



Incident Number: NAPP2400529349

Incident Closure

North El Mar Unit 050 Injection Line Release

Section 35, Township 26 South, Range 32 East

County: Lea

32.00421, -103.65131

Vertex File Number: 24E-04576

Prepared for:

Sahara Operating Company

Prepared by:

Vertex Resource Services Inc.

Date:

May 2025

Sahara Operating Company
North El Mar Unit #50

Incident Closure
May 2025

North El Mar Unit #50
Section 35, Township 26 South, Range 32 East
County: Lea
32.00421, -103.65131
Vertex File Number: 24E-04576

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 9, 2025

Date

Sahara Operating Company
North El Mar Unit #50

Incident Closure
May 2025

Table of Contents

1.0 Introduction 1

2.0 Remedial Actions Taken 1

3.0 Reclamation Activities 2

4.0 Closure Request 2

5.0 Limitations 3

Sahara Operating Company
North El Mar Unit #50

Incident Closure
May 2025

List of Figures

Figure 1. Remediation Extent with Depths

Figure 2. Confirmation Sample Locations

List of Tables

Table 1. Confirmation Laboratory Results

List of Appendices

Appendix A. Daily Field Reports

Appendix B. Summary of Notifications

Appendix C. Laboratory Data Reports and Chain of Custody Forms

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 December 13, 2023, at an injection flowline along a right-of-way (ROW; hereafter referred to as the "site"). The Notification of Release was submitted to the New Mexico Oil Conservation Division (NMOCD) on January 5, 2024. Incident ID number NAPP2400529349 was assigned to this incident. The C-141 Initial was submitted to NMOCD's digital reporting system on October 28, 2024.

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

2.0 Remedial Actions Taken

Remediation efforts by Vertex personnel began on February 14, 2025, and were finalized on May 8, 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 A.

Impacted soils were removed to a depth of 4.1 to 4.5 feet below ground surface (bgs). 2,145 cubic yards of impacted soil was transported by a licensed waste hauler and disposed of Desert Environmental waste management facility.

Notification that confirmatory samples were being collected was provided to the NMOCD and a summary of notice confirmations is included in Appendix B. The Bureau of Land Management (BLM) variance approval to proceed to backfill accepting current analytical data for vertical delineation is included in Appendix B.

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 five 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 C. All confirmatory samples collected and analyzed were below closure criteria.

Closure Criteria are defined as depth-to-water 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

Base sample BS25-08 exceeded closure criteria relative to chloride at 4 feet bgs and then was successfully remediated at 4.5 feet bgs. The remainder of the samples were in compliance with closure criteria.

- Figure 1 shows remediation excavation extent with depth
- Figure 2 shows confirmation sample locations

3.0 Reclamation Activities

Following remediation activities, reclamation was completed to restore the surface to its current use as a utility ROW and pasture land in accordance with 19.15.29.13 NMAC.

The remediated areas were backfilled on April 25, 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. Seeding was completed on May 8, 2025. 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.

4.0 Closure Request

Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for soils impacted by a release where groundwater is greater than 100 feet below ground surface. 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
North El Mar Unit #50

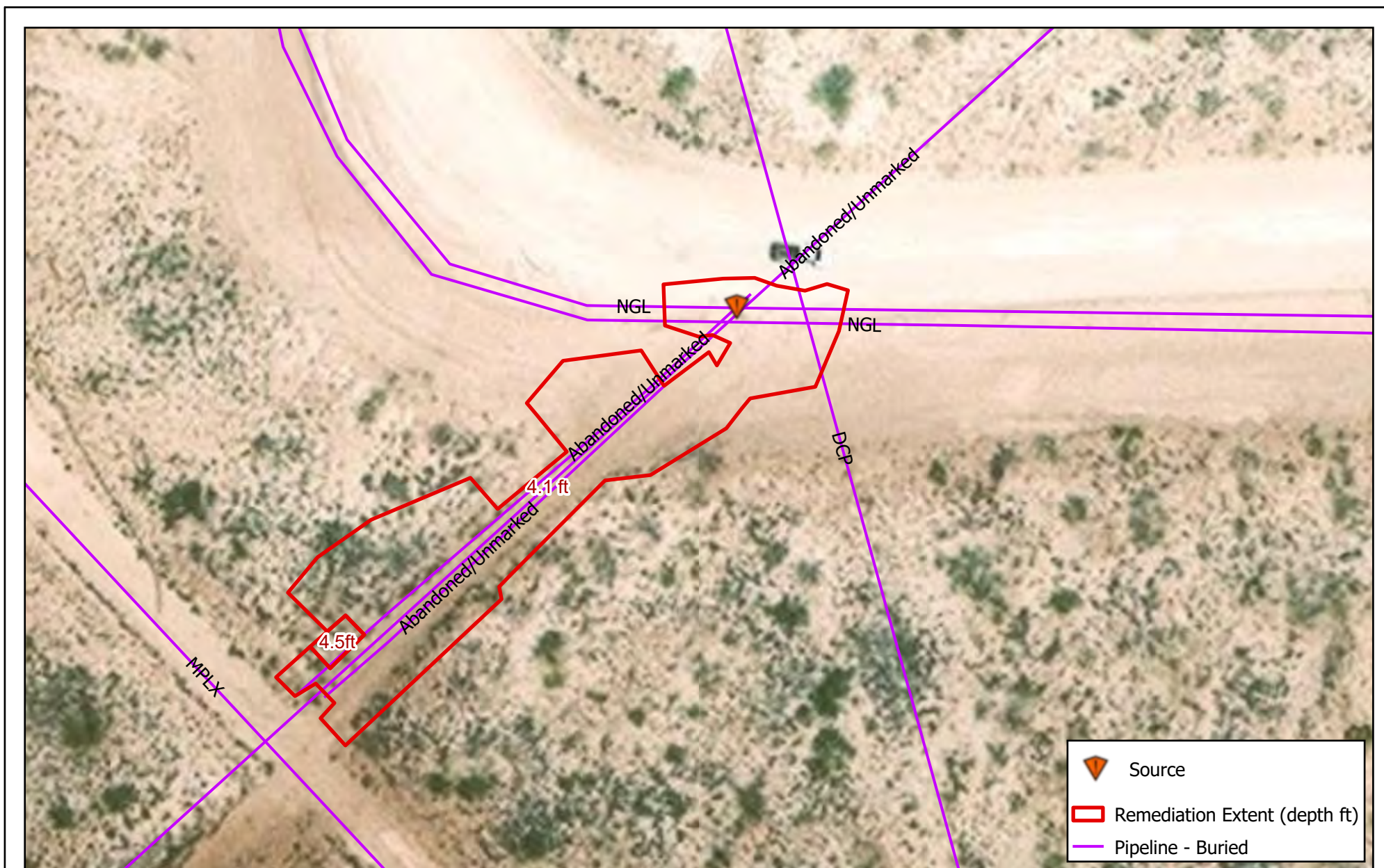
Incident Closure
May 2025

5.0 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



NAD 1983 StatePlane New Mexico East FIPS 3001 Feet
0 20 40 ft
Map Center:
Lat/Long: 32.004053°N, 103.651342°W
Date: Apr 11/25
N

Remediation Extent with Depths
North El Mar Unit #50
(NAPP2400529349)

FIGURE:

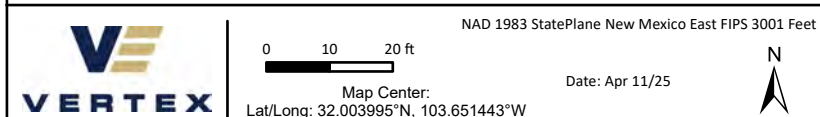
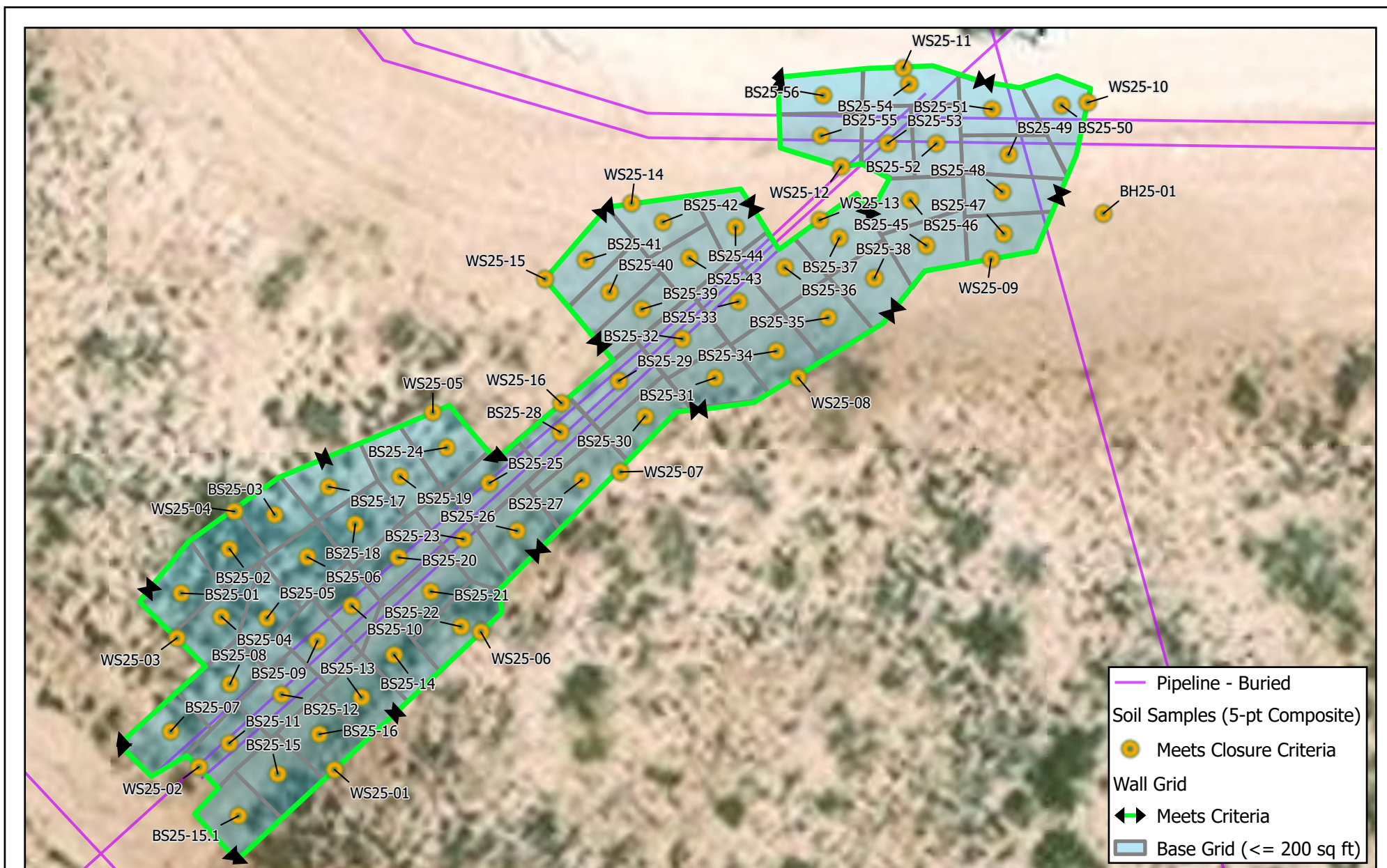
1

**Sahara Operating
Company**

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 and RT Hicks Consultants, 2024.

VERSATILITY. EXPERTISE.



Confirmation Soil Sample Locations
North El Mar Unit #50
(NAPP2400529349)

FIGURE:

2

Sahara Operating
Company

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 and RT Hicks Consultants, 2024.

VERSATILITY. EXPERTISE.

TABLES

Client Name: Sahara Operating Company
 Site Name: North El Mar Unit #50
 NMOCD Tracking #:nAPP2400529349
 Project #: 24E-04576
 Lab Report: H251186, H251322, H251543, H251824, H251823, H251764

Table 1: Confirmation Laboratory Results

Sample Description			Petroleum Hydrocarbons							
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					Inorganic
			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)	(mg/kg)			
DTW > 100ft; Medium Karst (BLM)										
Base Samples										
BS25-01	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	176
BS25-02	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS25-03	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	240
BS25-04	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	3,440
BS25-05	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	176
BS25-06	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS25-07	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
BS25-08	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	20,000
	4.5	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	4,280
BS25-09	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	2,200
BS25-10	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	256
BS25-11	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	1,310
BS25-12	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	1,150
BS25-13	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	7,600
BS25-14	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	2,480
BS25-15	4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	7,060
BS25-15.1	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	384
BS25-16	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	5,600
BS25-17	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	1,490
BS25-18	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	6,400
BS25-19	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	4,880
BS25-20	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	560
BS25-21	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	5,280
BS25-22	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS25-23	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	704
BS25-24	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	992
BS25-25	4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	2,190
BS25-26	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	512
BS25-27	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	2,320
BS25-28	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	3,640
BS25-29	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	7,600
BS25-30	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	3,560
BS25-31	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	6,640
BS25-32	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	13,300
BS25-33	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	8,400
BS25-34	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	7,460
BS25-35	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	6,800
BS25-36	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	6,240
BS25-37	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	2,720
BS25-38	4.1	March 13, 2025	ND	ND	ND	ND	ND	ND	ND	3,440
BS25-39	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	13,900
BS25-40	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	1,100
BS25-41	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	8,660
BS25-42	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	4,400
BS25-43	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	8,000

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 > 100ft; Medium Karst (BLM)										
BS25-44	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	4,400
BS25-45	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	4,000
BS25-46	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	8,000
BS25-47	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	144
BS25-48	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	368
BS25-49	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	2,080
BS25-50	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	4,000
BS25-51	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	7,440
BS25-52	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	12,200
BS25-53	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	2,640
BS25-54	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	8,530
BS25-55	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	12,000
BS25-56	4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	8,660
Wall Samples										
WS25-01	0 - 4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	96
WS25-02	0 - 4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
WS25-03	0 - 4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
WS25-04	0 - 4.1	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	128
WS25-05	0 - 4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	272
WS25-06	0 - 4.1	March 3, 2025	ND	ND	ND	ND	ND	ND	ND	80
WS25-07	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	256
WS25-08	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	544
WS25-09	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	368
WS25-10	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	416
WS25-11	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	528
WS25-12	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	544
WS25-13	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	560
WS25-14	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	432
WS25-15	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	80
WS25-16	0 - 4.1	March 25, 2025	ND	ND	ND	ND	ND	ND	ND	528
Backfill										
SS25-01	0	February 25, 2025	ND	ND	ND	ND	ND	ND	ND	32
BF-Soil	0	March 26, 2025	ND	ND	ND	ND	ND	ND	ND	32
BFNEMU-01	0	March 26, 2025	ND	ND	ND	ND	ND	ND	ND	48
BFNEMU-02	0	March 26, 2025	ND	ND	ND	ND	ND	ND	ND	48
BFNEMU-03	0	March 26, 2025	ND	ND	ND	ND	ND	ND	ND	32
"DTW" Depth to Water										
"ND" Not Detected at the Reporting Limit										
"- " indicates not analyzed/assessed										
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)										
Grey shaded indicated sample excavated/removed										

APPENDIX A -Daily Field Reports

Daily Site Visit Report



Field Notes

12:10 Abandoned line was windowed/ additional line was found

12:09 NGL line was windowed in several points

14:05 Windows were caution fenced

Next Steps & Recommendations

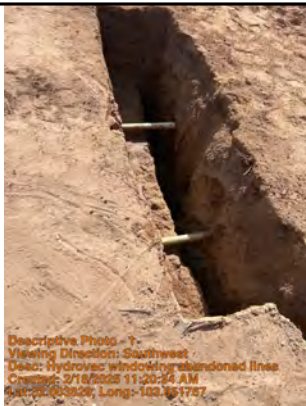
- 1** Dig 25' within NGL line with representative present
- 2** Additional windowing of lines running parallel down center of excavation
- 3** Continue excavation
- 4** Window DCP line and NGL intersection

Daily Site Visit Report



Site Photos

Viewing Direction: Southwest



Hydrovac windowing abandoned lines

Viewing Direction: Northeast



Hydrovac on NGL line

Viewing Direction: Southwest



SSA- 17

Viewing Direction: West



SSA-18



Daily Site Visit Report

Viewing Direction: East



SSA-19

Viewing Direction: North



NGL Line window

Viewing Direction: North



NGL LINE and abandoned intersection window

Viewing Direction: North



Second NGL line and abandoned line intersection

Daily Site Visit Report



Site Photos

Viewing Direction: North



West wall extended

Viewing Direction: East



Continued Hydrovacing

Viewing Direction: North



Loading trucks

Viewing Direction: Northeast



Current excavation

Daily Site Visit Report



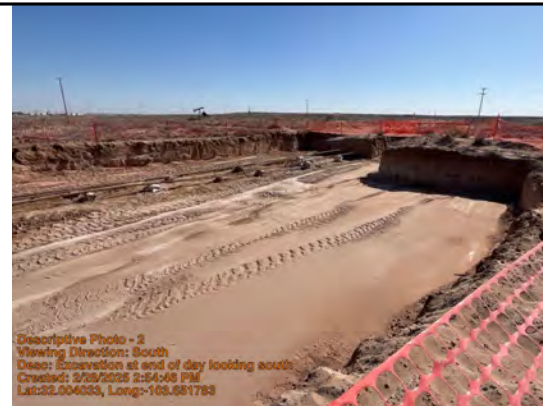
Site Photos

Viewing Direction: Southeast



Excavation at end of day looking south east

Viewing Direction: South



Excavation at end of day looking south

Viewing Direction: Northeast



Excavation from the south west looking north east

Viewing Direction: Northeast



From the south side looking north east

Daily Site Visit Report



Site Photos

Viewing Direction: Southeast



Looking from the northwest to the southeast over the excavation

Viewing Direction: Northeast



Looking from the southwest northeast over the new excavated area

Viewing Direction: Northeast



Hydrovacted area identified the southwest DCP line to be 8ft down

Viewing Direction: Northeast

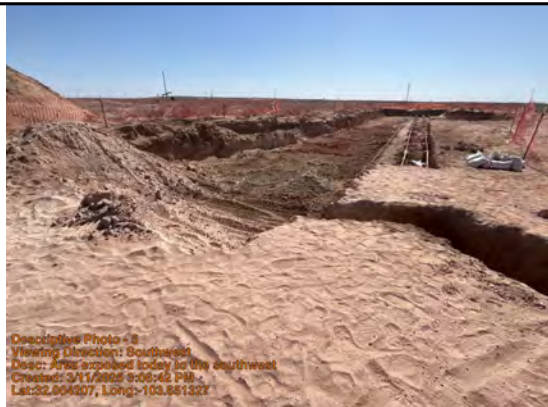


The northeast DCP line has still not been identified



Daily Site Visit Report

Viewing Direction: Southwest



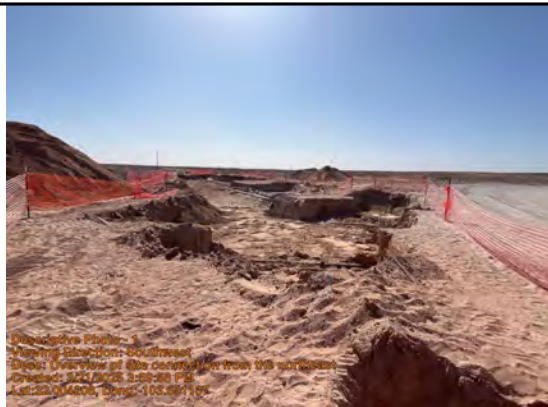
Area exposed today to the southwest

Daily Site Visit Report



Site Photos

Viewing Direction: Southwest



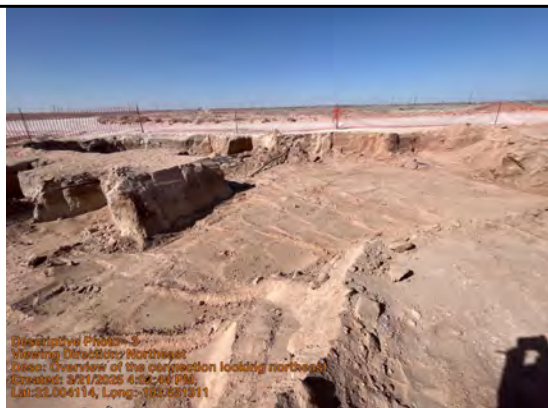
Overview of site connection from the northeast

Viewing Direction: Southwest



Overview of the connection to the southwest

Viewing Direction: Northeast



Overview of the connection looking northeast

Viewing Direction: Northeast



Excavation fenced off at the end of day

Daily Site Visit Report



Remediation Site Photos

Wednesday, May 7, 2025 at 2:24:08 PM
+32.004231,-103.650954
Lea County

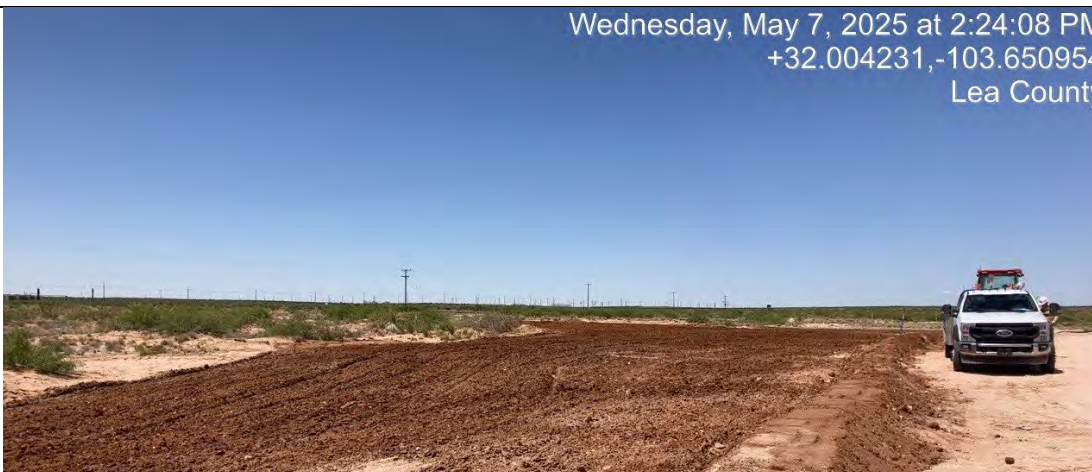


Photo 1: Surface reclamation viewing west-southwest from the northeast extent.

Wednesday, May 7, 2025 at 2:27:58 PM
+32.004033,-103.652293
Lea County

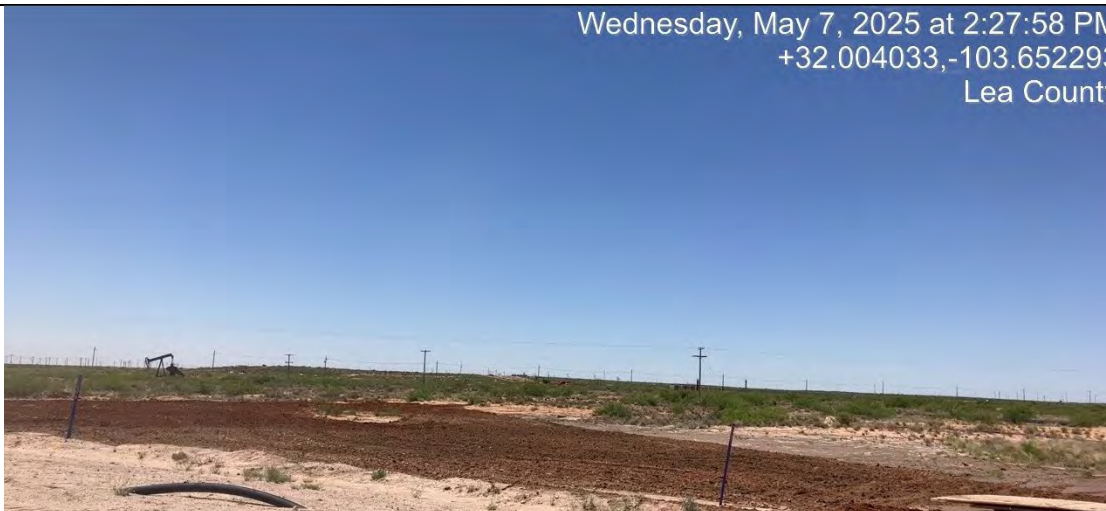


Photo 2: Surface reclamation viewing south-southeast from northwest extent.

May 7, 2025

Released to Imaging: 7/2/2025 10:55:58 AM

Page 1 of 1

APPENDIX B – Summary of Notifications

Appendix B.
 NMOCD Notification Summary
 BLM Variance Approval to Proceed with backfilling.

Incident Events Reproduced from NMOCD Digital Reporting

Date	Detail
03/20/2025	The (03/20/2025, C-141N) application [444427] was assigned to this incident.
03/11/2025	60-day time extension request is approved. Remediation Due date updated to May 9, 2025. Email submitted on 3/7/2025 from third party stated, "On the behalf of Sahara Operating, Vertex Resource Services, submits the attached extension request for the North El Mar Unit #50 release (nAPP2400529349). Three unmarked buried pipelines were discovered during line spotting activities. Working around the unmarked buried pipelines has significantly reduced the time required to complete the remediation. The closure report is due March 10, 2025. The proposed due date is May 9, 2025".
03/10/2025	The (03/10/2025, C-141N) application [440777] was assigned to this incident.
02/27/2025	The (02/27/2025, C-141N) application [436706] was assigned to this incident.
02/21/2025	The (02/21/2025, C-141N) application [434162] was assigned to this incident.
12/10/2024	App ID 407211: The remediation plan is approved as written. Sahara Operating has 90-days (March 10, 2025) to submit to OCD its appropriate or final remediation closure report.
12/10/2024	The (12/10/2024, C-141) application [407211] was accepted by OCD. The operator was emailed with details of this event.
12/10/2024	An application [407211] was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.
11/27/2024	The (12/10/2024, C-141) application [407211] was assigned to this incident.
10/28/2024	60-day time extension is approved. Remediation Due date updated to December 27, 2024.
10/28/2024	The (10/28/2024, C-141) application [396040] was accepted by OCD. The operator was emailed with details of this event.
10/28/2024	An application [396040] was submitted to OCD for review. It was submitted, indicating that it was an: [C-141] Application for administrative approval of a release notification and corrective action The operator was emailed confirmation of this event.
10/26/2024	The (10/28/2024, C-141) application [396040] was assigned to this incident.
01/05/2024	The (01/05/2024, NOR) application [299535] was assigned to this incident.

Date	Detail
01/05/2024	New incident created by the operator, upon the submission of notification of release.
12/13/2023	Release discovered by the operator.

From: [Morgan, Crisha A](#)
To: [Andrew Parker](#); [Amos, James A](#); [Morgan, Crisha A](#)
Cc: rob@saharaoper.com
Subject: Re: [EXTERNAL] FW: Sahara Operating NEMU 50 Remediation Plan
Date: Tuesday, April 8, 2025 6:47:12 AM
Attachments: [image002.png](#)
[Outlook-pdrc3rc1.png](#)
[Outlook-parjmgmz.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

Bureau of Land Management



The request for backfill for Sahara Operating NEMU 50 has been approved from the BLM as of 04/08/2025. More extensive work may be required during future major construction/alteration or final plugging and abandonment. Please keep in mind going forward, that BLM's #1 requirement for spills is complete vertical and horizontal delineation. As the NMOCD has already approved closure and your karst survey came back with negative results, the BLM approves a variance for the complete delineation and accepts the current analytical data.

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not re-vegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws/regulations.

If you have any questions or concerns, please let me know. Have a great day!

Crisha A. Morgan | Certified - Environmental Protection Specialist | Program Officer | COR | Spills Coordinator | Orphaned & Idled Well POC Lead
Bureau of Land Management | Carlsbad Field Office
620 E. Greene Street Carlsbad, NM 88220
Cell 575-200-8648 | Office 575-234-5987 | camorgan@blm.gov



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From: Andrew Parker <aparker@vertexresource.com>
Sent: Wednesday, April 2, 2025 11:21 AM
To: Amos, James A <jamoss@blm.gov>
Cc: Morgan, Crisha A <camorgan@blm.gov>; rob@saharaoper.com <rob@saharaoper.com>
Subject: [EXTERNAL] FW: Sahara Operating NEMU 50 Remediation Plan

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Jim,

Per our phone conversation, the North El Mar Unit #50 is one of two locations ready to be backfilled. As referenced in the below email, the first notification to BLM was on December 18th. A review of Vertex files has no response correspondence from the BLM. Sampling notifications were also submitted. Please advise if I need to change my correspondence methods.

We respectfully ask for BLM's approval to proceed with backfilling without vertical delineation to the most stringent NMOCD closure criteria per Table 1 of 19.15.29 NMAC. The location is in medium karst potential and is located in Sec 35; T26S. R32E. The attached map shows the excavation extent and sample locations. Also attached is a table of analytical results. Prior to excavation, we performed an EM Survey and an on-site assessment and did not observe karst or collapse features.

The NMOCD approved chloride closure criteria concentrations at <20,000 mg/kg below 4-feet (see attached). One base sample (BS25-08) at the southwestern extent exhibited 20,000 mg/kg at 4-feet below ground surface (bgs). In this area we excavated to 4.5-feet bgs and chloride exhibited 4,280 mg/kg. The remaining excavation area is at a 4-foot depth with all base samples below NMOCD approved closure criteria concentrations. Wall samples for horizontal delineation meet the most stringent closure criteria.

Three unmarked pipelines (photo below) transected the remediation from the southwest to the northeast. Remediation required extensive hydrovac activities.

Photos of unmarked pipelines; viewing southwest.



Thank you for your consideration,

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: Andrew Parker

Sent: Monday, February 3, 2025 5:02 PM

To: blm_nm_cfo_spill@blm.gov

Cc: Amos, James <jamos@blm.gov>; Chad Hensley <CHensley@vertexresource.com>

Subject: FW: Sahara Operating NEMU 50 Remediation Plan

BLM,

Vertex respectfully asks the BLM for review and approval of the attached remediation plan originally submitted on December 18, 2024. A Cultural Survey found no areas of cultural interest near the proposed remediation area. Work is anticipated to begin next week.

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: Andrew Parker

Sent: Wednesday, December 18, 2024 4:00 PM

To: blm_nm_cfo_spill@blm.gov

Cc: Martinez-Colon, Jose F <jfmartinezcolon@blm.gov>

Subject: Sahara Operating NEMU 50 Remediation Plan

BLM,

For BLMs approval, attached is the remediation plan for NMOCD Incident # NAPP2400529349. NMOCD approved the remediation plan on December 10, 2024. We are conducting a Cultural Properties review and will revise the remediation plan if survey results show any conflicts. Remedial activities will commence mid-January.

Please contact me with any questions,

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

Sent: Tuesday, December 10, 2024 11:14 AM

To: Andrew Parker <aparker@vertexresource.com>

Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 407211

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

To whom it may concern (c/o Andrew Parker for SAHARA OPERATING CO),
The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2400529349,
with the following conditions:

- **The remediation plan is approved as written. Sahara Operating has 90-days (March 10, 2025) to submit to OCD its appropriate or final remediation closure report.**

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

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

Thank you,

Nelson Velez

Environmental Specialist - Advanced

505-469-6146

Nelson.Velez@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department

1220 South St. Francis Drive

Santa Fe, NM 87505

APPENDIX C – Laboratory Data Report and Chain of Custody Form

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

March 06, 2025

ANDREW PARKER

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: NORTH EL MAR 50

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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BS 25 - 12 4.1'	H251186-01	Soil	25-Feb-25 13:00	27-Feb-25 14:00
BS 25 - 13 4.1'	H251186-02	Soil	25-Feb-25 13:30	27-Feb-25 14:00
BS 25 - 15 4.1'	H251186-03	Soil	25-Feb-25 14:00	27-Feb-25 14:00
BS 25 - 16 4.1'	H251186-04	Soil	25-Feb-25 14:30	27-Feb-25 14:00
BS 25 - 17 4.1'	H251186-05	Soil	25-Feb-25 15:00	27-Feb-25 14:00
BS 25 - 18 4.1'	H251186-06	Soil	25-Feb-25 15:30	27-Feb-25 14:00
BS 25 - 19 4.1'	H251186-07	Soil	25-Feb-25 16:00	27-Feb-25 14:00
WS 25 - 01 0-4.1'	H251186-08	Soil	25-Feb-25 16:30	27-Feb-25 14:00
WS 25 - 02 0-4.1'	H251186-09	Soil	25-Feb-25 17:00	27-Feb-25 14:00
WS 25 - 03 0-4.1'	H251186-10	Soil	25-Feb-25 17:30	27-Feb-25 14:00
BS 25 - 01 4.1'	H251186-11	Soil	25-Feb-25 08:00	27-Feb-25 14:00
BS 25 - 02 4.1'	H251186-12	Soil	25-Feb-25 08:30	27-Feb-25 14:00
BS 25 - 03 4.1'	H251186-13	Soil	25-Feb-25 09:00	27-Feb-25 14:00
BS 25 - 04 4.1'	H251186-14	Soil	25-Feb-25 09:30	27-Feb-25 14:00
BS 25 - 05 4.1'	H251186-15	Soil	25-Feb-25 10:00	27-Feb-25 14:00
BS 25 - 06 4.1'	H251186-16	Soil	25-Feb-25 10:30	27-Feb-25 14:00
BS 25 - 07 4.1'	H251186-17	Soil	25-Feb-25 11:00	27-Feb-25 14:00
BS 25 - 08 4.1'	H251186-18	Soil	25-Feb-25 11:30	27-Feb-25 14:00
BS 25 - 09 4.1'	H251186-19	Soil	25-Feb-25 12:00	27-Feb-25 14:00
BS 25 - 11 4.1'	H251186-20	Soil	25-Feb-25 12:30	27-Feb-25 14:00
WS 25 - 04 0-4.1'	H251186-21	Soil	25-Feb-25 18:00	27-Feb-25 14:00
SS 25 - 01 0'	H251186-22	Soil	25-Feb-25 18:30	27-Feb-25 14:00

03/06/25 - Client changed the sample IDs on -01 thru -07 (see COC). This is the revised report and will replace the one sent on 03/05/25.

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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 12 4.1'**H251186-01 (Soil)**

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

Chloride	1150		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	QM-07
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 97.1 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 95.5 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 13 4.1'**H251186-02 (Soil)**

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

Chloride	7600		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 94.7 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 95.7 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 92.7 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 15 4.1'**H251186-03 (Soil)**

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

Chloride	7060		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 98.9 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 94.9 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 16 4.1'**H251186-04 (Soil)**

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

Chloride	5600		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 94.4 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 98.1 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 94.2 % 63.9-155 5030305 MS 03-Mar-25 8015B

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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 17 4.1'**H251186-05 (Soil)**

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

Chloride	1490		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 98.9 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 93.9 % 63.9-155 5030305 MS 03-Mar-25 8015B

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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 18 4.1'**H251186-06 (Soil)**

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

Chloride	6400		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			95.9 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			95.0 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			92.3 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 19 4.1'**H251186-07 (Soil)**

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

Chloride	4880		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			97.4 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			72.1 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			69.3 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

WS 25 - 01 0-4.1'**H251186-08 (Soil)**

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

Chloride	96.0		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 94.6 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 90.1 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

WS 25 - 02 0-4.1'**H251186-09 (Soil)**

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

Chloride	32.0		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	96.1 %	71.5-134	5030304	JH	03-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	95.3 %	71.8-148	5030305	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	91.4 %	63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

WS 25 - 03 0-4.1'**H251186-10 (Soil)**

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

Chloride	32.0		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			95.0 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			98.6 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			93.9 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 01 4.1'**H251186-11 (Soil)**

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

Chloride	176		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			95.0 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			90.7 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			84.7 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 02 4.1'**H251186-12 (Soil)**

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

Chloride	32.0		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			96.6 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			91.0 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			84.3 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 03 4.1'**H251186-13 (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	5030316	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	5030304	JH	03-Mar-25	8021B
Toluene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B
Ethylbenzene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B
Total Xylenes*	<0.150	0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B
Total BTEX	<0.300	0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B

Surrogate: 4-Bromofluorobenzene (PID)	96.1 %	71.5-134	5030304	JH	03-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	97.6 %	71.8-148	5030305	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	93.5 %	63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 04 4.1'**H251186-14 (Soil)**

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

Chloride	3440		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B
Toluene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B
Ethylbenzene*	<0.050	0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B
Total Xylenes*	<0.150	0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B
Total BTEX	<0.300	0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B

Surrogate: 4-Bromofluorobenzene (PID)	96.7 %	71.5-134	5030304	JH	03-Mar-25	8021B
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B

Surrogate: 1-Chlorooctane	99.2 %	71.8-148	5030305	MS	03-Mar-25	8015B
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Surrogate: 1-Chlorooctadecane	96.3 %	63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 05 4.1'**H251186-15 (Soil)**

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

Chloride	176		16.0	mg/kg	4	5030316	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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			96.1 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			98.5 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			94.3 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 06 4.1'**H251186-16 (Soil)**

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

Chloride	32.0		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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			96.0 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			94.8 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			89.0 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 07 4.1'**H251186-17 (Soil)**

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

Chloride	32.0		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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			97.1 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

<i>Surrogate: 1-Chlorooctane</i>			95.1 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			89.6 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 08 4.1'**H251186-18 (Soil)**

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

Chloride	20000		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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 93.2 % 71.8-148 5030305 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 91.5 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 09 4.1'**H251186-19 (Soil)**

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

Chloride	2200		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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			96.4 %		71.5-134	5030304	JH	03-Mar-25	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane			95.9 %		71.8-148	5030305	MS	03-Mar-25	8015B	
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Surrogate: 1-Chlorooctadecane			92.7 %		63.9-155	5030305	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

BS 25 - 11 4.1'**H251186-20 (Soil)**

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

Chloride	1310		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	5030304	JH	03-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030304	JH	03-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030304	JH	03-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 71.5-134 5030304 JH 03-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030305	MS	04-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030305	MS	04-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030305	MS	04-Mar-25	8015B	

Surrogate: 1-Chlorooctane 95.4 % 71.8-148 5030305 MS 04-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 88.9 % 63.9-155 5030305 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

WS 25 - 04 0-4.1'**H251186-21 (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	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	5030319	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030319	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134 5030319 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 93.9 % 71.8-148 5030306 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 99.6 % 63.9-155 5030306 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

SS 25 - 01 0'
H251186-22 (Soil)

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

Chloride	32.0		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	5030319	JH	04-Mar-25	8021B	
Toluene*	<0.050		0.050	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	5030319	JH	04-Mar-25	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	5030319	JH	04-Mar-25	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134 5030319 JH 04-Mar-25 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	5030306	MS	03-Mar-25	8015B	

Surrogate: 1-Chlorooctane 101 % 71.8-148 5030306 MS 03-Mar-25 8015B

Surrogate: 1-Chlorooctadecane 110 % 63.9-155 5030306 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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

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 5030316 - 1:4 DI Water**Blank (5030316-BLK1)**

Prepared & Analyzed: 03-Mar-25

Chloride	ND	16.0	mg/kg							
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LCS (5030316-BS1)

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120			
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LCS Dup (5030316-BSD1)

Prepared & Analyzed: 03-Mar-25

Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
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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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

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 5030304 - Volatiles**Blank (5030304-BLK1)**

Prepared & 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)	ND		mg/kg	0.0500		95.0	71.5-134			

LCS (5030304-BS1)

Prepared & Analyzed: 03-Mar-25

Benzene	1.95	0.050	mg/kg	2.00		97.4	82.8-130			
Toluene	2.04	0.050	mg/kg	2.00		102	86-128			
Ethylbenzene	1.98	0.050	mg/kg	2.00		98.9	85.9-128			
m,p-Xylene	3.88	0.100	mg/kg	4.00		97.0	89-129			
o-Xylene	1.94	0.050	mg/kg	2.00		96.9	86.1-125			
Total Xylenes	5.82	0.150	mg/kg	6.00		97.0	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0463		mg/kg	0.0500		92.6	71.5-134			

LCS Dup (5030304-BSD1)

Prepared & Analyzed: 03-Mar-25

Benzene	1.95	0.050	mg/kg	2.00		97.5	82.8-130	0.197	15.8	
Toluene	2.05	0.050	mg/kg	2.00		103	86-128	0.699	15.9	
Ethylbenzene	2.01	0.050	mg/kg	2.00		100	85.9-128	1.47	16	
m,p-Xylene	3.93	0.100	mg/kg	4.00		98.3	89-129	1.31	16.2	
o-Xylene	1.97	0.050	mg/kg	2.00		98.4	86.1-125	1.52	16.7	
Total Xylenes	5.90	0.150	mg/kg	6.00		98.3	88.2-128	1.38	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0466		mg/kg	0.0500		93.1	71.5-134			

Batch 5030319 - Volatiles**Blank (5030319-BLK1)**

Prepared: 03-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							

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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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

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 5030319 - Volatiles**Blank (5030319-BLK1)**

Prepared: 03-Mar-25 Analyzed: 04-Mar-25

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0536		mg/kg	0.0500		107	71.5-134			

LCS (5030319-BS1)

Prepared: 03-Mar-25 Analyzed: 04-Mar-25

Benzene	1.86	0.050	mg/kg	2.00		93.2	82.8-130			
Toluene	2.00	0.050	mg/kg	2.00		100	86-128			
Ethylbenzene	2.04	0.050	mg/kg	2.00		102	85.9-128			
m,p-Xylene	4.29	0.100	mg/kg	4.00		107	89-129			
o-Xylene	2.03	0.050	mg/kg	2.00		102	86.1-125			
Total Xylenes	6.32	0.150	mg/kg	6.00		105	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0517		mg/kg	0.0500		103	71.5-134			

LCS Dup (5030319-BS1)

Prepared: 03-Mar-25 Analyzed: 04-Mar-25

Benzene	1.92	0.050	mg/kg	2.00		96.0	82.8-130	3.03	15.8	
Toluene	2.05	0.050	mg/kg	2.00		103	86-128	2.48	15.9	
Ethylbenzene	2.10	0.050	mg/kg	2.00		105	85.9-128	2.59	16	
m,p-Xylene	4.42	0.100	mg/kg	4.00		111	89-129	3.14	16.2	
o-Xylene	2.09	0.050	mg/kg	2.00		104	86.1-125	2.76	16.7	
Total Xylenes	6.51	0.150	mg/kg	6.00		109	88.2-128	3.01	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0508		mg/kg	0.0500		102	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: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

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 5030305 - General Prep - Organics**Blank (5030305-BLK1)**

Prepared & 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	50.3		mg/kg	50.0		101	71.8-148			
Surrogate: 1-Chlorooctadecane	49.1		mg/kg	50.0		98.2	63.9-155			

LCS (5030305-BS1)

Prepared & Analyzed: 03-Mar-25

GRO C6-C10	192	10.0	mg/kg	200		96.2	81.5-123			
DRO >C10-C28	185	10.0	mg/kg	200		92.4	77.7-122			
Total TPH C6-C28	377	10.0	mg/kg	400		94.3	80.9-121			
Surrogate: 1-Chlorooctane	53.0		mg/kg	50.0		106	71.8-148			
Surrogate: 1-Chlorooctadecane	53.0		mg/kg	50.0		106	63.9-155			

LCS Dup (5030305-BS1)

Prepared & Analyzed: 03-Mar-25

GRO C6-C10	200	10.0	mg/kg	200		100	81.5-123	4.08	13	
DRO >C10-C28	192	10.0	mg/kg	200		96.0	77.7-122	3.84	15.6	
Total TPH C6-C28	392	10.0	mg/kg	400		98.1	80.9-121	3.96	18.5	
Surrogate: 1-Chlorooctane	56.5		mg/kg	50.0		113	71.8-148			
Surrogate: 1-Chlorooctadecane	55.8		mg/kg	50.0		112	63.9-155			

Batch 5030306 - General Prep - Organics**Blank (5030306-BLK1)**

Prepared & 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	56.1		mg/kg	50.0		112	71.8-148			
Surrogate: 1-Chlorooctadecane	60.9		mg/kg	50.0		122	63.9-155			

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Analytical Results For:

VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD NM, 88220

Project: NORTH EL MAR 50
Project Number: 24E - 04576
Project Manager: ANDREW PARKER
Fax To: NA

Reported:
06-Mar-25 18:06

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 5030306 - General Prep - Organics**LCS (5030306-BS1)**

Prepared & Analyzed: 03-Mar-25

GRO C6-C10	198	10.0	mg/kg	200		99.1	81.5-123			
DRO >C10-C28	206	10.0	mg/kg	200		103	77.7-122			
Total TPH C6-C28	405	10.0	mg/kg	400		101	80.9-121			
Surrogate: 1-Chlorooctane	57.4		mg/kg	50.0		115	71.8-148			
Surrogate: 1-Chlorooctadecane	60.4		mg/kg	50.0		121	63.9-155			

LCS Dup (5030306-BS1)

Prepared & Analyzed: 03-Mar-25

GRO C6-C10	200	10.0	mg/kg	200		99.9	81.5-123	0.840	13	
DRO >C10-C28	210	10.0	mg/kg	200		105	77.7-122	1.82	15.6	
Total TPH C6-C28	410	10.0	mg/kg	400		103	80.9-121	1.34	18.5	
Surrogate: 1-Chlorooctane	59.4		mg/kg	50.0		119	71.8-148			
Surrogate: 1-Chlorooctadecane	63.9		mg/kg	50.0		128	63.9-155			

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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.
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

1013

Company Name: Vertex Resource Group		P.O. #:		BILL TO		ANALYSIS REQUEST	
Project Manager: Andrew Parker		Company: Vertex					
Address:		Attn:					
City: Albuquerque		State: NM		Zip: 87106			
Phone #: 505-241-5716		Fax #: 505-241-5716		Address: Albuquerque			
Project #: 24E-04576		Project Owner:		City: Albuquerque			
Project Name: North El Mar SO		State: NM		Zip: 87106			
Project Location:		Phone #:		Fax #:			
Sampler Name: KATRINA TAYLOR		FOR LAB USE ONLY					
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS	
Matrix		PRESERV		SAMPLING			
DATE		TIME					
1/25		13:00		X		Chlorides	
1/25		13:30		X		GRO, PRO, MRO	
1/25		14:00		X		BTEX	
1/25		14:30					
1/25		15:00					
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1/25		00:30					
1/25		01:00					



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex resource Group Project Manager: Andrew Parker Address: City: on file State: Zip: Phone #: Fax #: Project #: 24E-045 Project Owner: Project Name: North el Mar SO Project Location: Sampler Name: Katrina Taylor FOR LAB USE ONLY		P.O. #: Company: Vertex Attn: on file Address: City: State: Zip: Phone #: Fax #:	
Lab I.D. Sample I.D.		Matrix <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input checked="" type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER : <input type="checkbox"/> ACID/BASE: <input checked="" type="checkbox"/> ICE / COOL <input type="checkbox"/> OTHER :	
Lab I.D. Sample I.D.		DATE TIME 2/25 8:00 12 8:30 13 9:00 14 9:30 15 10:00 16 10:30 17 11:00 18 11:30 19 12:00 20 12:30	
Lab I.D. Sample I.D.		Chlorides Gro, Dro, MRO Btex	

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Relinquished By: <i>Katrina Taylor</i> Date: 2/27 Time: 8:00 Date: 1/20 Time:	Received By: <i>Marianne S. [Signature]</i> Date: 2/27 Time: 1400 Date: 1/20 Time:
Relinquished By: <i>Katrina Taylor</i> Date: 2/27 Time: 1400 Date: 1/20 Time:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	
Observed Temp. °C 31 Corrected Temp. °C 34 Sample Condition <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
CHECKED BY: <i>VO.</i> Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID: #140 Correction Factor: -0.5C Bacteria (only) <input type="checkbox"/> Sample Condition <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
REMARKS: All Results are emailed. Please provide Email address:	



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: **Vertex Resource Group**

Project Manager: **Andrew Parker**

Address:

City:

State:

Zip:

Phone #:

Fax #:

Project #: **24E-04576**

Project Owner:

Project Name: **North El MAR 50**

Project Location:

Sampler Name: **KATRINA TAYLOR**

P.O. #:

Company: **Vertex**

Attn:

Address: **on file**

City:

State:

Zip:

Phone #:

Fax #:

BILL TO

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	DATE	TIME	Chlorides	GRO, DRO, MRO	BTEX
HS1186	WS25-04	0-4.1		SOIL			2/25	18:00	X	X	X
	SS25-01	01		SLUDGE				18:30	X	X	X

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Relinquished By:

Date: **2/27**

Received By:

Verbal Result: ☐ Yes ☐ No ☒ Add'l Phone #:

All Results are emailed. Please provide Email address:

Turnaround Time:

Standard **RUSH**

Bacteria (only) Sample Condition

Cool Intact

Observed Temp. °C

Corrected Temp. °C

Relinquished By: **Kathina Taylor**

Date: **2/27**

Received By: **Kathina Taylor**

Verbal Result: ☐ Yes ☐ No ☒ Add'l Phone #:

All Results are emailed. Please provide Email address:

Turnaround Time:

Standard **RUSH**

Bacteria (only) Sample Condition

Cool Intact

Observed Temp. °C

Corrected Temp. °C

Delivered By: (Circle One)

Observed Temp. °C

Corrected Temp. °C

Sample Condition

CHECKED BY: (Initials)

Thermometer ID

Correction Factor

Standard **RUSH**

Bacteria (only) Sample Condition

Cool Intact

Observed Temp. °C

Corrected Temp. °C

FORM-008 K 3-2-10/07/21

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



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

March 12, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: NORTH EL MAR 50

Enclosed are the results of analyses for samples received by the laboratory on 03/06/25 14:30.

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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 10 4.1 (H251322-01)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	QM-07
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	QM-07
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	QM-07
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	QM-07
Total BTEX	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	03/07/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 123 % 44.4-145

Surrogate: 1-Chlorooctadecane 124 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 14 4.1 (H251322-02)

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	03/07/2025	ND	1.93	96.5	2.00	0.603		
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428		
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18		
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32		
Total BTEx	<0.300	0.300	03/07/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	2480	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 125 % 44.4-145

Surrogate: 1-Chlorooctadecane 127 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 20 4.1 (H251322-03)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTX	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	560	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 118 % 44.4-145

Surrogate: 1-Chlorooctadecane 118 % 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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 21 4.1 (H251322-04)

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	03/07/2025	ND	1.93	96.5	2.00	0.603		
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428		
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18		
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32		
Total BTEX	<0.300	0.300	03/07/2025	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	5280	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 113 % 44.4-145

Surrogate: 1-Chlorooctadecane 114 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 22 4.1 (H251322-05)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEX	<0.300	0.300	03/07/2025	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	2080	16.0	03/07/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 113 % 44.4-145

Surrogate: 1-Chlorooctadecane 112 % 40.6-153

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

Received: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 23 4.1 (H251322-06)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEX	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 106 % 44.4-145

Surrogate: 1-Chlorooctadecane 104 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 24 4.1 (H251322-07)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEX	<0.300	0.300	03/07/2025	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	992	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 113 % 44.4-145

Surrogate: 1-Chlorooctadecane 111 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 25 4.1 (H251322-08)

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	03/07/2025	ND	1.93	96.5	2.00	0.603		
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428		
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18		
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32		
Total BTEX	<0.300	0.300	03/07/2025	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	2190	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 115 % 44.4-145

Surrogate: 1-Chlorooctadecane 113 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 26 4.1 (H251322-09)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEX	<0.300	0.300	03/07/2025	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	512	16.0	03/07/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 104 % 44.4-145

Surrogate: 1-Chlorooctadecane 103 % 40.6-153

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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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BS 25 - 15.1 4.1 (H251322-10)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTX	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	384	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 118 % 44.4-145

Surrogate: 1-Chlorooctadecane 116 % 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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS 25 - 05 0-4.1 (H251322-11)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEx	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	272	16.0	03/07/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 108 % 44.4-145

Surrogate: 1-Chlorooctadecane 107 % 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: 03/06/2025
 Reported: 03/12/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/03/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WS 25 - 06 0-4.1 (H251322-12)

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	03/07/2025	ND	1.93	96.5	2.00	0.603	
Toluene*	<0.050	0.050	03/07/2025	ND	2.03	102	2.00	0.428	
Ethylbenzene*	<0.050	0.050	03/07/2025	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/07/2025	ND	6.21	103	6.00	1.32	
Total BTEx	<0.300	0.300	03/07/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	03/07/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/07/2025	ND	216	108	200	6.58	
DRO >C10-C28*	<10.0	10.0	03/07/2025	ND	200	100	200	6.81	
EXT DRO >C28-C36	<10.0	10.0	03/07/2025	ND					

Surrogate: 1-Chlorooctane 115 % 44.4-145

Surrogate: 1-Chlorooctadecane 113 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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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.
- 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

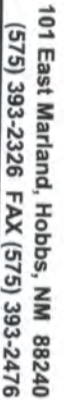
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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Page 15 of 16

Released to Imaging: 7/2/2025 10:55:58 AM



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex Resource Group Project Manager: Andrew Parker Address: 3101 Boyd dr City: Carlbad State: NM Zip: 88220 Phone #: 575 725 5001 Fax #: Project #: 24 E - 04576 Project Owner: Project Name: North El Mar 50 Project Location: Rural Lea County Sample Name: Katrina Taylor FOR LAB USE ONLY				BILL TO P.O. #: Company: Vertex Address: 3101 Boyd dr City: Carlbad State: NM Zip: 88220 Phone #: 575 725 5001 Fax #:				ANALYSIS REQUEST			
Lab I.D. H251322 11 12 WS25-05 WS25-06 0-4.1 0-4.1				Sample I.D. (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DATE TIME				Chloride Gro, Dro, MRO BTEX			
Relinquished By: [Signature] Date: 3/5 Time: 8:00 Received By: [Signature] Date: 3-6-25 Time: 1430 Received By: [Signature]				Observed Temp. °C 24 Corrected Temp. °C 27 Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CHECKED BY: [Signature] Turnaround Time: b116 Vertex Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #140 Correction Factor -0.8°C +0.3°C Bacteria (only) <input checked="" type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Observed Temp. °C Corrected Temp. °C							



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

March 21, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: NORTH EL MAR

Enclosed are the results of analyses for samples received by the laboratory on 03/17/25 12:10.

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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 08 4.5 (H251543-01)

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	03/18/2025	ND	2.05	103	2.00	5.88	
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72	
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56	
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54	
Total BTEX	<0.300	0.300	03/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	4280	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 106 % 44.4-145

Surrogate: 1-Chlorooctadecane 99.0 % 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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 27 4.1 (H251543-02)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	2320	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 94.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 86.3 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 28 4.1 (H251543-03)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	3640	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 107 % 44.4-145

Surrogate: 1-Chlorooctadecane 99.4 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 29 4.1 (H251543-04)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	7600	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 109 % 44.4-145

Surrogate: 1-Chlorooctadecane 102 % 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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 30 4.1 (H251543-05)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	3560	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 97.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 88.9 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 31 4.1 (H251543-06)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	6640	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	196	98.2	200	0.980	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	190	94.9	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 107 % 44.4-145

Surrogate: 1-Chlorooctadecane 99.0 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 32 4.1 (H251543-07)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	13300	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 103 % 44.4-145

Surrogate: 1-Chlorooctadecane 101 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 33 4.1 (H251543-08)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	8400	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 104 % 44.4-145

Surrogate: 1-Chlorooctadecane 102 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 34 4.1 (H251543-09)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	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	7460	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 88.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 84.7 % 40.6-153

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Analytical Results For:

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

Received: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 35 4.1 (H251543-10)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	6800	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 95.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 99.3 % 40.6-153

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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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 36 4.1 (H251543-11)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	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	6240	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 107 % 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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 37 4.1 (H251543-12)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	2720	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 101 % 44.4-145

Surrogate: 1-Chlorooctadecane 97.8 % 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: 03/17/2025
 Reported: 03/21/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/13/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Shalyn Rodriguez

Sample ID: BS 25 - 38 4.1 (H251543-13)

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	03/18/2025	ND	2.05	103	2.00	5.88		
Toluene*	<0.050	0.050	03/18/2025	ND	2.11	105	2.00	3.72		
Ethylbenzene*	<0.050	0.050	03/18/2025	ND	2.13	106	2.00	2.56		
Total Xylenes*	<0.150	0.150	03/18/2025	ND	6.47	108	6.00	4.54		
Total BTEX	<0.300	0.300	03/18/2025	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3440	16.0	03/18/2025	ND	448	112	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	03/18/2025	ND	204	102	200	1.83	
DRO >C10-C28*	<10.0	10.0	03/18/2025	ND	199	99.3	200	1.39	
EXT DRO >C28-C36	<10.0	10.0	03/18/2025	ND					

Surrogate: 1-Chlorooctane 107 % 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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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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: VERTEX RESOURCE GROUP Project Manager: ANPELW PARKER Address: 3101 Boyd Dr City: Carlsbad State: NM Zip: 88220 Phone #: Fax #: Project #: 24E-04576 Project Owner: Project Name: NORTH EL MAR Project Location: RURAL LGA Sampler Name: KATRINA TAYLOR FOR LAB USE ONLY				BILL TO P.O. #: Company: vertex Attn: Address: 3101 Boyd City: Carlsbad State: NM Zip: 88220 Phone #: Fax #:				ANALYSIS REQUEST			
Lab I.D. Sample I.D.		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV SAMPLING		DATE TIME		ANALYSIS			
1 BS25-08 4.5 2 BS25-27 4.1 3 BS25-28 4.1 4 BS25-29 4.1 5 BS25-30 4.1 6 BS25-31 4.1 7 BS25-32 4.1 8 BS25-33 4.1 9 BS25-34 4.1 10 BS25-35 4.1		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		DATE TIME		ANALYSIS		Chloride GRO, PRO, MRO BTGX			
Relinquished By: Katrina Taylor		Date: 5/14 Received By:		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) <input type="checkbox"/> Sample Condition <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C <input type="checkbox"/> Corrected Temp. °C <input type="checkbox"/>		Remarks: A Parker@vertexresource.com & Katrina.Taylor@vertex.com		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:			
Relinquished By: Katrina Taylor		Date: 5/14 Received By:		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) <input type="checkbox"/> Sample Condition <input type="checkbox"/> Cool Intact <input type="checkbox"/> Observed Temp. °C <input type="checkbox"/> Corrected Temp. °C <input type="checkbox"/>		Remarks: A Parker@vertexresource.com & Katrina.Taylor@vertex.com		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:			



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: VERTE X RESOURCE GROUP		P.O. #:																	
Project Manager: ANDREW PARKER		Company: Vertex																	
Address: 3101 Boyd dr		Attn:																	
City: Carlsbad		Address: 3101 Boyd dr																	
State: NM Zip: 88220		City: Carlsbad																	
Phone #:		State: NM Zip: 88220																	
Fax #:		Phone #:																	
Project #: 246-04576		Project Owner:																	
Project Name: NORTH EL MAR		Fax #:																	
Project Location: RURAL LGA		PRESERV																	
Sampler Name: KATRINA TA YLOR		SAMPLING																	
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	Chloride	CrO, PRO, MRO	BTEX		
405543	BS25-36	4.1				X							3/13	10:40	X	X	X		
12	BS25-37	4.1												10:50	X	X	X		
13	BS25-38	4.1												11:00	X	X	X		
Relinquished By: Katrina Taylor		Date: 3/14	Received By:	Time: 9:30		Date: 3/17-AS		Received By: Spectroquest		Time: 10:10		Observed Temp. °C: 3.3		Corrected Temp. °C: 3.0		Sample Condition: Cool Intact		CHECKED BY: (Initials) SKZ	
Delivered By: (Circle One)		Observed Temp. °C: 3.3		Corrected Temp. °C: 3.0		Sample Condition: Cool Intact		CHECKED BY: (Initials)		Turnaround Time: Standard		Thermometer ID: #113		Correction Factor: +0.5°C		Bacteria (only) Sample Condition: Cool Intact		Observed Temp. °C	
Sampler - UPS - Bus - Other:		Corrected Temp. °C: 3.0		Sample Condition: Cool Intact		CHECKED BY: (Initials)		Turnaround Time: Standard		Thermometer ID: #113		Correction Factor: +0.5°C		Bacteria (only) Sample Condition: Cool Intact		Observed Temp. °C		Corrected Temp. °C	



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

April 01, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: NORTH EL MAR 50

Enclosed are the results of analyses for samples received by the laboratory on 03/26/25 10:34.

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 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:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 39 4.1 (H251764-01)

BTX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	QM-07
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	QM-07
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	QM-07
Total BTX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 141 % 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	13900	16.0	03/28/2025	ND	464	116	400	7.14	

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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 85.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 80.4 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 40 4.1 (H251764-02)

BTX 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 145 % 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	11000	16.0	03/28/2025	ND	464	116	400	7.14	

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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 58.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 57.3 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 41 4.1 (H251764-03)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 141 % 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	03/28/2025	ND	464	116	400	7.14		

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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 77.5 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.7 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 42 4.1 (H251764-04)

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 143 % 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	03/28/2025	ND	464	116	400	7.14	

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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 82.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.0 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 43 4.1 (H251764-05)

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 145 % 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	8000	16.0	03/28/2025	ND	464	116	400	7.14	

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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 64.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 59.9 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 44 4.1 (H251764-06)

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 141 % 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	4400	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 66.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 61.3 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 45 4.1 (H251764-07)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 145 % 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	4000	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 81.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.5 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 46 4.1 (H251764-08)

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 140 % 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	8000	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 83.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 80.3 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 47 4.1 (H251764-09)

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	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 129 % 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	144	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 82.5 % 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: 03/26/2025
Reported: 04/01/2025
Project Name: NORTH EL MAR 50
Project Number: 24E - 04576
Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: BS 25 - 48 4.1 (H251764-10)

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	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 134 % 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	368	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 83.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 78.2 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 49 4.1 (H251764-11)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 135 % 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	2080	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 80.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 74.6 % 40.6-153

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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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 50 4.1 (H251764-12)

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 148 % 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	4000	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 82.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.8 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 51 4.1 (H251764-13)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEX	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 146 % 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	7440	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 59.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 55.1 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 52 4.1 (H251764-14)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 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	12200	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 82.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.7 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 53 4.1 (H251764-15)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39		
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83		
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19		
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48		
Total BTEx	<0.300	0.300	03/29/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 137 % 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	2640	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 82.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.3 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 54 4.1 (H251764-16)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 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	8530	16.0	03/28/2025	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	03/26/2025	ND	203	102	200	2.07	
DRO >C10-C28*	36.3	10.0	03/26/2025	ND	205	102	200	0.585	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 84.1 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 56 4.1 (H251764-17)

BTX 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 149 % 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	8660	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 73.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 70.9 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 07 0-4.1 (H251764-18)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 135 % 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	256	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 66.8 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 08 0-4.1 (H251764-19)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 136 % 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	544	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 79.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 73.6 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 09 0-4.1 (H251764-20)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2025	ND	2.46	123	2.00	2.39	
Toluene*	<0.050	0.050	03/29/2025	ND	2.76	138	2.00	1.83	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	2.99	149	2.00	1.19	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	9.40	157	6.00	2.48	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 136 % 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	368	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 83.5 % 44.4-145

Surrogate: 1-Chlorooctadecane 80.9 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 10 0-4.1 (H251764-21)

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	03/29/2025	ND	2.50	125	2.00	2.85	QM-07
Toluene*	<0.050	0.050	03/29/2025	ND	2.95	148	2.00	4.69	QM-07
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	3.20	160	2.00	3.99	QM-07
Total Xylenes*	<0.150	0.150	03/29/2025	ND	10.1	168	6.00	3.75	QM-07
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 132 % 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	416	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 85.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 82.1 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 11 0-4.1 (H251764-22)

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	03/29/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/29/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/29/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/29/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/29/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 133 % 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	528	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 80.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 79.0 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 12 0-4.1 (H251764-23)

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	03/30/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 134 % 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	544	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 86.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 83.9 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 13 0-4.1 (H251764-24)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 137 % 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	560	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 83.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 79.9 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 14 0-4.1 (H251764-25)

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	03/30/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 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	432	16.0	03/28/2025	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	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 84.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 81.1 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 15 0-4.1 (H251764-26)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 143 % 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	03/27/2025	ND	432	108	400	0.00	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 85.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 82.4 % 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: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: WS 25 - 16 0-4.1 (H251764-27)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2025	ND	2.50	125	2.00	2.85	
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69	
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99	
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75	
Total BTEX	<0.300	0.300	03/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 137 % 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	528	16.0	03/27/2025	ND	432	108	400	0.00	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 79.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.5 % 40.6-153

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Analytical Results For:

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

Received: 03/26/2025
 Reported: 04/01/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/25/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Alyssa Parras

Sample ID: BS 25 - 55 0-4.1 (H251764-28)

BTEx 8021B		mg/kg		Analyzed By: JH				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/30/2025	ND	2.50	125	2.00	2.85		
Toluene*	<0.050	0.050	03/30/2025	ND	2.95	148	2.00	4.69		
Ethylbenzene*	<0.050	0.050	03/30/2025	ND	3.20	160	2.00	3.99		
Total Xylenes*	<0.150	0.150	03/30/2025	ND	10.1	168	6.00	3.75		
Total BTEX	<0.300	0.300	03/30/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 142 % 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	12000	16.0	03/27/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/26/2025	ND	177	88.6	200	0.355	
DRO >C10-C28*	<10.0	10.0	03/26/2025	ND	171	85.7	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	03/26/2025	ND					

Surrogate: 1-Chlorooctane 79.5 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

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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



Top

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: VERTEX RESOURCE GROUP Project Manager: ANDREW PARKER Address: 3101 Boyd dr City: Alpha Carlsbad State: NM zip: 86220 Phone #: Fax #: Project #: 246-04576 Project Owner: Project Name: NORTH EL MAR 50 Project Location: RURAL LEA Sampler Name: KATRINA TAYLOR				BILL TO P.O. #: Company: VERTEX Attn: Address: 3101 Boyd City: Carlsbad State: NM zip: 86220 Phone #: Fax #:				ANALYSIS REQUEST			
FOR LAB USE ONLY											
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP. # CONTAINERS		MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :		PRESERV ACID/BASE: ICE / COOL OTHER :		SAMPLING DATE TIME	
11		BS25-44 4.1		C		X		X		3/25	
12		BS25-50 4.1									
13		BS25-51 4.1									
14		BS25-52 4.1									
15		BS25-53 4.1									
16		BS25-54 4.1									
17		BS25-56 4.1									
18		BS25-07 0-4.1									
19		WS25-08 0-4.1									
20		WS25-09 0-4.1									
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Relinquished By: <i>Chad Taylor</i> Date: 8/20/05 Time: 10:34 Date: 10/31 Received By: <i>AParker</i>				Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address: REMARKS: AParker @ vertex. Ca, Katrina Taylor @ vertex. Ca							
Relinquished By: Date: Time: Date: Received By:				Turnaround Time: <i>AP 330-35</i> Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID <i>4449 #142</i> Correction Factor <i>-0.5°C +0.3°C</i> Bacteria (only) <input type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Observed Temp. °C Corrected Temp. °C							



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

30

[illegible]



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

March 31, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: NORTH EL MAR 50

Enclosed are the results of analyses for samples received by the laboratory on 03/27/25 13:20.

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 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:

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

Received: 03/27/2025
 Reported: 03/31/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/26/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BFNEMU - 01 (H251823-01)

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	03/28/2025	ND	1.87	93.5	2.00	19.4	
Toluene*	<0.050	0.050	03/28/2025	ND	1.93	96.7	2.00	11.8	
Ethylbenzene*	<0.050	0.050	03/28/2025	ND	1.95	97.7	2.00	7.15	
Total Xylenes*	<0.150	0.150	03/28/2025	ND	5.87	97.9	6.00	4.32	
Total BTEx	<0.300	0.300	03/28/2025	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	48.0	16.0	03/28/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/28/2025	ND	206	103	200	2.06	
DRO >C10-C28*	<10.0	10.0	03/28/2025	ND	207	103	200	1.99	
EXT DRO >C28-C36	<10.0	10.0	03/28/2025	ND					

Surrogate: 1-Chlorooctane 80.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 74.2 % 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: 03/27/2025
 Reported: 03/31/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/26/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BFNEMU - 02 (H251823-02)

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	03/28/2025	ND	1.87	93.5	2.00	19.4		
Toluene*	<0.050	0.050	03/28/2025	ND	1.93	96.7	2.00	11.8		
Ethylbenzene*	<0.050	0.050	03/28/2025	ND	1.95	97.7	2.00	7.15		
Total Xylenes*	<0.150	0.150	03/28/2025	ND	5.87	97.9	6.00	4.32		
Total BTEX	<0.300	0.300	03/28/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	03/29/2025	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	03/28/2025	ND	206	103	200	2.06	
DRO >C10-C28*	<10.0	10.0	03/28/2025	ND	207	103	200	1.99	
EXT DRO >C28-C36	<10.0	10.0	03/28/2025	ND					

Surrogate: 1-Chlorooctane 93.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 88.4 % 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: 03/27/2025
 Reported: 03/31/2025
 Project Name: NORTH EL MAR 50
 Project Number: 24E - 04576
 Project Location: SAHARA OPERATING

Sampling Date: 03/26/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BFNEMU - 03 (H251823-03)

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	03/28/2025	ND	1.87	93.5	2.00	19.4		
Toluene*	<0.050	0.050	03/28/2025	ND	1.93	96.7	2.00	11.8		
Ethylbenzene*	<0.050	0.050	03/28/2025	ND	1.95	97.7	2.00	7.15		
Total Xylenes*	<0.150	0.150	03/28/2025	ND	5.87	97.9	6.00	4.32		
Total BTEx	<0.300	0.300	03/28/2025	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	32.0	16.0	03/29/2025	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	03/28/2025	ND	206	103	200	2.06	
DRO >C10-C28*	<10.0	10.0	03/28/2025	ND	207	103	200	1.99	
EXT DRO >C28-C36	<10.0	10.0	03/28/2025	ND					

Surrogate: 1-Chlorooctane 76.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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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

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

March 31, 2025

ANDREW PARKER
VERTEX RESOURCE
3101 BOYD DRIVE
CARLSBAD, NM 88220

RE: NORTH EL MAR

Enclosed are the results of analyses for samples received by the laboratory on 03/27/25 13:20.

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 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:

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

Received: 03/27/2025
 Reported: 03/31/2025
 Project Name: NORTH EL MAR
 Project Number: 24E - 04576
 Project Location: RURAL LEA

Sampling Date: 03/26/2025
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BF - SOIL (H251824-01)

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	03/28/2025	ND	1.87	93.5	2.00	19.4	
Toluene*	<0.050	0.050	03/28/2025	ND	1.93	96.7	2.00	11.8	
Ethylbenzene*	<0.050	0.050	03/28/2025	ND	1.95	97.7	2.00	7.15	
Total Xylenes*	<0.150	0.150	03/28/2025	ND	5.87	97.9	6.00	4.32	
Total BTX	<0.300	0.300	03/28/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	03/29/2025	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	03/28/2025	ND	206	103	200	2.06	
DRO >C10-C28*	<10.0	10.0	03/28/2025	ND	207	103	200	1.99	
EXT DRO >C28-C36	<10.0	10.0	03/28/2025	ND					

Surrogate: 1-Chlorooctane 93.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 86.5 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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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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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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

QUESTIONS

Action 460453

QUESTIONS

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2400529349
Incident Name	NAPP2400529349 NORTH EL MAR 050 INJECTION LINE RELEASE @ 30-025-08305
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-025-08305] NORTH EL MAR UNIT #050

Location of Release Source*Please answer all the questions in this group.*

Site Name	NORTH EL MAR 050 INJECTION LINE RELEASE
Date Release Discovered	12/13/2023
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: Human Error Flow Line - Injection Produced Water Released: 32 BBL Recovered: 0 BBL Lost: 32 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)	The original C-141 is attached to the volume calculation worksheet. There is no documentation that the original C-141 dated December 29, 2023 was received by NMOCD.

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

QUESTIONS, Page 2

Action 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	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	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: Andrew Parker Title: Consultant Email: aparker@vertexresource.com Date: 10/26/2024
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Oil Conservation Division
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Santa Fe, NM 87505

QUESTIONS, Page 3

Action 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Site Characterization	
<i>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.</i>	
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	Attached Document
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 1000 (ft.) and ½ (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	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan	
<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>	
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)	16000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<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>	
On what estimated date will the remediation commence	01/06/2025
On what date will (or did) the final sampling or liner inspection occur	01/20/2024
On what date will (or was) the remediation complete(d)	01/20/2025
What is the estimated surface area (in square feet) that will be reclaimed	6168
What is the estimated volume (in cubic yards) that will be reclaimed	914
What is the estimated surface area (in square feet) that will be remediated	6168
What is the estimated volume (in cubic yards) that will be remediated	914
<i>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.</i>	
<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 4

Action 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID:
	20077
	Action Number:
	460453
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	LEA LAND LANDFILL [fEEM0112342028]
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: aparker@vertexresource.com Date: 11/27/2024
<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 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	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 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	444427
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	03/25/2025
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	10844
What was the total volume (cubic yards) remediated	2145
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	10844
What was the total volume (in cubic yards) reclaimed	2145
Summarize any additional remediation activities not included by answers (above)	Surface reclamation completed with seeding.
<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 460453

QUESTIONS (continued)

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	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	10844
What was the total volume of replacement material (in cubic yards) for this site	2145
<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)	05/08/2025
Summarize any additional reclamation activities not included by answers (above)	Surface reclaimed 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 reseeding 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

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QUESTIONS, Page 8

Action 460453

QUESTIONS (continued)

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	Action Number: 460453
	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 460453

CONDITIONS

Operator: SAHARA OPERATING CO P.O. Box 4130 Midland, TX 79704	OGRID: 20077
	Action Number: 460453
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
nvez	None	7/2/2025