.24	15.9
Ethylbenzene	2.37	0.050	mg/kg	2.00		119	85.9-128	1.83	16
m,p-Xylene	4.88	0.100	mg/kg	4.00		122	89-129	1.33	16.2
o-Xylene	2.47	0.050	mg/kg	2.00		124	86.1-125	1.79	16.7
Total Xylenes	7.35	0.150	mg/kg	6.00		123	88.2-128	1.49	16.3

Surrogate: 4-Bromofluorobenzene (PID)

0.0585

mg/kg

0.0500

117

71.5-134

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5022822 - General Prep - Organics**Blank (5022822-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	51.0		mg/kg	50.0		102	71.8-148			
Surrogate: 1-Chlorooctadecane	45.4		mg/kg	50.0		90.8	63.9-155			

LCS (5022822-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	197	10.0	mg/kg	200		98.6	81.5-123			
DRO >C10-C28	187	10.0	mg/kg	200		93.4	77.7-122			
Total TPH C6-C28	384	10.0	mg/kg	400		96.0	80.9-121			
Surrogate: 1-Chlorooctane	53.3		mg/kg	50.0		107	71.8-148			
Surrogate: 1-Chlorooctadecane	48.0		mg/kg	50.0		96.0	63.9-155			

LCS Dup (5022822-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	204	10.0	mg/kg	200		102	81.5-123	3.33	13	
DRO >C10-C28	193	10.0	mg/kg	200		96.5	77.7-122	3.20	15.6	
Total TPH C6-C28	397	10.0	mg/kg	400		99.2	80.9-121	3.27	18.5	
Surrogate: 1-Chlorooctane	56.3		mg/kg	50.0		113	71.8-148			
Surrogate: 1-Chlorooctadecane	50.5		mg/kg	50.0		101	63.9-155			

Batch 5022832 - General Prep - Organics**Blank (5022832-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	54.7		mg/kg	50.0		109	71.8-148			
Surrogate: 1-Chlorooctadecane	50.6		mg/kg	50.0		101	63.9-155			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 5022832 - General Prep - Organics**LCS (5022832-BS1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	203	10.0	mg/kg	200	101	81.5-123			
DRO >C10-C28	191	10.0	mg/kg	200	95.6	77.7-122			
Total TPH C6-C28	394	10.0	mg/kg	400	98.4	80.9-121			
Surrogate: 1-Chlorooctane	56.5		mg/kg	50.0	113	71.8-148			
Surrogate: 1-Chlorooctadecane	52.7		mg/kg	50.0	105	63.9-155			

LCS Dup (5022832-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	211	10.0	mg/kg	200	106	81.5-123	4.11	13	
DRO >C10-C28	199	10.0	mg/kg	200	99.6	77.7-122	4.07	15.6	
Total TPH C6-C28	410	10.0	mg/kg	400	103	80.9-121	4.09	18.5	
Surrogate: 1-Chlorooctane	61.0		mg/kg	50.0	122	71.8-148			
Surrogate: 1-Chlorooctadecane	56.8		mg/kg	50.0	114	63.9-155			

Batch 5022833 - General Prep - Organics**Blank (5022833-BLK1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	53.6		mg/kg	50.0	107	71.8-148			
Surrogate: 1-Chlorooctadecane	53.1		mg/kg	50.0	106	63.9-155			

LCS (5022833-BS1)

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	185	10.0	mg/kg	200	92.5	81.5-123			
DRO >C10-C28	179	10.0	mg/kg	200	89.7	77.7-122			
Total TPH C6-C28	364	10.0	mg/kg	400	91.1	80.9-121			
Surrogate: 1-Chlorooctane	54.7		mg/kg	50.0	109	71.8-148			
Surrogate: 1-Chlorooctadecane	55.3		mg/kg	50.0	111	63.9-155			

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: RUSSELL FEDERAL 19-30
Project Number: 24E - 04568
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:00

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 5022833 - General Prep - Organics**LCS Dup (5022833-BSD1)**

Prepared: 28-Feb-25 Analyzed: 03-Mar-25

GRO C6-C10	192	10.0	mg/kg	200		96.0	81.5-123	3.64	13	
DRO >C10-C28	188	10.0	mg/kg	200		94.1	77.7-122	4.78	15.6	
Total TPH C6-C28	380	10.0	mg/kg	400		95.0	80.9-121	4.20	18.5	
Surrogate: 1-Chlorooctane	58.8		mg/kg	50.0		118	71.8-148			
Surrogate: 1-Chlorooctadecane	59.1		mg/kg	50.0		118	63.9-155			

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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 5

Page 59 of 62

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Relinquished By: 		Date: <u>2/27</u>	Received By: 		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ All Results are emailed. Please provide Email address: _____	
Relinquished By: _____		Date: <u>1/400</u>	Received By: _____		REMARKS: <u>9 Parker@vertexresource.com</u>	
Delivered By: (Circle One)		Observed Temp. °C <u>3.1</u>	Sample Condition	CHECKED BY: (Initials)	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only) Sample Condition
Sampler - UPS - Bus - Other: _____		Corrected Temp. °C <u>3.4</u>	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Thermometer ID <u>#13 #140</u>	Cool Intact Observed Temp. °C
			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		Correction Factor <u>-0.5C +0.3C</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No Corrected Temp. °C

FORM-006 R 3.2 10/07/21

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 5

Company Name: Vertex				BILL TO				ANALYSIS REQUEST															
Project Manager: Andrew Parker				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>BTEX 8021</div> <div>TPH 8015D GRO/DRO/MRO</div> <div>Chloride</div> </div>															
Address: On File				Company: Vertex																			
City: _____ State: _____ Zip: _____				Attn: Andrew																			
Phone #: _____ Fax #: _____				Address: Parker																			
Project #: 24E-04568 Project Owner: _____				City: _____																			
Project Name: North Elmer Unit 50				State: _____ Zip: _____																			
Project Location: Russell Federal 19-30				Phone #: _____																			
Sampler Name: KT				Fax #: _____																			
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING															
Lab I.D.	Sample I.D.	(GIRAB OR (C)OMP. # CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME										
H257187																							
21	WS-16 0-4'	C 1			X							2-24-25	1220										
22	WS-16 4-6'												1230										
23	WS-22 6-10'												1240										
24	WS-23 6-10'												1250										
25	WS-17 0-3'												1300										
26	WS-18 1'-4-5'												1310										
27	WS-19 4-5'												1320										
28	WS-20 3-5'												1330										
29	WS-22 5'												1340										

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Relinquished By:		Date: 3/27	Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Time: 10:42		Time: 1400		All Results are emailed. Please provide Email address:		
Relinquished By:		Received By:		REMARKS: a.parker@vertexresource.com		
Time:						
Delivered By: (Circle One)	Observed Temp. °C 3.1	Sample Condition	CHECKED BY: (Initials)	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C 3.4	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Thermometer ID #113 #140	Cool <input type="checkbox"/> Yes <input type="checkbox"/> No	Observed Temp. °C
		Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Correction Factor -0.5°C +0.3°C	Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Corrected Temp. °C

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

4 of 5

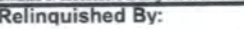


Page 61 of 62

(575) 393-2326 FAX (575) 393-2476		BILL TO		ANALYSIS REQUEST											
Company Name: Vertex		P.O. #:		<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX 8021</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (B015D BRO/DRO/MRO)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> </div>											
Project Manager: Andrew Parker		Company: Vertex													
Address: on file		Attn: Andrew													
City:	State:	Zip:	Address: Parker												
Phone #:	Fax #:		City:												
Project #: 34E-04568	Project Owner:		State:												
Project Name: North Elmer Unit 50		Zip:													
Project Location: Russell Federal 19-30		Phone #:													
Sampler Name: KT		Fax #:													

FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:
H251187									
36 WS-15.1	0-4'	↓	1			X			
31 WS-15.2	4-6'								
32 WS-16.1	4-6'								
33 BS-21.1	4m								
34 BS-23	5'								
35 BS-24	3'								
36 BS-25	1'								
37 BS-26	1'								
38 BS-27	1'								
39 BS-28	4'								

DATE	TIME												
2-25-25	0900												
	0910												
	0920												
	0930												
	0940												
	0950												
	1000												
	1010												
	1020												
	1030												

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Relinquished By: 		Date: 2/27	Received By: 	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:		Date: 10-42	Received By:	All Results are emailed. Please provide Email address:
Delivered By: (Circle One)		Observed Temp. °C 3.1	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	REMARKS: a.parker@vertexresource.com
Sampler - UPS - Bus - Other:		Corrected Temp. °C 3.4	CHECKED BY: (Initials) 	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C
				Thermometer ID #113 #140 Correction Factor -0.5°C +0.3°C

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5 of 5

Company Name: Vertex				BILL TO				ANALYSIS REQUEST																								
Project Manager: Andrew Parker				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX 8021</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (8015 D Gre/DRO/MRO)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> </div>																								
Address: On File				Company: Vertex																												
City: _____ State: _____ Zip: _____				Attn: Andrew																												
Phone #: _____ Fax #: _____				Address: Parker																												
Project #: 24E-04568 Project Owner: _____				City: _____																												
Project Name: North Elmer Unit 50				State: _____ Zip: _____																												
Project Location: Russell Federal 19-30				Phone #: _____																												
Sampler Name: KT				Fax #: _____																												
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																								
Lab I.D.	Sample I.D.	(G/RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME																		
H251187																																
40	BS-29	4'	1			X							2-25-25	1040																		
41	BS-30	4'												1050																		
42	WS-13	0-1'												1100																		
43	WS-14	0-4'												1110																		
44	WS-21	1-4'												1120																		

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Relinquished By:	Date: 2/27	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By: _____	Time: 10:42	Received By: _____	All Results are emailed. Please provide Email address:
Relinquished By: _____	Date: 1400	Received By: _____	REMARKS: aparker@vertexresources.com
Relinquished By: _____	Time: _____	Received By: _____	
Delivered By: (Circle One)	Observed Temp. °C 31	Sample Condition	CHECKED BY: (Initials) TO
Sampler - UPS - Bus - Other:	Corrected Temp. °C 3.4	Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
			Bacteria (only) Sample Condition
			Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No
			Observed Temp. °C
			Corrected Temp. °C
			Thermometer ID #140
			Correction Factor -0.3°C

FORM-006 K 3.2 10/07/21

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 26, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: RUSSELL FEDERAL 19-30

Enclosed are the results of analyses for samples received by the laboratory on 03/20/25 14:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 03/20/2025
 Reported: 03/26/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 03/17/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TOPSOIL BACKFILL - 01.0' (H251653-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/22/2025	ND	1.92	96.1	2.00	10.8	
Toluene*	<0.050	0.050	03/22/2025	ND	2.02	101	2.00	11.1	
Ethylbenzene*	<0.050	0.050	03/22/2025	ND	2.03	102	2.00	11.7	
Total Xylenes*	<0.150	0.150	03/22/2025	ND	6.21	103	6.00	9.44	
Total BTEX	<0.300	0.300	03/22/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	03/24/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/21/2025	ND	198	98.8	200	0.389	
DRO >C10-C28*	<10.0	10.0	03/21/2025	ND	189	94.6	200	0.593	
EXT DRO >C28-C36	<10.0	10.0	03/21/2025	ND					

Surrogate: 1-Chlorooctane 113 % 44.4-145

Surrogate: 1-Chlorooctadecane 105 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 03/20/2025
 Reported: 03/26/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 03/17/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: CALICHE BACKFILL - 01.0' (H251653-02)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/22/2025	ND	1.92	96.1	2.00	10.8	
Toluene*	<0.050	0.050	03/22/2025	ND	2.02	101	2.00	11.1	
Ethylbenzene*	<0.050	0.050	03/22/2025	ND	2.03	102	2.00	11.7	
Total Xylenes*	<0.150	0.150	03/22/2025	ND	6.21	103	6.00	9.44	
Total BTX	<0.300	0.300	03/22/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	03/24/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/21/2025	ND	198	98.8	200	0.389	
DRO >C10-C28*	<10.0	10.0	03/21/2025	ND	189	94.6	200	0.593	
EXT DRO >C28-C36	<10.0	10.0	03/21/2025	ND					

Surrogate: 1-Chlorooctane 109 % 44.4-145

Surrogate: 1-Chlorooctadecane 101 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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Relinquished By: <i>Steph McCarty</i>	Date: <i>3-27-25</i>	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <i>12:00</i>		Please provide Email results to: Andrew Parker (aparker@vertexresource.com), Lakin Pullman (lpullman@vertexresource.com), permmain@vertexresource.com, Stephanie McCarty (smccarty@vertexresource.com)	
Relinquished By:	Date: <i>3-20-25</i>	Received By: <i>Turnara Adams</i>	REMARKS: Bill to Vertex, Project Number 24E-04568, Incident #: nAPP2331855166	
	Time: <i>1414</i>			
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C <i>2.3</i> Corrected Temp. °C <i>2.6</i>	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: (Initials) <i>Jo.</i>	Turnaround Time: Standard <input checked="" type="checkbox"/> Bacteria (only) Sample Condition Rush <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C <i>#140</i> Thermometer ID <i>2113</i> Correction Factor <i>-0.3</i> <i>90 - 3/20/25</i>
				<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 09, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: RUSSELL FEDERAL 19-30

Enclosed are the results of analyses for samples received by the laboratory on 04/03/25 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received:	04/03/2025	Sampling Date:	04/01/2025
Reported:	04/09/2025	Sampling Type:	Soil
Project Name:	RUSSELL FEDERAL 19-30	Sampling Condition:	Cool & Intact
Project Number:	24E - 04568	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: WS - 16.2 0-4' (H251969-01)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	196	98.2	200	0.0255	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.37	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 86.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 81.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 17.1 0-3' (H251969-02)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/05/2025	ND	196	98.2	200	0.0255	
DRO >C10-C28*	<10.0	10.0	04/05/2025	ND	206	103	200	1.37	
EXT DRO >C28-C36	<10.0	10.0	04/05/2025	ND					

Surrogate: 1-Chlorooctane 95.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 90.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 17.2 1-3' (H251969-03)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/05/2025	ND	196	98.2	200	0.0255	
DRO >C10-C28*	<10.0	10.0	04/05/2025	ND	206	103	200	1.37	
EXT DRO >C28-C36	<10.0	10.0	04/05/2025	ND					

Surrogate: 1-Chlorooctane 86.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 81.5 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 17.3 3-4' (H251969-04)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2840	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/05/2025	ND	196	98.2	200	0.0255	
DRO >C10-C28*	<10.0	10.0	04/05/2025	ND	206	103	200	1.37	
EXT DRO >C28-C36	<10.0	10.0	04/05/2025	ND					

Surrogate: 1-Chlorooctane 89.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 85.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 13 0-1' (H251969-05)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 67.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 60.0 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 14 0-4' (H251969-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M			mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53		
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17		
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND						

Surrogate: 1-Chlorooctane 79.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 15 0-4' (H251969-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 77.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 69.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS - 13.1 0-4' (H251969-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 75.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 68.1 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 13.1 4' (H251969-09)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7330	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 72.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 64.9 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 25.1 1' (H251969-10)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEx	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 71.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 62.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 31 4' (H251969-11)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53	
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	04/04/2025	ND	480	120	400	6.90	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 78.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 69.9 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 32 4' (H251969-12)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 84.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 75.6 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 33 4' (H251969-13)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	1.97	98.6	2.00	4.53		
Toluene*	<0.050	0.050	04/06/2025	ND	1.93	96.4	2.00	6.47		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.03	101	2.00	5.53		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	6.27	104	6.00	3.69		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1340	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 82.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 74.2 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 34 4' (H251969-14)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	2.06	103	2.00	4.89	
Toluene*	<0.050	0.050	04/06/2025	ND	2.19	109	2.00	4.10	QM-07
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.51	125	2.00	5.98	QM-07
Total Xylenes*	<0.150	0.150	04/06/2025	ND	7.67	128	6.00	6.85	QM-07
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 125 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	656	16.0	04/04/2025	ND	480	120	400	6.90		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53		
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17		
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND						

Surrogate: 1-Chlorooctane 84.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.6 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 35 4' (H251969-15)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2025	ND	2.06	103	2.00	4.89	
Toluene*	<0.050	0.050	04/06/2025	ND	2.19	109	2.00	4.10	
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.51	125	2.00	5.98	
Total Xylenes*	<0.150	0.150	04/06/2025	ND	7.67	128	6.00	6.85	
Total BTEX	<0.300	0.300	04/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 125 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3400	16.0	04/04/2025	ND	416	104	400	0.00	QM-07	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 73.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 66.5 % 40.6-153

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Analytical Results For:

VERTEX RESOURCE
 ANDREW PARKER
 3101 BOYD DRIVE
 CARLSBAD NM, 88220
 Fax To: NA

Received: 04/03/2025
 Reported: 04/09/2025
 Project Name: RUSSELL FEDERAL 19-30
 Project Number: 24E - 04568
 Project Location: NOT GIVEN

Sampling Date: 04/01/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS - 36 4' (H251969-16)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2025	ND	2.06	103	2.00	4.89		
Toluene*	<0.050	0.050	04/06/2025	ND	2.19	109	2.00	4.10		
Ethylbenzene*	<0.050	0.050	04/06/2025	ND	2.51	125	2.00	5.98		
Total Xylenes*	<0.150	0.150	04/06/2025	ND	7.67	128	6.00	6.85		
Total BTEX	<0.300	0.300	04/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 129 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1020	16.0	04/04/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2025	ND	194	97.1	200	1.53	
DRO >C10-C28*	<10.0	10.0	04/04/2025	ND	206	103	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	04/04/2025	ND					

Surrogate: 1-Chlorooctane 75.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 66.9 % 40.6-153

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex Resource Services (for Sahara Operating)										BILL TO		ANALYSIS REQUEST										
Project Manager: Andrew Parker										P.O. #: 24E-04568		BTX (8021)	TPH:8015D(GRO / DRO / MRO)	Chloride								
Address: 3101 Boyd Drive										Company: Vertex Resource												
City: Carlsbad State: NM Zip: 88220										Attn: Andrew Parker												
Phone #: 575.725.5001 Fax #:										Address: 3101 Boyd Drive												
Project #: 24E-04568 Project Owner: Rob McAlpine										City: Carlsbad												
Project Name: Russell Federal 19-30										State: NM Zip: 88220												
Project Location:										Phone #: 575.725.5001												
Sampler Name: S. McCarty										Fax #:												
FOR LAB USE ONLY																						
Lab I.D.	Sample I.D.	(GRAB OR C)OMP	# CONTAINERS	MATRIX						PRESERV.		SAMPLING										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME								
H251969																						
1	WS-16.2 0-4'	C	1			X							04.01.25	10:53	X	X	X					
2	WS-17.1 0-3'	C	1			X							04.01.25	10:39	X	X	X					
3	WS-17.2 1-3'	C	1			X							04.01.25	10:42	X	X	X					
4	WS-17.3 3-4' x	C	1			X							04.01.25	10:44	X	X	X					
5	WS-13 0-1' x	C	1			X							04.01.25	10:32	X	X	X					
6	WS-14 0-4'	C	1			X							04.01.25	11:00	X	X	X					
7	WS-15 0-4'	C	1			X							04.01.25	10:57	X	X	X					
8	WS-13.1 0-4'	C	1			X							04.01.25	11:15	X	X	X					
9	BS-13.1 4'	C	1			X							04.01.25	10:51	X	X	X					
10	BS-25.1 1'	C	1			X							04.01.25	10:35	X	X	X					

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Relinquished By: <i>Joseph May</i>		Date: <i>4-7-25</i>		Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: <i>18:00</i>				Please provide Email results to: Andrew Parker (aparker@vertexresource.com), Lakin Pullman (lpullman@vertexresource.com), permain@vertexresource.com, Stephanie McCarty (smccarty@vertexresource.com)			
Relinquished By:		Date: <i>4-3-25</i>		Received By: <i>Samira Chakraborty</i>		REMARKS: Bill to Vertex, Project Number 24E-04568, Incident #: nAPP2331855166			
		Time: <i>1315</i>				<i>*Customer requested Depth Changes</i>		<i>gr 4/3/25</i>	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C <i>-1.5</i> Corrected Temp. °C <i>-1.2</i>		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (Initials) <i>TO</i>		Turnaround Time: Standard <input checked="" type="checkbox"/> Bacteria (only) Sample Condition	
						Rush <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C			
						Thermometer ID #13 <i>#140</i> Correction Factor -0.5°C <i>+0.3°C</i> <i>gr 4/3/25</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C	



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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[illegible]

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Relinquished By: <i>Steph McCarty</i>		Date: <i>4-1-25</i>	Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
		Time: <i>14:00</i>			Please provide Email results to: Andrew Parker (aparker@vertexresource.com), Lakin Pullman (lpullman@vertexresource.com), perman@vertexresource.com, Stephanie McCarty (smccarty@vertexresource.com)	
Relinquished By:		Date: <i>4-3-25</i>	Received By: <i>Tamara Aldridge</i>		REMARKS: Bill to Vertex, Project Number 24E-04568, Incident #: nAPP2331855166	
		Time: <i>1315</i>				
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C Corrected Temp. °C <i>-1.5</i> <i>-1.2</i>	Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: (Initials) <i>SO</i>	Turnaround Time: Standard <input checked="" type="checkbox"/> Bacteria (only) Sample Condition Rush <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C Thermometer ID <i>#140</i> Correction Factor <i>+0.3°C</i> <i>4/3/25</i>	
					<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C	

FORM-006 R.3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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QUESTIONS

Action 460431

QUESTIONS

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2331855166
Incident Name	NAPP2331855166 RUSSELL FED 19-30 RELEASE @ 0
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received

Location of Release Source

Please answer all the questions in this group.

Site Name	RUSSELL FED 19-30 RELEASE
Date Release Discovered	10/31/2023
Surface Owner	Federal

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Other Coupling Produced Water Released: 0 BBL (Unknown Released Amount) Recovered: 0 BBL Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	At approximately 11:00 a.m., a representative of Applied Construction notified Sahara Operating, Inc that during the R-O-W preparation for the installation of a buried pipeline for MPLX that will cross Sahara's surface produced water transfer line, Applied Construction discovered a release from Sahara's poly line. The release occurred at a coupling in the line which, during repair, appeared to have been split due to stress from the construction of a cross-over or being ran over by vehicles. Sahara was not notified of this pipeline crossing. We will be evaluating exactly how this release occurred and may update OCD regarding the cause. *Initial estimation at the time of release is approximately 20 bbls. An estimate may be determined after characterization using chloride mass and/or soil saturation and will be included in subsequent submissions. All samples were dry during characterization to 4.3 ft BGS on 11/7/2023. Notice was given to Mr. Mike Bratcher via email on 11/01/2023 @ 11:58 am MST by Kristen Pope

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QUESTIONS, Page 2

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	False
All free liquids and recoverable materials have been removed and managed appropriately	False
If all the actions described above have not been undertaken, explain why	Volume of free liquids at the surface was insufficient for recovery and quickly drained to subsoil.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: George Mcalpine Title: Production Manager Email: shannon@saharaoper.com Date: 06/07/2024
--	---

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QUESTIONS, Page 3

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS**Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	12200
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	39.6
GRO+DRO (EPA SW-846 Method 8015M)	29.6
BTEX (EPA SW-846 Method 8021B or 8260B)	0.3
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	10/07/2024
On what date will (or did) the final sampling or liner inspection occur	10/23/2024
On what date will (or was) the remediation complete(d)	10/23/2024
What is the estimated surface area (in square feet) that will be reclaimed	2510
What is the estimated volume (in cubic yards) that will be reclaimed	558
What is the estimated surface area (in square feet) that will be remediated	2510
What is the estimated volume (in cubic yards) that will be remediated	558

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 4

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID:
	20077
	Action Number:
	460431
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	OWL LANDFILL JAL [JEG1635837366]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	No
OR is the off-site disposal site, to be used, an NMED facility	No
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Andrew Parker Title: Consultant Email: andrew@mcnabbpartners.com Date: 09/03/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	446588
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	04/02/2025
What was the (estimated) number of samples that were to be gathered	10
What was the sampling surface area in square feet	2000

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	6381
What was the total volume (cubic yards) remediated	1405
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	6381
What was the total volume (in cubic yards) reclaimed	1405
Summarize any additional remediation activities not included by answers (above)	Variance request for the NW portion of the remediated area included in the report.
<i>The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: Andrew Parker Title: Consultant Email: aparker@vertexresource.com Date: 05/09/2025

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QUESTIONS, Page 7

Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	6381
What was the total volume of replacement material (in cubic yards) for this site	1405
<i>Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.</i>	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeded commence(d)	05/05/2025
Summarize any additional reclamation activities not included by answers (above)	Surface reclamation completed with top layer of soil and seeded.
<i>The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeded plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: Andrew Parker Title: Consultant Email: aparker@vertexresource.com Date: 05/09/2025

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

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Action 460431

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460431
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
<i>Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.</i>	
Requesting a restoration complete approval with this submission	No
<i>Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.</i>	

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CONDITIONS

Action 460431

CONDITIONS

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CONDITIONS

Created By	Condition	Condition Date
nvez	None	7/2/2025