

State of New Mexico  
Oil Conservation Division

Incident ID	NAB1527329788
District RP	2RP-3305
Facility ID	
Application ID	

### Closure

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

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

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

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

Printed Name: Clinton Talley Title: EHS Supervisor  
 Signature: *Clinton Talley* Date: 6/1/2023  
 email: clinton.talley@matadorresources.com Telephone: 337-319-8398

**OCD Only**

Received by: Jocelyn Harimon Date: 06/05/2023

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

Closure Approved by: *Robert Hamlet* Date: 10/27/2023  
 Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced



May 26, 2023

Vertex Project #: 22E-03899

**Spill Closure Report:** Emperor Oil Co Federal Gas B Com #001  
Section 28, Township 20 South, Range 30 East  
API: 30-015-10465  
County: Eddy  
Incident Report: NAB1527329788/2RP-3305

**Prepared For:** **Matador Production Company**  
1500, 5400 LBJ Freeway  
Dallas, Texas 75240

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

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

Matador Production Company (Matador) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release of produced water and oil due to a hole in the storage tank at Emperor Oil Co Federal Gas B Com #001, API 30-015-10465, Incident NAB1527329788/2RP-3305 (hereafter referred to as "Emperor"). This letter provides a description of the Spill Assessment and includes a request for Incident Closure. The spill area is located at N 32.546131, W -103.979368.

## Background

The site is located approximately 16.98 miles east of Carlsbad, New Mexico (Google Inc., 2023). The legal location for the site is Section 28, Township 20 South and Range 30 East in Eddy County, New Mexico. The spill area is located on Bureau of Land Management property. An aerial photograph and site schematic are included on Figure 1 (Attachment 1).

*The Geological Map of New Mexico* (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the Emperor's surface geology is comprised primarily of Qp – Piedmont and alluvial deposits (Holocene to middle Pleistocene). The Natural Resources Conservation Service *Web Soil Survey* characterizes the predominant soil texture on the site is Simona-Bippus complex. It tends to be well drained with very high runoff and very low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

The surrounding landscape is associated with alluvial fans at elevations of 1,800 to 5,000 feet above sea level. The climate is semi-arid, with annual precipitation ranging between 8 to 24 inches. Historically, the plant community has grassland aspect, dominated by black grama and dotted with shrubs such as mesquite and creosotebush. Perennial and annual forb abundance and distribution are dependent on precipitation. Overgrazing and extended drought can reduce grass cover (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

There is no surface water located at Emperor. The nearest significant watercourse, as defined in Subsection P of [vertex.ca](https://www.vertex.ca)

19.15.17.7 Mexico Administrative Code (NMAC; New Mexico Oil Conservation Division, 2018), is Lake Avalon located approximately 15.5 miles southwest of Emperor (United States Fish and Wildlife Service, 2023). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

### **Incident Description**

The spill occurred on Septemeber 27, 2015 due to a hole in the storage tank. The spill was reported on September 28, 2015, and involved the release of approximately 30 barrels (bbl.) of produced water and 80 bbl. of produced oil totalling 110 bbl. on the engineered pad site. Approximately 100 bbl. of free fluid was removed during initial spill clean-up. The aerial view schematic is included on Figure 1 (Attachment 1). A site characterization and laboratory analysis are included in Table 2 (Attachment 2). The New Mexico Oil Conservation Division (NMOCD) C-141 Report: NAB1527329788/2RP-3305 is included in Attachment 3. The daily field reports and site photographs are included in Attachment 4.

### **Closure Criteria Determination**

The depth to groundwater was determined using information from the New Mexico Office of the State Engineer Water Rights Reporting System. A 0.5-mile search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 187 feet below ground surface (bgs) and 0.76 miles from the site (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2023). Documentation used in Closure Criteria Determination research is included in Attachment 5.

**Matador Production Company**  
Emperor Oil Co Federal Gas B Com #001, NAB1527329788/2RP-3305

**2023 Spill Assessment and Closure**  
May 2023

<b>Closure Criteria Worksheet</b>			
<b>Site Name: Emperor Oil Co Federal Gas B Com #001</b>			
<b>Spill Coordinates:</b>		<b>X: 32.546131</b>	<b>Y: -103.979368</b>
<b>Site Specific Conditions</b>		<b>Value</b>	<b>Unit</b>
1	Depth to Groundwater	187	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	81,741	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	5,421	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	9,351	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, <b>or</b>	9,339	feet
	ii) Within 1000 feet of any fresh water well or spring	9,339	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	918	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Simona-Bippus complex	
12	Ecological Classification	Shallow Sandy	
13	Geology	Qp	
	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	<50'	<50' 51-100' >100'

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

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

**Matador Production Company**  
Emperor Oil Co Federal Gas B Com #001, NAB1527329788/2RP-3305

**2023 Spill Assessment and Closure**  
May 2023

<b>Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS</b>	<b>Constituent</b>	<b>Limit</b>
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS - Total dissolved solids

TPH - Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

BTEX - Benzene, toluene, ethylbenzene, and xylenes

## Remedial Actions Taken

An initial site inspection of the spill area was completed on November 18, 2022, which identified the area of the spill specified in the initial C-141 Report. Characterization samples were collected and submitted for laboratory analysis. Sample results are included in Table 2 (Attachment 2). The DFR associated with the site inspection is included in Attachment 4.

Remediation efforts began on December 6, 2022, and were completed on April 24, 2023. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of multiple sample points and consisted of analysis using a photo ionization detector (volatile hydrocarbons), Dextsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and electroconductivity meter (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 5 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility.

Notification that confirmatory samples were being collected was provided to the NMOCD on April 21, 2023, and is included in Attachment 6. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 69 samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory analysis results are presented in Table 3 (Attachment 2) and the laboratory data report is included in Attachment 7. All confirmatory samples collected and analyzed were below closure criteria for the site.

## Closure Request

The spill area was fully delineated, remediated and backfilled with local soils. The confirmatory sample notification email is included in Attachment 6. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a Release locations “under 50 feet to groundwater”. Based on these findings, Matador Production Company requests that this spill be closed.

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**Matador Production Company**  
Emperor Oil Co Federal Gas B Com #001, NAB1527329788/2RP-3305

**2023 Spill Assessment and Closure**  
May 2023

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



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Monica Peppin, A.S.  
PROJECT MANAGER, REPORTING

May 31, 2023  
Date

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### **Attachments**

- Attachment 1. Figures
- Attachment 2. Tables
- Attachment 3. NMOCD C-141 Report
- Attachment 4. Daily Field Reports with Photographs
- Attachment 5. Closure Criteria Research
- Attachment 6. Confirmatory Sample Notification to the NMOCD
- Attachment 7. Laboratory Data Reports and Chain of Custody Forms

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## References

Google Inc. (2023). *Google Earth Pro* (Version 7.3.4) [Software]. Retrieved from <http://www.google.com/earth>

New Mexico Bureau of Geology and Mineral Resources. (2023). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>.

New Mexico Mining and Minerals Division. (2022). *Coal Mine Resources in New Mexico*. Retrieved from <http://www.emnrd.state.nm.us/MMD/gismapminedata.html>

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2023). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>

United States Department of Agriculture, Natural Resources Conservation Service. (2023). *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.

United States Department of Homeland Security, FEMA Flood Map Service Center. (2020).

United States Department of the Interior, Bureau of Land Management. (2018). *New Mexico Cave/Karsts*. Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>.

United States Fish and Wildlife Service. (2023). *National Wetlands Inventory Surface Waters and Wetland*. Retrieved from <https://www.fws.gov/wetlands/data/Mapper.html>.

**Matador Production Company**  
Emperor Oil Co Federal Gas B Com #001, NAB1527329788/2RP-3305

**2023 Spill Assessment and Closure**  
May 2023

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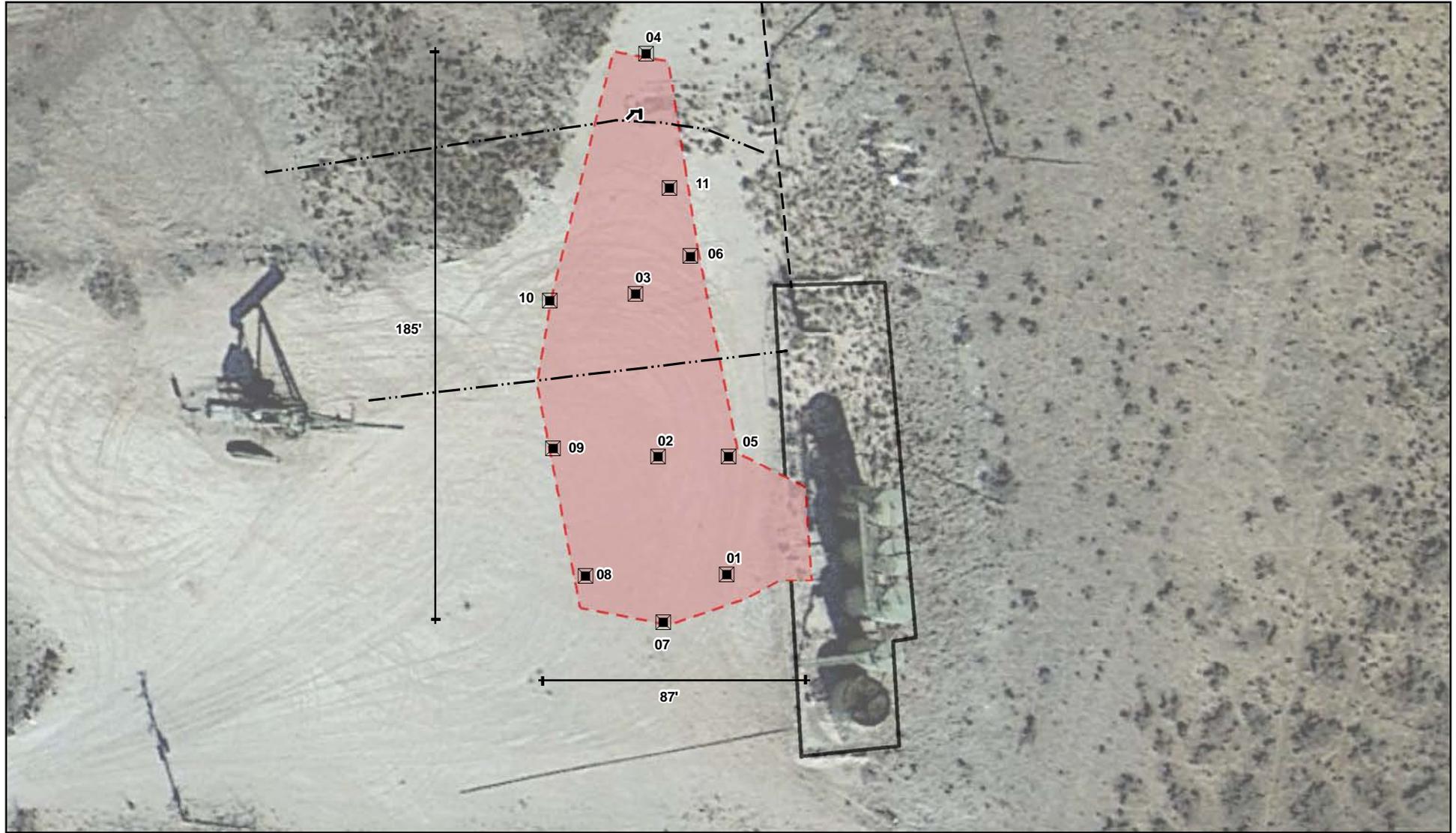
## **Limitations**

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

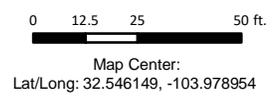
The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement 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.

## **ATTACHMENT 1**

Document Path: G:\1-Projects\US PROJECTS\Material Resources\22E-03899\Figure 1 Characterization Schematic (Emperor Oil Co Federal Gas B Com #001).mxd



- Testhole (Prefixed by ("TP22-"))
- Pipeline (Aboveground)
- Approximate Contaminated Area ( 9,134 sq. ft. )
- Earth berm containment
- Riser
- Pipeline (Underground)



NAD 1983 UTM Zone 13N  
Date: Nov 21/22



**Characterization Schematic**  
**Emperor Oil Co Federal Gas B Com #001**

FIGURE:

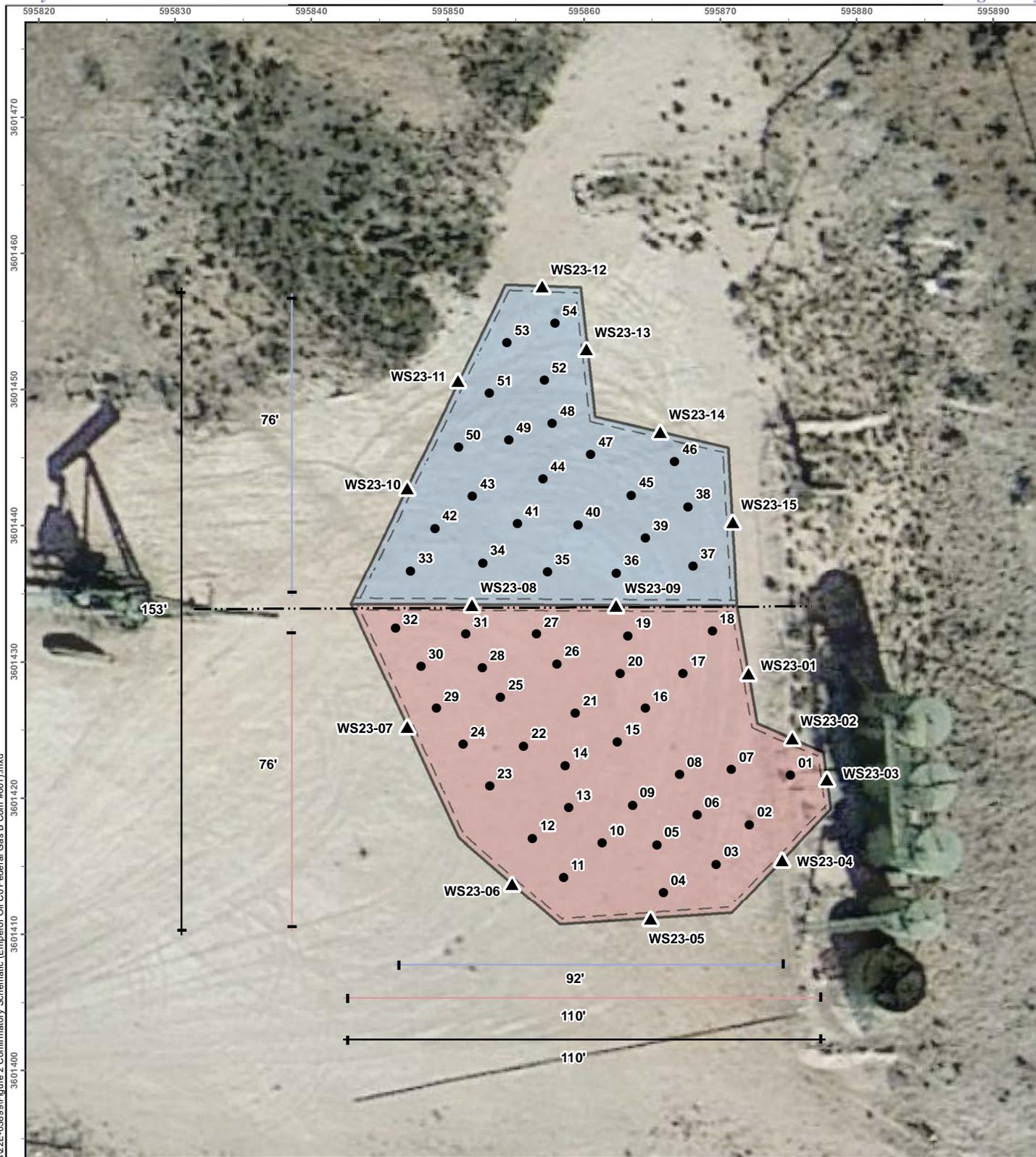
1



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

Note: Background imagery from Google Earth Pro., 2019. Feature locations from Vertex Professional Services Ltd., 2022.

**VERSATILITY. EXPERTISE.**



- Base Sample (Prefixed by "BS23-")
- ▲ Wall Sample
- Pipeline (Underground)
- Excavation to 2' (~4,425.5 sq.ft.)
- Excavation to 4' (~6,279.4 sq.ft.)

**VERTEX**

0 5 10 20 ft.

Map Center:  
Lat: 32.546158,  
Long: -103.979094

NAD 1983 UTM Zone 13N  
Date: May 04/23

**Confirmatory Schematic**  
**Emperor Oil Co Federal Gas B Com #001**

FIGURE:  
**2**

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

Note: Image from Google Earth Pro, 2022, georeferenced by Vertex. GPS from Vertex Professional Services Ltd., 2023.

## **ATTACHMENT 2**

**Table 2. Initial Characterization Laboratory Results - Depth to Groundwater <50 feet bgs  
Matador Production Company and Operator Group  
Emperor Oil Co Federal Gas B Com #001  
NMOCD Tracking #: NAB1527329788/2RP-3305  
Project #: 22E-03899  
Lab Report: 2211C38**

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	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)	(mg/kg)	(mg/kg)	
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
<b>2022 Testpits</b>													
TP22-02	0	November 17, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>1100</b>
	2	November 17, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>840</b>
	4	November 17, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	540
TP22-03	0	November 17, 2022	ND	ND	ND	ND	ND	ND	240	220	240	<b>460</b>	460
	2	November 17, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
	4	November 17, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500
TP22-07	0	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	410
	2	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82
	4	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TP22-09	0	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	340
	2	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
	4	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
TP22-10	0	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<b>620</b>
	2	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
	4	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	270
TP22-11	0	November 18, 2022	ND	ND	ND	ND	ND	ND	40	49	40	89	ND
	2	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	November 18, 2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	360

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)

ND - Not Detected at the Reporting Limit

- Denotes no standard/not analyzed

**Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)**

**Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)**



**Table 3. Confirmatory Laboratory Results - Depth to Groundwater <50 feet bgs  
 Matador Production Company and Operator Group  
 Emperor Oil Co Federal Gas B Com #001  
 NMOCD Tracking #: NAB1527329788/2RP-3305  
 Project #: 22E-03899  
 Lab Report: 2305051**

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	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)	(mg/kg)	(mg/kg)	(mg/kg)
<b>Criteria</b>	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
<b>2023 Excavation</b>													
WS23-01	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	13	ND	13	13	100
WS23-02	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
WS23-03	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	12	ND	12	12	120
WS23-04	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	95
WS23-05	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	9.7	ND	9.7	9.7	100
WS23-06	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67
WS23-07	0 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	13	ND	13	13	95
WS23-08	2 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	77
WS23-09	2 - 4	April 28, 2023	ND	ND	ND	ND	ND	ND	18	ND	18	18	83
WS23-10	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	13	ND	13	13	94
WS23-11	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	13	ND	13	13	66
WS23-12	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	12	ND	12	12	77
WS23-13	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	24	ND	24	24	130
WS23-14	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	22	ND	22	22	140
WS23-15	0 - 2	April 28, 2023	ND	ND	ND	ND	ND	ND	19	ND	19	19	130
BS23-01	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-02	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
BS23-03	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
BS23-04	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180
BS23-05	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
BS23-06	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180
BS23-07	4	April 27, 2023	ND	ND	ND	ND	ND	ND	37	ND	37	37	140
BS23-08	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-09	4	April 27, 2023	ND	ND	ND	ND	ND	ND	20	ND	20	20	120
BS23-10	4	April 27, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	120
BS23-11	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
BS23-12	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
BS23-13	4	April 27, 2023	ND	ND	ND	ND	ND	ND	48	ND	48	48	150
BS23-14	4	April 27, 2023	ND	ND	ND	ND	ND	ND	10	ND	10	10	130
BS23-15	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-16	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
BS23-17	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
BS23-18	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180
BS23-19	4	April 27, 2023	ND	ND	ND	ND	ND	ND	12	ND	12	12	150
BS23-20	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180
BS23-21	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-22	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-23	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210
BS23-24	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
BS23-25	4	April 27, 2023	ND	ND	ND	ND	ND	ND	51	ND	51	51	140
BS23-26	4	April 27, 2023	ND	ND	ND	ND	ND	ND	41	ND	41	41	130
BS23-27	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-28	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	84
BS23-29	4	April 27, 2023	ND	ND	ND	ND	ND	ND	38	ND	38	38	150
BS23-30	4	April 27, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-31	4	April 27, 2023	ND	ND	ND	ND	ND	ND	9.8	ND	9.8	9.8	180
BS23-32	4	April 27, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	ND
BS23-33	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
BS23-34	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120



**Table 3. Confirmatory Laboratory Results - Depth to Groundwater <50 feet bgs  
Matador Production Company and Operator Group  
Emperor Oil Co Federal Gas B Com #001  
NMOCD Tracking #: NAB1527329788/2RP-3305  
Project #: 22E-03899  
Lab Report: 2305051**

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	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)	(mg/kg)	(mg/kg)	
<b>Criteria</b>	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
BS23-35	2	April 28, 2023	ND	ND	ND	ND	ND	ND	24	ND	24	24	140
BS23-36	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	72
BS23-37	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	69
BS23-38	2	April 28, 2023	ND	ND	ND	ND	ND	ND	18	ND	18	18	90
BS23-39	2	April 28, 2023	ND	ND	ND	ND	ND	ND	13	ND	13	13	150
BS23-40	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
BS23-41	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70
BS23-42	2	April 28, 2023	ND	ND	ND	ND	ND	ND	15	ND	15	15	71
BS23-43	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	84
BS23-44	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	93
BS23-45	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-46	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	66
BS23-47	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100
BS23-48	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-49	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82
BS23-50	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	85
BS23-51	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
BS23-52	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100
BS23-53	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	63
BS23-54	2	April 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	95

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)

ND - Not Detected at the Reporting Limit

- Denotes no standard/not analyzed

**Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)**

**Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)**



## **ATTACHMENT 3**

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

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

Form C-141  
Revised August 8, 2011

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

Release Notification and Corrective Action

*HP*

*NAB1527329788*

OPERATOR

Initial Report  Final Report

Name of Company <i>Lynx Petroleum Consultants, Inc. 131645</i>	Contact <i>Wes Shields</i>
Address <i>PO Box 1708</i>	Telephone No. <i>575-392-6950</i>
Facility Name <i>Emperor</i>	Facility Type <i>Tank Battery</i>
Surface Owner <i>USA</i>	Mineral Owner <i>USA</i>
API No. <i>30-015-10465</i>	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	28	20-S	30-E	1980	North	1980	West	Eddy

Latitude *32.546131* Longitude *103.979368*

NATURE OF RELEASE

*80 bbl oil / 30 bbl PW* *HP*

Type of Release <i>Water/Oil</i>	Volume of Release <i>110 barrels</i>	Volume Recovered <i>100 barrels</i>
Source of Release <i>Hole in tank</i>	Date and Hour of Occurrence <i>September 27, 2015</i>	Date and Hour of Discovery <i>September 28, 2015 6:00 AM</i>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>Heather Patterson - OCD Artesia</i>	
By Whom? <i>Sandra Baxter</i>	Date and Hour <i>September 28, 2015 2:00 PM</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
*Hole in the storage tank. Tank is now out of service.*

Describe Area Affected and Cleanup Action Taken.\*  
*Surface area location. Picked up by vacuum truck.*

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

Signature: <i>Maren Latimer</i>		OIL CONSERVATION DIVISION	
Printed Name: <i>Maren Latimer</i>		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: <i>Regulatory Clerk</i>		Approval Date: <i>9/30/15</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>latimermaren@gmail.com</i>		Conditions of Approval: <b>Remediation per O.C.D. Rules &amp; Guidelines</b>	
Date: <i>09/29/15</i> Phone: <i>575-392-6950</i>		Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

**SUBMIT REMEDIATION PROPOSAL NO**  
**LATER THAN: 11/7/15**

*2RP-3305*

Incident ID	NAB1527329788
District RP	2RP-3305
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	187 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist:** *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	NAB1527329788
District RP	2RP-3305
Facility ID	
Application ID	

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

Printed Name: Clinton Talley Title: EHS Supervisor

Signature: *Clinton Talley* Date: 6/1/2023

email: clinton.talley@matadorresources.com Telephone: 337-319-8398

**OCD Only**

Received by: Jocelyn Harimon Date: 06/05/2023

Incident ID	NAB1527329788
District RP	2RP-3305
Facility ID	
Application ID	

## Remediation Plan

**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Clinton Talley Title: EHS Supervisor  
 Signature: *Clinton Talley* Date: 6/1/2023  
 email: clinton.talley@matadorresources.com Telephone: 337-319-8398

**OCD Only**

Received by: Jocelyn Harimon Date: 06/05/2023

- Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

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

State of New Mexico  
Oil Conservation Division

Incident ID	NAB1527329788
District RP	2RP-3305
Facility ID	
Application ID	

## Closure

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

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

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

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

Printed Name: Clinton Talley Title: EHS Supervisor  
 Signature: *Clinton Talley* Date: 6/1/2023  
 email: clinton.talley@matadorresources.com Telephone: 337-319-8398

**OCD Only**

Received by: Jocelyn Harimon Date: 06/05/2023

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

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

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

## **ATTACHMENT 4**



# Daily Site Visit Report

Client:	<u>Matador Resources</u>	Inspection Date:	<u>11/18/2022</u>
Site Location Name:	<u>Emperor Oil Co Federal B Com #1</u>	Report Run Date:	<u>11/18/2022 11:03 PM</u>
Client Contact Name:	<u>Arsenio Jones</u>	API #:	<u></u>
Client Contact Phone #:	<u>(575)361-4333</u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

### Summary of Times

Arrived at Site	<u>11/18/2022 7:00 AM</u>
Departed Site	<u>11/18/2022 2:30 PM</u>

### Field Notes

- 13:48** Completed safety paperwork on site
- 13:48** On site to continue test pit sampling
- 14:12** Obtained test pit samples 07-11 all to 4'.  
TP22-08 went to 8' for attempted vertical delineation.

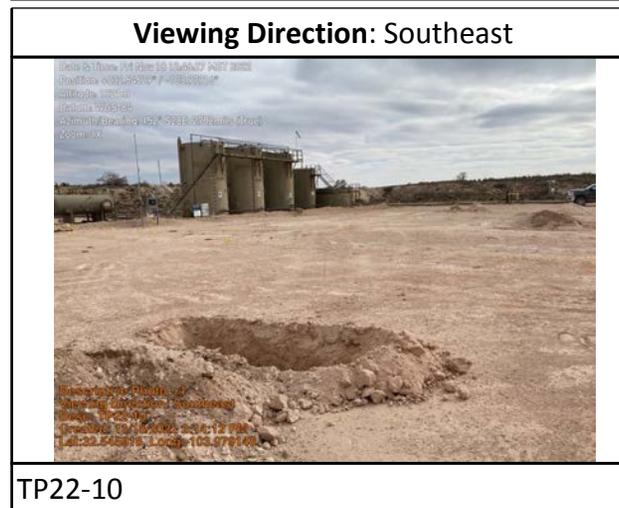
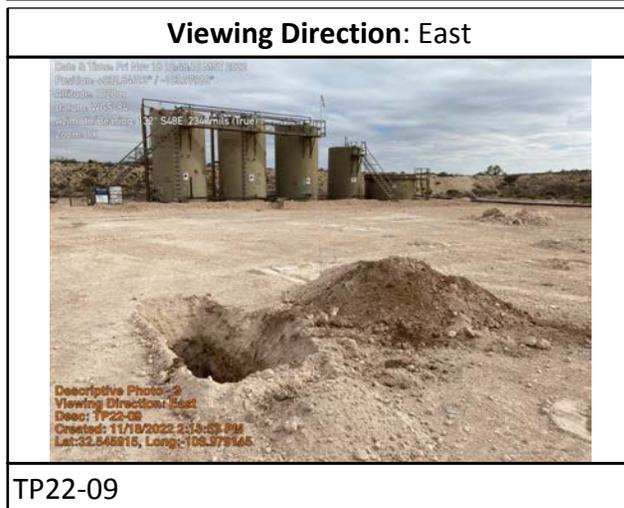
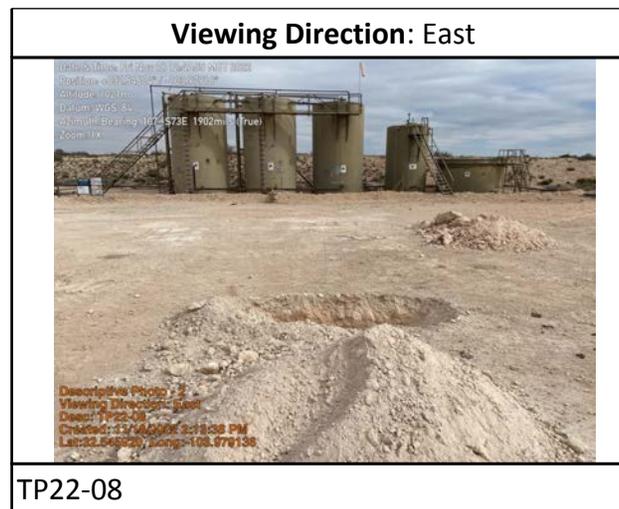
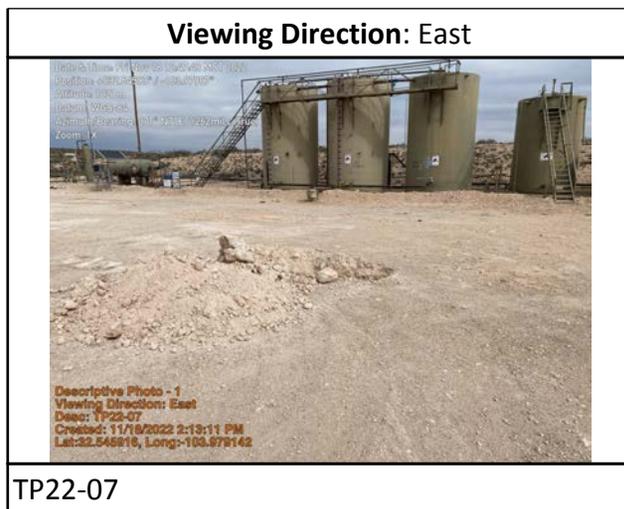
### Next Steps & Recommendations

- 1 Send schematic to client and determine which samples to send to lab



# Daily Site Visit Report

## Site Photos





# Daily Site Visit Report

**Viewing Direction: Southeast**

Date: 11/18/2022 2:14:27 PM  
Position: 32.545916, -103.979188  
Altitude: 3071 m  
Location: W93636  
City: 01338666047-9918-00000000-0000-0000-0000-0000

**Descriptive Photo - 5**  
Viewing Direction: Southeast  
Date: 11/18/22  
Created: 11/18/2022 2:14:27 PM  
Lat: 32.545916, Long: -103.979188

**TP22-11**

**Viewing Direction: North**

Date: 11/18/2022 2:15:39 PM  
Position: 32.545916, -103.979188  
Altitude: 3071 m  
Location: W93636  
City: 01338666047-9918-00000000-0000-0000-0000-0000

**Descriptive Photo - 6**  
Viewing Direction: North  
Date: 11/18/22  
Created: 11/18/2022 2:15:39 PM  
Lat: 32.545916, Long: -103.979188

**FSF**

**Viewing Direction: North**

Date: 11/18/2022 2:16:42 PM  
Position: 32.545916, -103.979188  
Altitude: 3071 m  
Location: W93636  
City: 01338666047-9918-00000000-0000-0000-0000-0000

**Descriptive Photo - 7**  
Viewing Direction: North  
Date: 11/18/22  
Created: 11/18/2022 2:16:42 PM  
Lat: 32.545916, Long: -103.979188

**FSF**

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:**

A handwritten signature in black ink, appearing to be 'AH', written over a horizontal line.

Signature



# Daily Site Visit Report

Client:	<u>Matador Resources</u>	Inspection Date:	<u>4/24/2023</u>
Site Location Name:	<u>Emperor Oil Co Federal B Com #1</u>	Report Run Date:	<u>5/22/2023 5:13 PM</u>
Client Contact Name:	<u>Arsenio Jones</u>	API #:	<u></u>
Client Contact Phone #:	<u>(575)361-4333</u>		
Unique Project ID	<u></u>	Project Owner:	<u></u>
Project Reference #	<u></u>	Project Manager:	<u></u>

### Summary of Times

Arrived at Site	<u>4/24/2023 9:35 AM</u>
Departed Site	<u></u>

### Field Notes

- 9:36** Complete excavation and collect confirmation samples
- 9:57** Excavation completed. Samples being collected and screened to verify that backfill can be done along with no additional excavation

### Next Steps & Recommendations

- 1** Closure report
- 2** Backfill



# Daily Site Visit Report

## Site Photos

Viewing Direction: Southeast



Descriptive Photo - 9  
Viewing Direction: Southeast  
Desc: Excavation Area  
Created: 5/9/2023 8:59:09 AM  
Lat:32.546074, Long:-103.978887

Excavation area

Viewing Direction: West



Descriptive Photo - 10  
Viewing Direction: West  
Desc: Excavation  
Created: 5/9/2023 8:59:09 AM  
Lat:32.546074, Long:-103.978887

Excavation

Viewing Direction: South



Descriptive Photo - 11  
Viewing Direction: South  
Desc: Excavation  
Created: 5/9/2023 8:59:09 AM  
Lat:32.546074, Long:-103.978887

Excavation

Viewing Direction: South

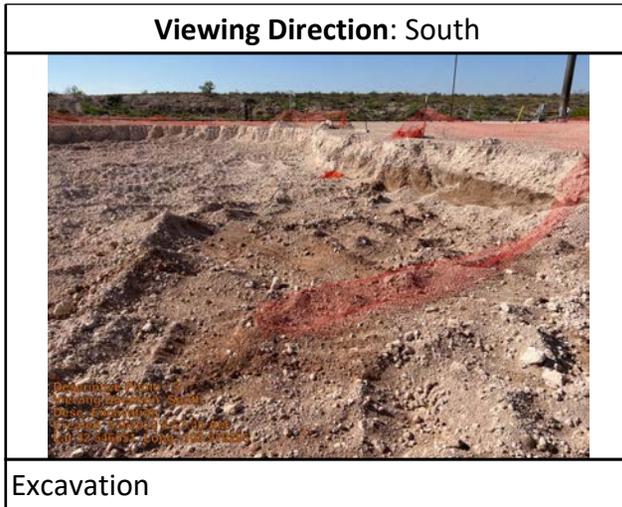
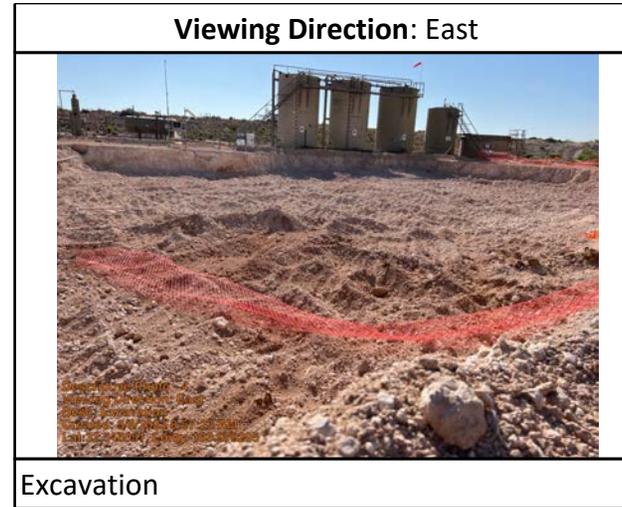


Descriptive Photo - 12  
Viewing Direction: South  
Desc: Excavation  
Created: 5/9/2023 8:59:09 AM  
Lat:32.546074, Long:-103.978887

Excavation area



# Daily Site Visit Report





# Daily Site Visit Report

Viewing Direction: North



Descriptive Photo - 7  
Viewing Direction: North  
Date: 5/22/2023  
Created: 5/22/2023 8:58:45 AM  
Lat: 32.548216, Long: -103.978859

Excavation

Viewing Direction: Southwest



Descriptive Photo - 8  
Viewing Direction: Southwest  
Date: 5/22/2023  
Created: 5/22/2023 8:58:50 AM  
Lat: 32.548216, Long: -103.978859

Excavation

Viewing Direction: Northwest



Descriptive Photo - 9  
Viewing Direction: Northwest  
Date: 5/22/2023  
Created: 5/22/2023 8:58:45 AM  
Lat: 32.548216, Long: -103.978859

Excavation

# Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Monica Peppin

A handwritten signature in black ink, appearing to be 'M. Peppin', written over a horizontal line.

**Signature:**

Signature

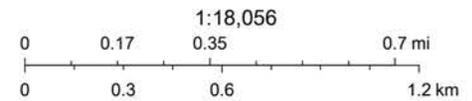
**ATTACHMENT 5**

# Emperor Oil Co Federal Gas B Com #001



5/22/2023, 8:07:17 AM

- Override 1
- Plugged
- NHD Flowlines
- OSE District Boundary
- Stream River
- Active
- New Mexico State Trust Lands
- Site Boundaries
- Pending
- Both Estates



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

Web Generated Map  
Map is generated by web users.



# New Mexico Office of the State Engineer

## Point of Diversion Summary

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

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64 Q16 Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
	CP 00551	1 1 1	33	20S	30E	595343	3600320*

<b>Driller License:</b> 46		<b>Driller Company:</b> ABBOTT BROTHERS COMPANY	
<b>Driller Name:</b> ABBOTT, MURRELL			
<b>Drill Start Date:</b> 09/19/1975	<b>Drill Finish Date:</b> 09/24/1975	<b>Plug Date:</b>	
<b>Log File Date:</b> 09/26/1975	<b>PCW Rcv Date:</b>	<b>Source:</b> Shallow	
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b> 30 GPM	
<b>Casing Size:</b> 6.63	<b>Depth Well:</b> 286 feet	<b>Depth Water:</b> 187 feet	

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	187	286	Sandstone/Gravel/Conglomerate

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	226	286

\*UTM location was derived from PLSS - see Help

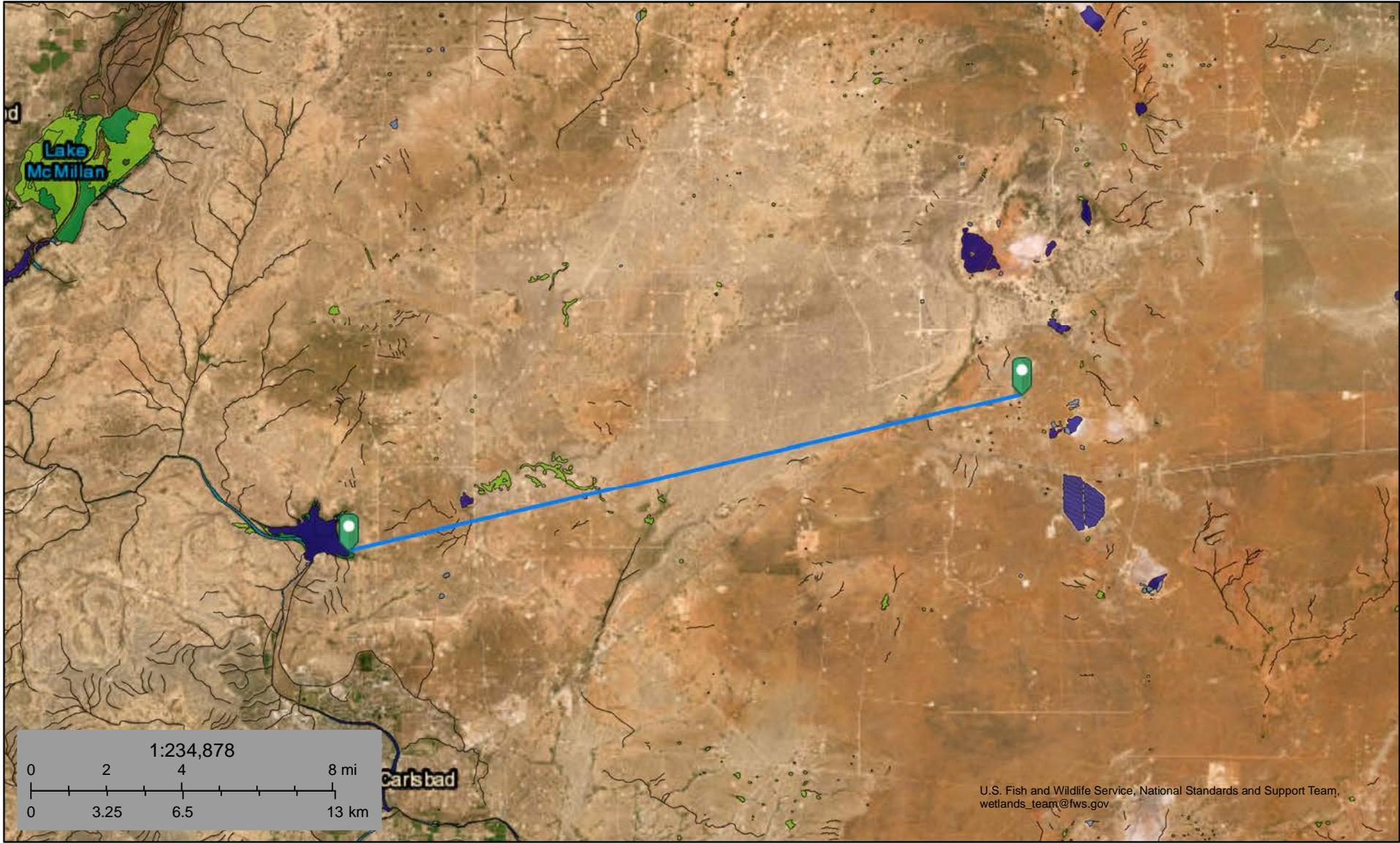
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/10/22 2:37 PM

POINT OF DIVERSION SUMMARY



# Emperor Oil Co Federal Gas B Com #001



November 10, 2022

### Wetlands

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

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

U.S. Fish and Wildlife Service  
**National Wetlands Inventory**

# Emperor Oil Co Federal Gas B Com #001



November 10, 2022

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine

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

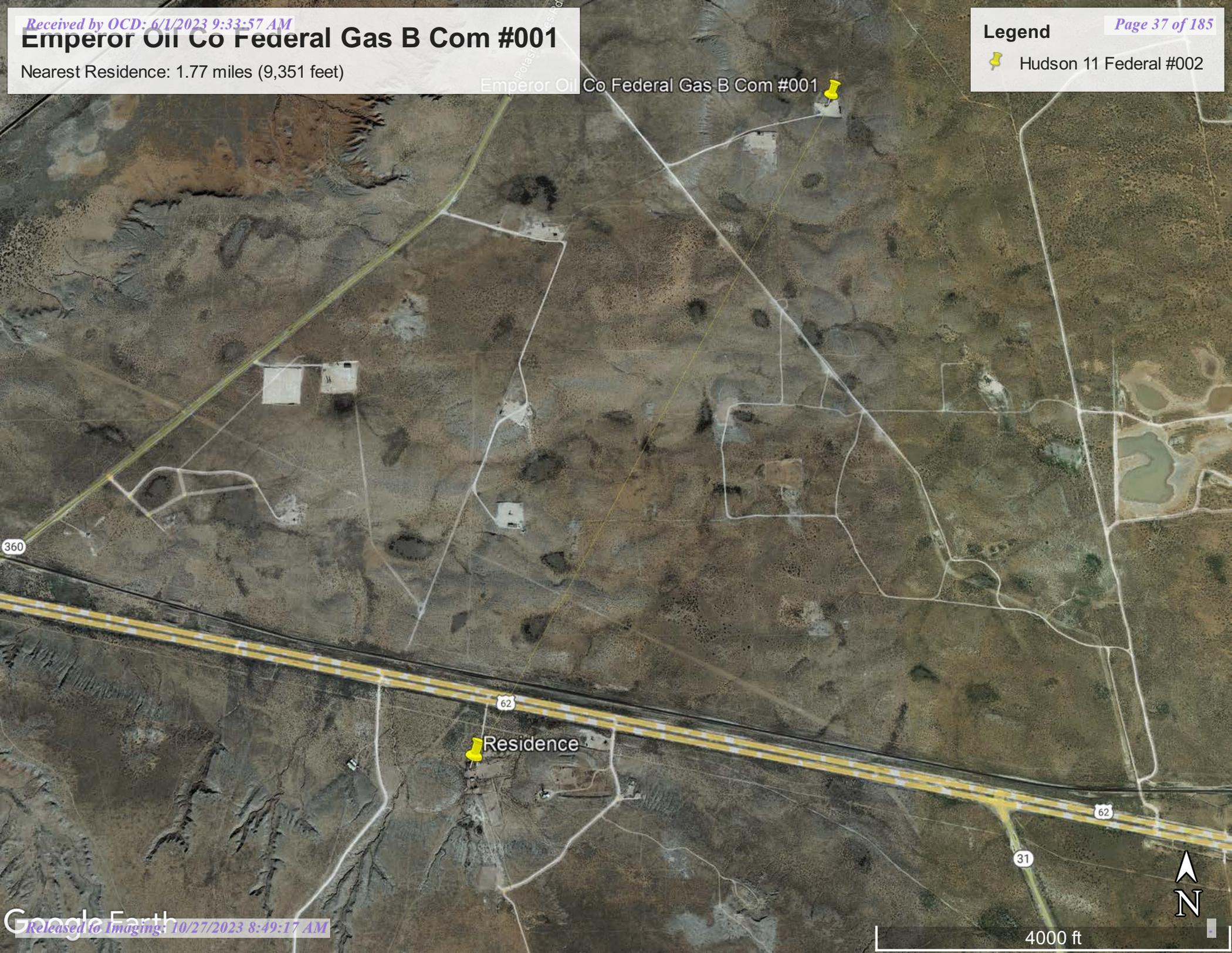
# Emperor Oil Co Federal Gas B Com #001

Nearest Residence: 1.77 miles (9,351 feet)

## Legend

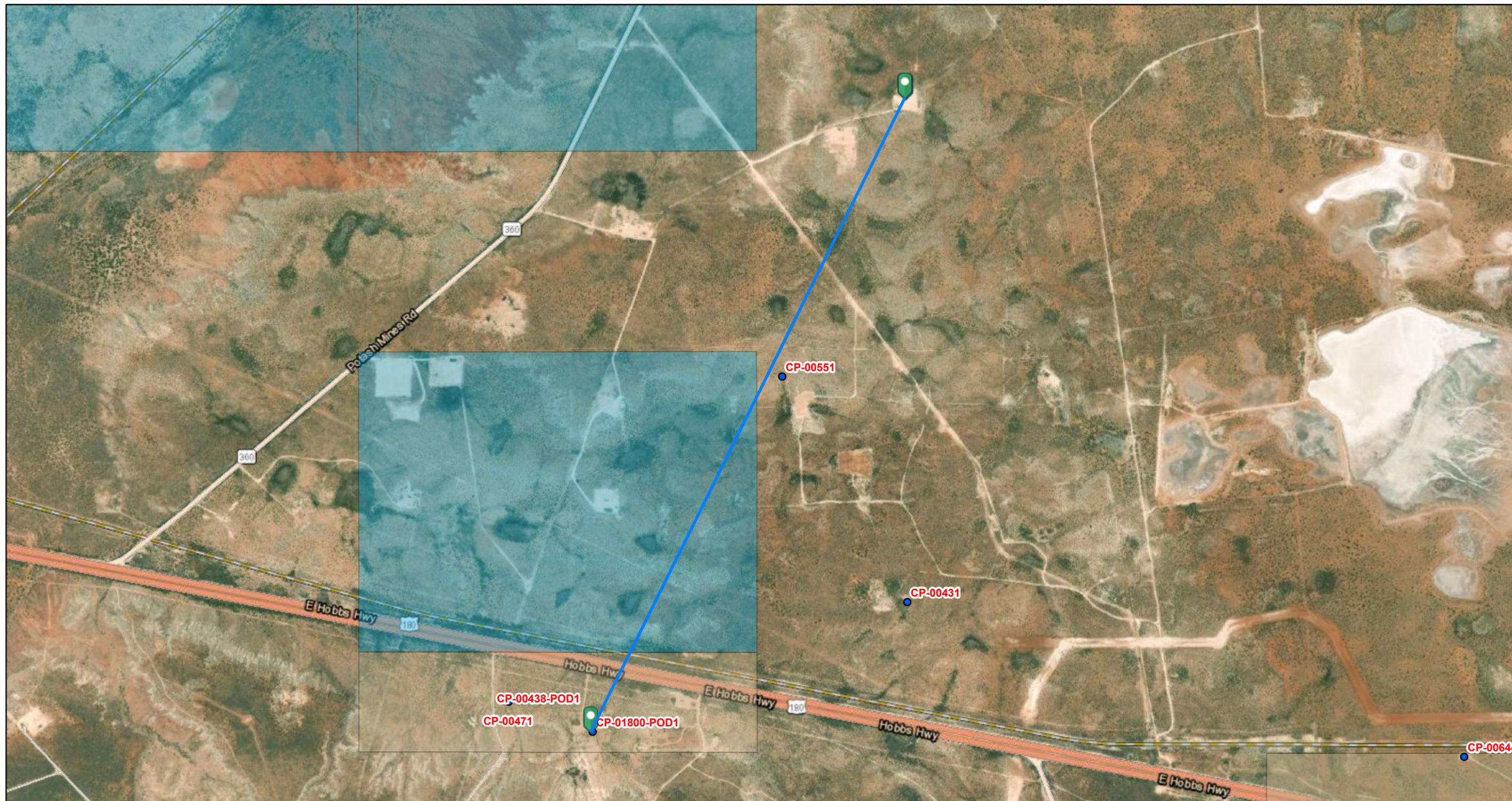
 Hudson 11 Federal #002

Emperor Oil Co Federal Gas B Com #001 



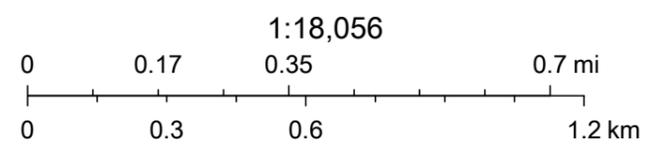
4000 ft

# Emperor Oil Co Federal Gas B Com #001



11/10/2022, 3:22:14 PM

- Override 1
- OSE District Boundary
- Both Estates
- Site Boundaries
- Active
- Subsurface Estate



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



# New Mexico Office of the State Engineer

## Water Right Summary



[get image list](#)

**WR File Number:** CP 01800      **Subbasin:** CP      **Cross Reference:** -  
**Primary Purpose:** STK 72-12-1 LIVESTOCK WATERING  
**Primary Status:** PMT PERMIT  
**Total Acres:**      **Subfile:** -      **Header:** -  
**Total Diversion:** 3      **Cause/Case:** -  
**Owner:** WINSTON BALLARD

**Documents on File**

Trn #	Doc	File/Act	Status		Transaction Desc.	From/	Acres	Diversion	Consumptive
			1	2		To			
<a href="#">658006</a>	<a href="#">72121</a>	<a href="#">2019-09-04</a>	PMT	LOG	CP 01800 POD1	T		3	

**Current Points of Diversion**

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q	64Q16Q4Sec	Tws	Rng	X	Y	Other Location Desc
<a href="#">CP 01800 POD1</a>	2243F	Shallow	3	3	4	32 20S 30E	594590	3598885	

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/10/22 2:40 PM

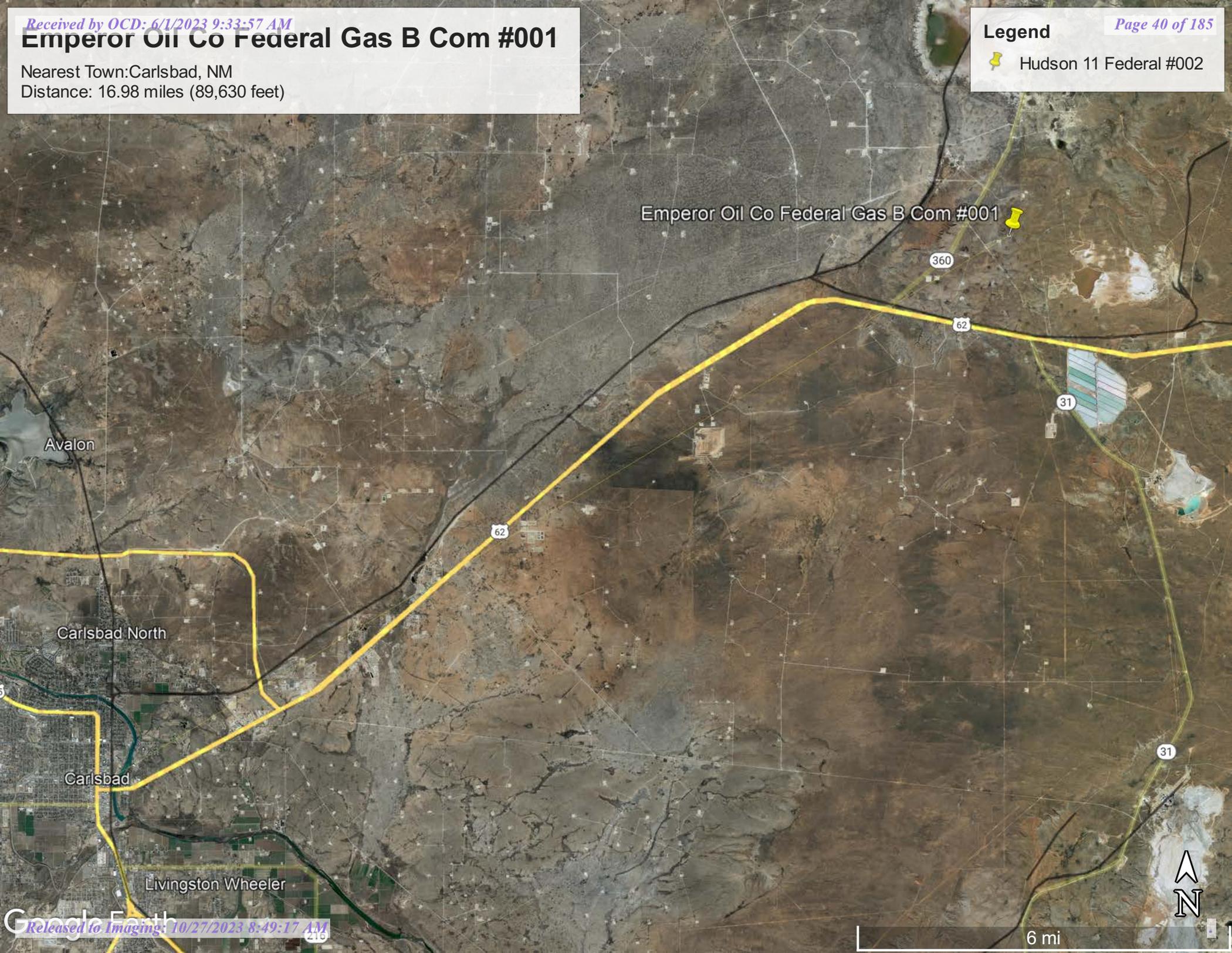
WATER RIGHT SUMMARY

# Emperor Oil Co Federal Gas B Com #001

Nearest Town: Carlsbad, NM  
Distance: 16.98 miles (89,630 feet)

## Legend

 Hudson 11 Federal #002



Emperor Oil Co Federal Gas B Com #001 

Avalon

Carlsbad North

Carlsbad

Livingston Wheeler

62

360

62

31

31

6 mi



U.S. Fish and Wildlife Service  
**National Wetlands Inventory**

# Emperor Oil Co Federal Gas B Com #001



U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands\_team@fws.gov

November 10, 2022

**Wetlands**

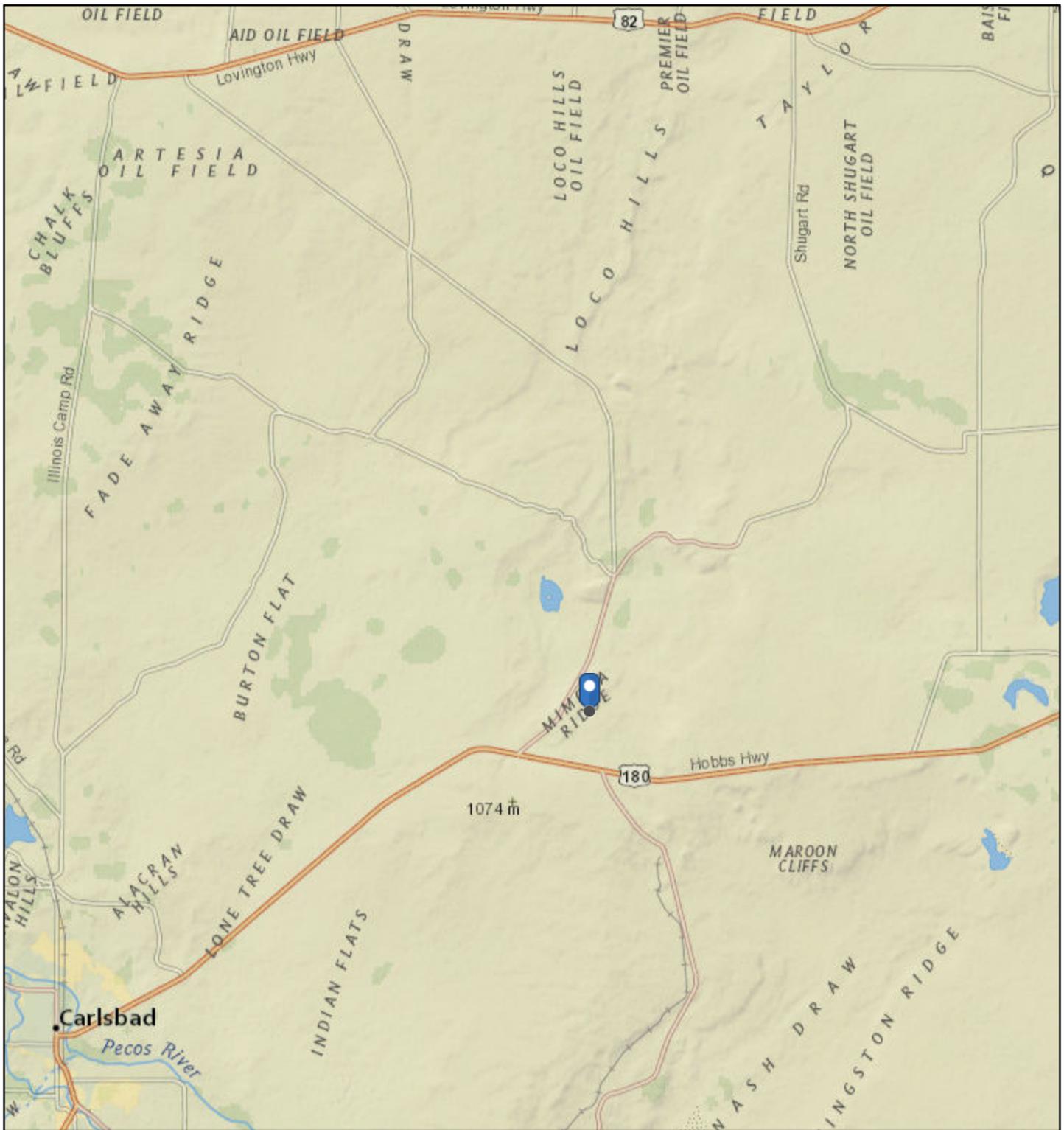
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine

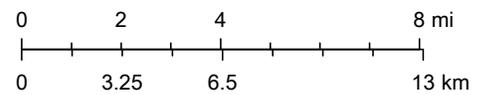
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# Emperor Oil Co Federal Gas B Com #001



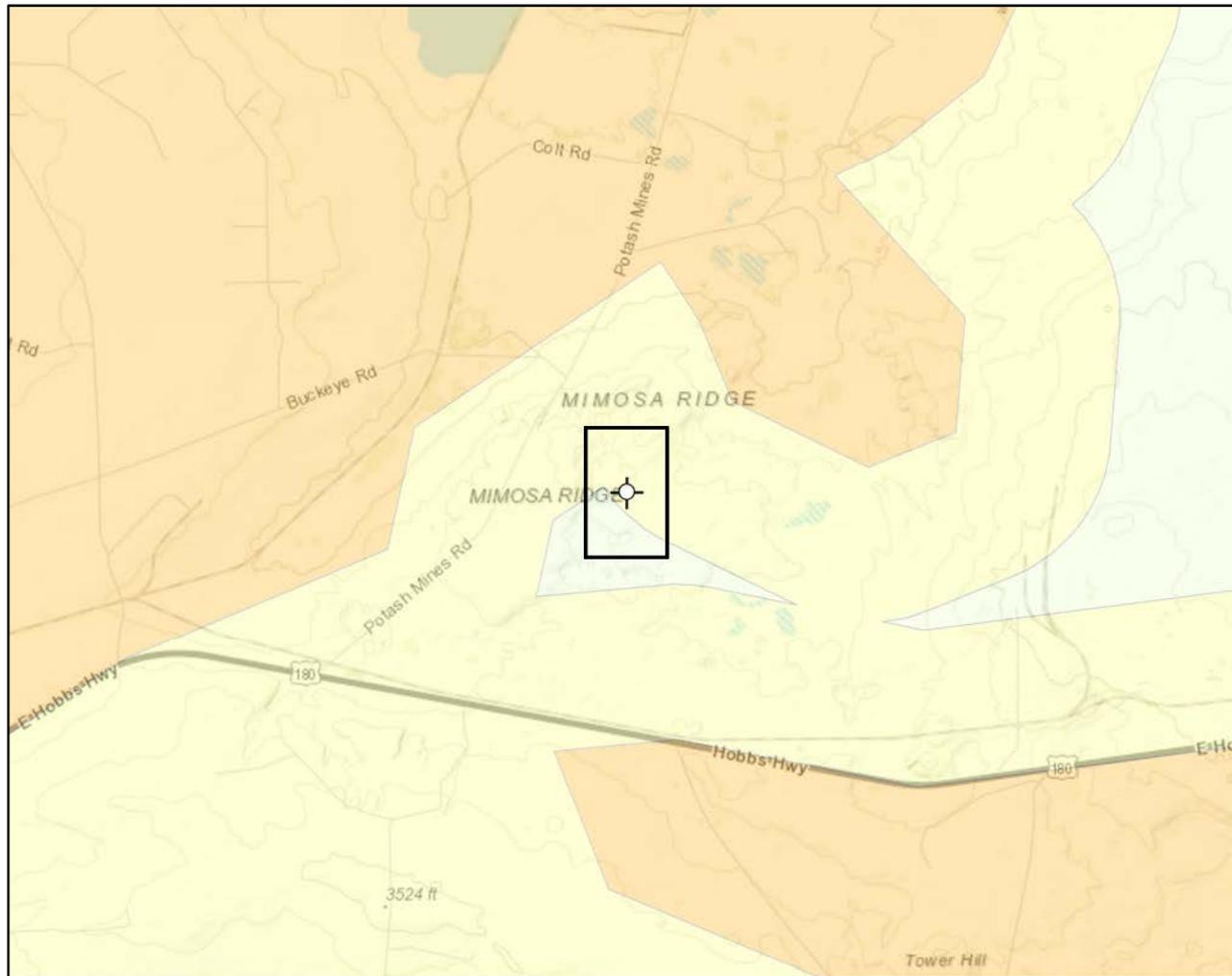
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1:288,895



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

Document Path: \\vrs-fs01.corp.international.vps04 - Geomatics\1-Projects\1\_US PROJECTS\Matador Resources\22E-03899\Figure X Karst Potential Schematic (22E-03899).mxd



**Karst Potential**

- Critical
- High
- Medium
- Low

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

**Overview Map**

0 0.25 0.5 1 mi

**Detail Map**

0 150 300 600 ft.



Map Center:  
Lat/Long: 32.546011, -103.978958

NAD 1983 UTM Zone 13N  
Date: Nov 24/22



**Karst Potential Schematic**  
**Emperor Oil Co. Federal Gas B Com #001**

FIGURE:

**X**



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

Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

**VERSATILITY. EXPERTISE.**

# National Flood Hazard Layer FIRMette



103°59'4"W 32°33'1"N



## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs

GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



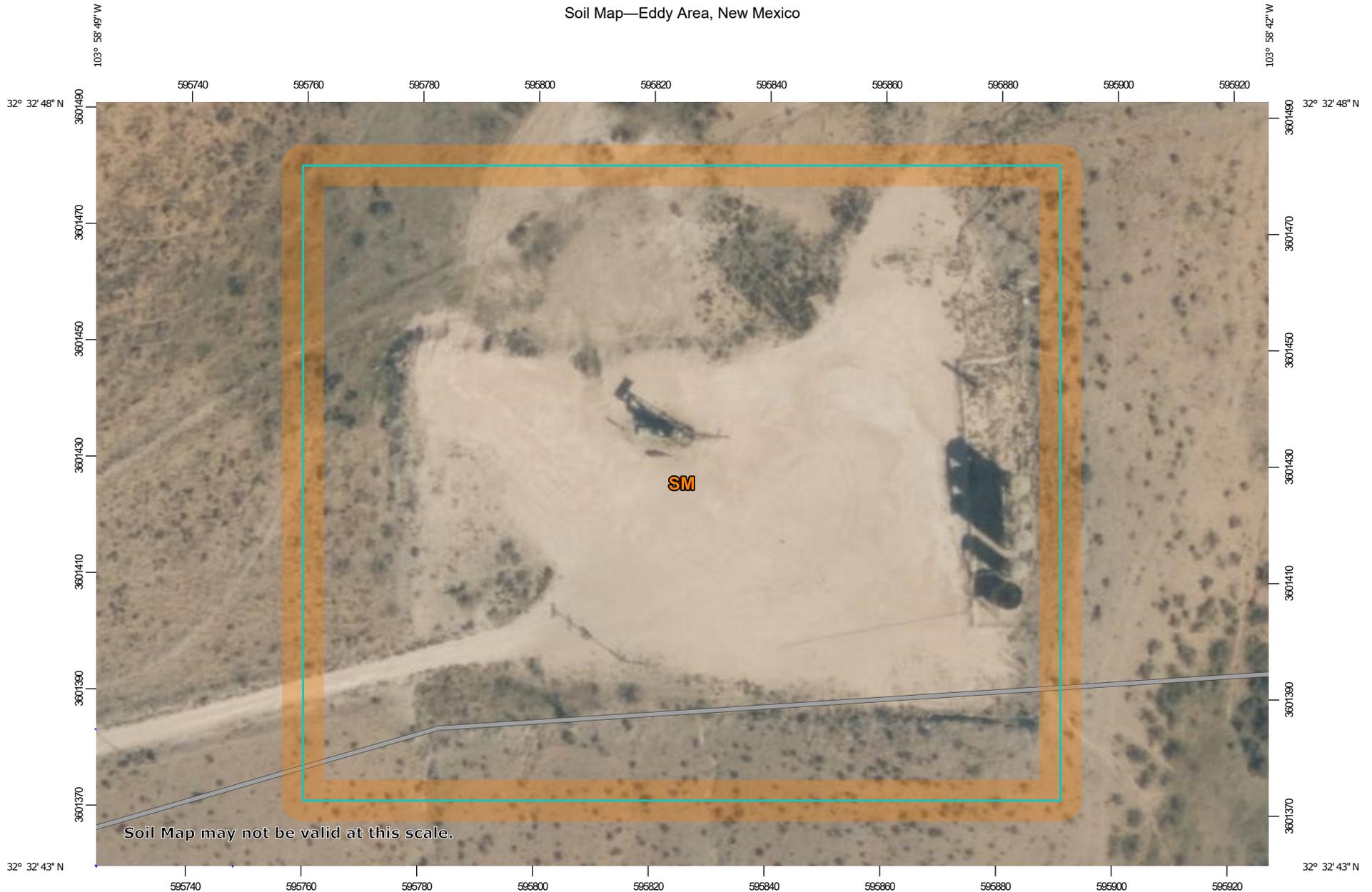
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

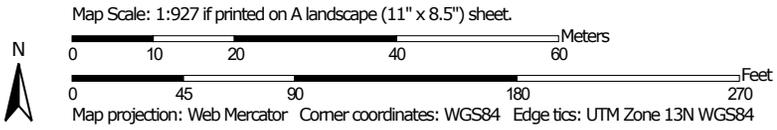
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/10/2022 at 5:16 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico



Soil Map may not be valid at this scale.



Soil Map—Eddy Area, New Mexico

**MAP LEGEND**

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

**MAP INFORMATION**

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

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

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

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

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

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

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

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

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

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

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

Soil Map—Eddy Area, New Mexico

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## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SM	Simona-Bippus complex, 0 to 5 percent slopes	3.5	100.0%
<b>Totals for Area of Interest</b>		<b>3.5</b>	<b>100.0%</b>

Map Unit Description: Simona-Bippus complex, 0 to 5 percent slopes---Eddy Area, New Mexico

## Eddy Area, New Mexico

### SM—Simona-Bippus complex, 0 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1w5x  
*Elevation:* 1,800 to 5,000 feet  
*Mean annual precipitation:* 8 to 24 inches  
*Mean annual air temperature:* 57 to 70 degrees F  
*Frost-free period:* 180 to 230 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Simona and similar soils:* 55 percent  
*Bippus and similar soils:* 30 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Simona

##### Setting

*Landform:* Plains, alluvial fans  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium and/or eolian sands

##### Typical profile

*H1 - 0 to 19 inches:* gravelly fine sandy loam  
*H2 - 19 to 23 inches:* indurated

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Very low (about 2.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D

Map Unit Description: Simona-Bippus complex, 0 to 5 percent slopes---Eddy Area, New Mexico

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*Ecological site:* R070BD002NM - Shallow Sandy  
*Hydric soil rating:* No

### Description of Bippus

#### Setting

*Landform:* Flood plains, alluvial fans  
*Landform position (three-dimensional):* Talf, rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium

#### Typical profile

*H1 - 0 to 37 inches:* silty clay loam  
*H2 - 37 to 60 inches:* clay loam

#### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* OccasionalNone  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 40 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* R070BC017NM - Bottomland  
*Hydric soil rating:* No

### Minor Components

#### Simona

*Percent of map unit:* 8 percent  
*Ecological site:* R070BD002NM - Shallow Sandy  
*Hydric soil rating:* No

#### Bippus

*Percent of map unit:* 7 percent  
*Ecological site:* R070BC017NM - Bottomland

Map Unit Description: Simona-Bippus complex, 0 to 5 percent slopes---Eddy Area, New Mexico

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*Hydric soil rating:* No

## Data Source Information

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

## Ecological site R070BD002NM Shallow Sandy

Accessed: 11/10/2022

### General information

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

#### Figure 1. Mapped extent

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

### Associated sites

R070BD004NM	<b>Sandy</b> Sandy sites often occur in association or in a complex with Shallow Sandy Sites.
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### Similar sites

R070BD004NM	<b>Sandy</b> Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.
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**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site occurs on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentary bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Plain (2) Fan piedmont (3) Alluvial fan
Elevation	866–1,372 m
Slope	1–9%
Aspect	Aspect is not a significant factor

### Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common.

Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for plant growth.

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

**Table 3. Representative climatic features**

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	330 mm

## Influencing water features

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

## Soil features

Soils are very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated caliche layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

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

Characteristic soils are:

Simona

Jerag

**Table 4. Representative soil features**

Surface texture	(1) Fine sandy loam (2) Loamy fine sand (3) Gravelly fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately slow to moderate

Soil depth	18–61 cm
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	2.54–5.08 cm
Calcium carbonate equivalent (0-101.6cm)	5–15%
Electrical conductivity (0-101.6cm)	0–4 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

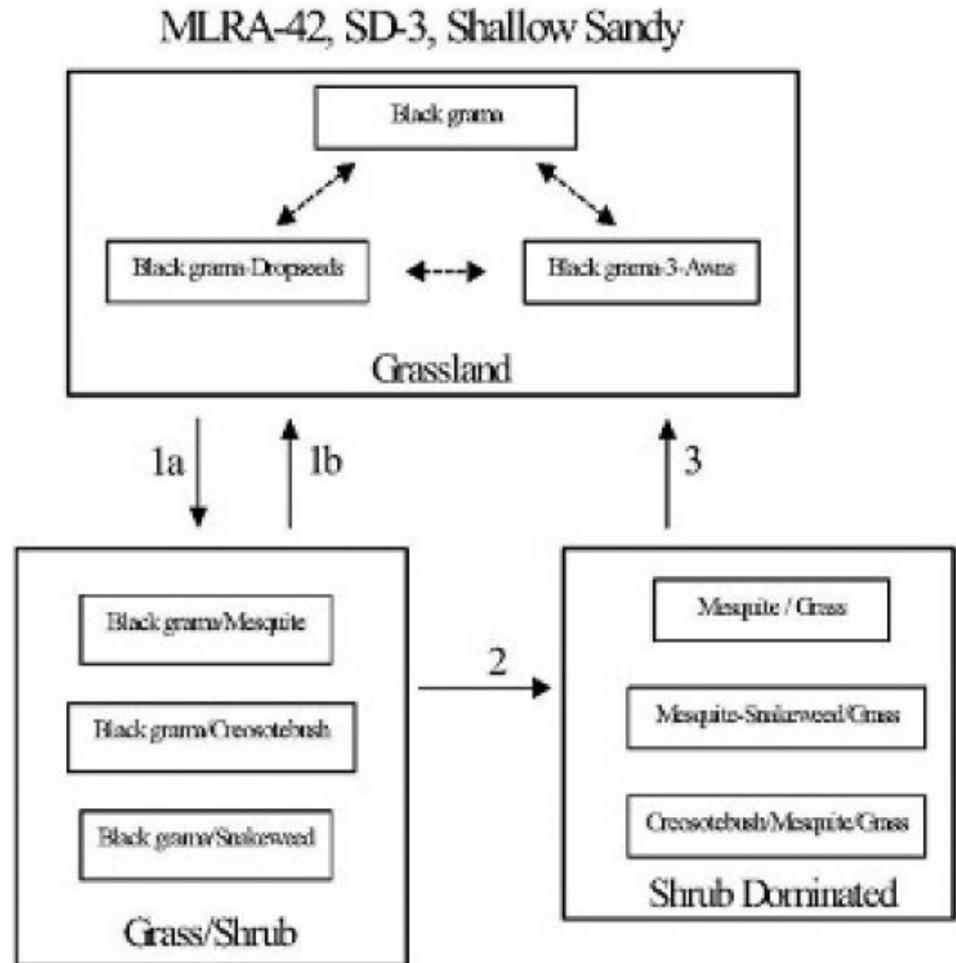
## Ecological dynamics

### Overview

The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

## State and transition model

**Plant Communities and Transitional Pathways (diagram)**



- 1a. Seed dispersal, drought, overgrazing, fire suppression.
- 1b. Prescribed fire, brush control, prescribed grazing.
- 2. Persistent loss of grass cover, resource competition, increased winter precipitation.
- 3. Brush control, range seeding, prescribed grazing.

Figure 4.

**State 1  
Historic Climax Plant Community**

**Community 1.1  
Historic Climax Plant Community**

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range

ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (< . 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

**Table 5. Annual production by plant type**

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	531	731	930
Forb	87	120	152
Shrub/Vine	54	74	94
<b>Total</b>	<b>672</b>	<b>925</b>	<b>1176</b>

**Table 6. Ground cover**

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

**Figure 6. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - Warm season plant community.**

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

**State 2  
Grass/Shrub**

**Community 2.1  
Grass/Shrub**

Grass/Shrub: This state is characterized by the notable presence of shrubs, especially mesquite, broom

snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs. 1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

**State 3  
Shrub Dominated**

**Community 3.1  
Shrub Dominated**

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

**Additional community tables**

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1	<b>Warm Season</b>			463–555	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	463–555	–
2	<b>Warm Season</b>			46–93	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	46–93	–

3	<b>Warm Season</b>			46-93	
	blue grama	BOGR2	<i>Bouteloua gracilis</i>	46-93	-
4	<b>Warm Season</b>			28-46	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	28-46	-
5	<b>Warm Season</b>			46-93	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	46-93	-
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	46-93	-
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	46-93	-
6	<b>Warm Season</b>			19-46	
	threeawn	ARIST	<i>Aristida</i>	19-46	-
7	<b>Warm Season</b>			46-93	
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	46-93	-
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	46-93	-
8	<b>Warm Season</b>			46-93	
	mat sandbur	CELO3	<i>Cenchrus longispinus</i>	46-93	-
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	46-93	-
9	<b>Other Perennial Grasses</b>			28-46	
	Grass, perennial	2GP	<i>Grass, perennial</i>	28-46	-
<b>Shrub/Vine</b>					
10	<b>Shrub</b>			9-28	
	javelina bush	COER5	<i>Condalia ericoides</i>	9-28	-
11	<b>Shrub</b>			9-28	
	yucca	YUCCA	<i>Yucca</i>	9-28	-
12	<b>Shrub</b>			9-28	
	jointfir	EPHED	<i>Ephedra</i>	9-28	-
	littleleaf ratany	KRER	<i>Krameria erecta</i>	9-28	-
13	<b>Shrub</b>			9-28	
	featherplume	DAFO	<i>Dalea formosa</i>	9-28	-
14	<b>Shrub</b>			9-28	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	9-28	-
15	<b>Other Shrubs</b>			28-46	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	28-46	-
<b>Forb</b>					
16	<b>Forb</b>			19-46	
	leatherweed	CRPOP	<i>Croton pottsii var. pottsii</i>	19-46	-
	Goodding's tansyaster	MAPIG2	<i>Machaeranthera pinnatifida ssp. gooddingii var. gooddingii</i>	19-46	-
17	<b>Forb</b>			19-46	
	woolly groundsel	PACA15	<i>Packera cana</i>	19-46	-
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus var. flaccidus</i>	19-46	-
18	<b>Forb</b>			9-28	
	whitest evening primrose	OEAL	<i>Oenothera albicaulis</i>	9-28	-
19	<b>Other Forbs</b>			9-28	
	Forb (herbaceous, not grass	2FORB	<i>Forb (herbaceous, not grass nor grass-</i>	9-28	-

nor grass-like)

like)

## Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

## Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations  
Soil Series Hydrologic Group  
Jarag D  
Simona D

## Recreational uses

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

## Wood products

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

## Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month  
Similarity Index Ac/AUM  
100 - 76 2.5 – 3.5  
75 – 51 3.2 – 4.6  
50 – 26 4.5 – 7.5  
25 – 0 7.6 +

## Inventory data references

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

**Other references**

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.
2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.
3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.
4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.
5. Tiedemann, A. R. and J. O. Klemmedson. 1977. Effect of mesquite trees on vegetation and soils in the desert grassland. J. Range Manage. 30: 361-367.
6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: <http://www.fs.fed.us/database/feis/> [accessed 2/10/03].
7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>
8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>

**Contributors**

David Trujillo  
 Don Sylvester

**Rangeland health reference sheet**

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

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

## Indicators

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

---

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

Dominant:

Sub-dominant:

Other:

Additional:

---

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

---

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

---

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

---

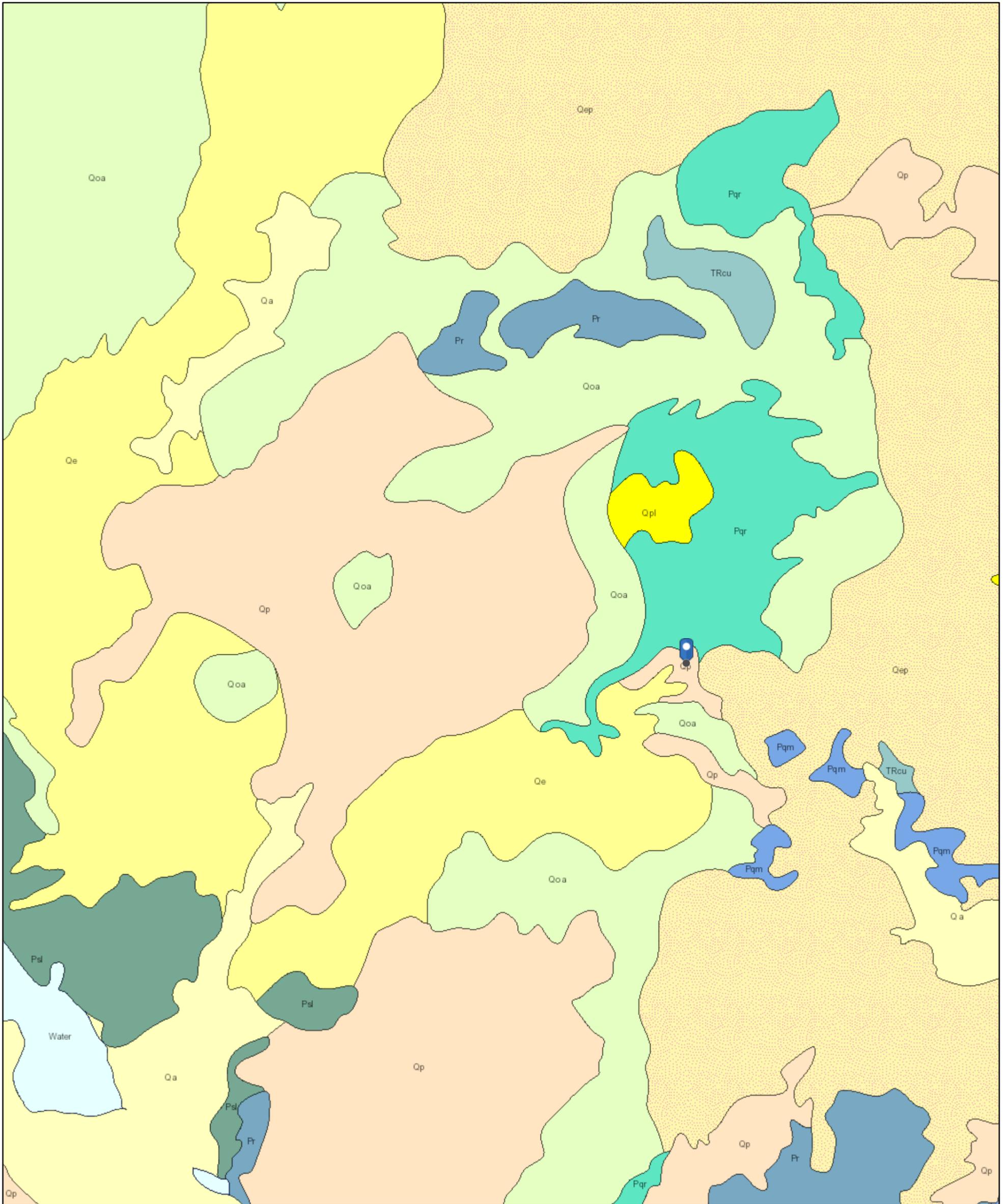
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management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

---

17. **Perennial plant reproductive capability:**

---

# Emperor Oil Federal Gas B Com #001

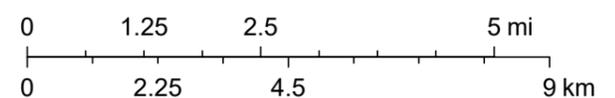


11/10/2022, 3:20:40 PM

Lithologic Units

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

1:144,448



Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census

## **ATTACHMENT 6**



Dhugal Hanton <vertexresourcegroupusa@gmail.com>

---

## NAB1527329788/2RP-3305 Confirmatory Sample Notification Emperor

2 messages

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**Dhugal Hanton** <vertexresourcegroupusa@gmail.com>

Fri, Apr 21, 2023 at 3:31 PM

To: "Enviro, OCD, EMNRD" <OCD.Enviro@emnrd.nm.gov>, "CFO\_Spill, BLM\_NM" <blm\_nm\_cfo\_spill@blm.gov>

Cc: Arsenio Jones <arsenio.jones@matadorresources.com>, Clinton Talley <clinton.talley@matadorresources.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at the Emperor for the following release:

NAB1527329788 DOR: September 27, 2015

This work will be completed on behalf of Matador Production Company.

Starting on Wednesday, April 26th and continuing through Saturday April 29th, 2023, at approximately 12:30 p.m., Monica Peppin of Vertex will be onsite to conduct confirmation sampling for the above release.

She can be reached at 575-361-9880. If you need directions to the site, please do not hesitate to contact her. If you have any questions or concerns regarding this notification, please give me a call at 575-361-9880.

Thank you,  
Monica

**Monica Peppin, A.S.**

Project Manager

Vertex Resource Services Inc.

3101 Boyd Drive,

Carlsbad, NM 88220

**P 575.725.5001 Ext. 711**

**C 575.361.9880**

**F**

[www.vertex.ca](http://www.vertex.ca)

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---

**Enviro, OCD, EMNRD** <OCD.Enviro@emnrd.nm.gov>

Fri, Apr 21, 2023 at 4:23 PM

To: Dhugal Hanton <vertexresourcegroupusa@gmail.com>

Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov>, "Hamlet, Robert, EMNRD" <Robert.Hamlet@emnrd.nm.gov>

Monica,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

**Jocelyn Harimon** • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)

[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



---

**From:** Dhugal Hanton <[vertexresourcegroupusa@gmail.com](mailto:vertexresourcegroupusa@gmail.com)>

**Sent:** Friday, April 21, 2023 3:31 PM

**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>; CFO\_Spill, BLM\_NM <[blm\\_nm\\_cfo\\_spill@blm.gov](mailto:blm_nm_cfo_spill@blm.gov)>

**Cc:** Arsenio Jones <[arsenio.jones@matadorresources.com](mailto:arsenio.jones@matadorresources.com)>; Clinton Talley <[clinton.talley@matadorresources.com](mailto:clinton.talley@matadorresources.com)>

**Subject:** [EXTERNAL] NAB1527329788/2RP-3305 Confirmatory Sample Notification Emperor

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

[Quoted text hidden]

## **ATTACHMENT 7**



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

December 01, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Emperor Fed Com 001

OrderNo.: 2211C38

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 18 sample(s) on 11/22/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2211C38

Date Reported: 12/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-02 0'

Project: Emperor Fed Com 001

Collection Date: 11/17/2022 10:25:00 AM

Lab ID: 2211C38-001

Matrix: SOIL

Received Date: 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 7:01:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/29/2022 7:01:03 PM
Surr: DNOP	87.4	21-129		%Rec	1	11/29/2022 7:01:03 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/28/2022 11:47:00 PM
Surr: BFB	96.1	37.7-212		%Rec	1	11/28/2022 11:47:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	11/28/2022 11:47:00 PM
Toluene	ND	0.046		mg/Kg	1	11/28/2022 11:47:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/28/2022 11:47:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/28/2022 11:47:00 PM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	11/28/2022 11:47:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	1100	59		mg/Kg	20	11/29/2022 4:54:15 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-02 2'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/17/2022 10:35:00 AM

**Lab ID:** 2211C38-002

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/29/2022 7:13:50 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2022 7:13:50 PM
Surr: DNOP	88.1	21-129		%Rec	1	11/29/2022 7:13:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 12:07:00 AM
Surr: BFB	90.2	37.7-212		%Rec	1	11/29/2022 12:07:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 12:07:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 12:07:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 12:07:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2022 12:07:00 AM
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	11/29/2022 12:07:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	840	60		mg/Kg	20	11/29/2022 5:06:39 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-02 4'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/17/2022 10:45:00 AM

**Lab ID:** 2211C38-003

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 7:26:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 7:26:35 PM
Surr: DNOP	85.2	21-129		%Rec	1	11/29/2022 7:26:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2022 12:26:00 AM
Surr: BFB	89.9	37.7-212		%Rec	1	11/29/2022 12:26:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 12:26:00 AM
Toluene	ND	0.048		mg/Kg	1	11/29/2022 12:26:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2022 12:26:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/29/2022 12:26:00 AM
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	11/29/2022 12:26:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	540	60		mg/Kg	20	11/29/2022 5:43:52 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-03 0'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/17/2022 10:50:00 AM

**Lab ID:** 2211C38-004

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	240	14		mg/Kg	1	11/29/2022 7:39:20 PM
Motor Oil Range Organics (MRO)	220	47		mg/Kg	1	11/29/2022 7:39:20 PM
Surr: DNOP	88.1	21-129		%Rec	1	11/29/2022 7:39:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/29/2022 12:46:00 AM
Surr: BFB	88.3	37.7-212		%Rec	1	11/29/2022 12:46:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 12:46:00 AM
Toluene	ND	0.050		mg/Kg	1	11/29/2022 12:46:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/29/2022 12:46:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 12:46:00 AM
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	11/29/2022 12:46:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	460	60		mg/Kg	20	11/29/2022 5:56:16 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-03 2'

**Project:** Emperor Fed Com 001

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

**Lab ID:** 2211C38-005

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/29/2022 7:52:00 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/29/2022 7:52:00 PM
Surr: DNOP	106	21-129		%Rec	1	11/29/2022 7:52:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 1:05:00 AM
Surr: BFB	96.7	37.7-212		%Rec	1	11/29/2022 1:05:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 1:05:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 1:05:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 1:05:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/29/2022 1:05:00 AM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	11/29/2022 1:05:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	190	60		mg/Kg	20	11/29/2022 6:33:29 PM

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

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

Analytical Report

Lab Order 2211C38

Date Reported: 12/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-03 4'

Project: Emperor Fed Com 001

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

Lab ID: 2211C38-006

Matrix: SOIL

Received Date: 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 8:04:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 8:04:40 PM
Surr: DNOP	97.6	21-129		%Rec	1	11/29/2022 8:04:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 1:25:00 AM
Surr: BFB	92.1	37.7-212		%Rec	1	11/29/2022 1:25:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 1:25:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 1:25:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 1:25:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2022 1:25:00 AM
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	11/29/2022 1:25:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	500	59		mg/Kg	20	11/29/2022 7:10:43 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-07 0'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 9:00:00 AM

**Lab ID:** 2211C38-007

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 8:17:25 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 8:17:25 PM
Surr: DNOP	101	21-129		%Rec	1	11/29/2022 8:17:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 1:45:00 AM
Surr: BFB	92.4	37.7-212		%Rec	1	11/29/2022 1:45:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 1:45:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 1:45:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 1:45:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2022 1:45:00 AM
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	11/29/2022 1:45:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	410	60		mg/Kg	20	11/29/2022 7:23:07 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-07 2'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 9:10:00 AM

**Lab ID:** 2211C38-008

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 8:30:34 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 8:30:34 PM
Surr: DNOP	108	21-129		%Rec	1	11/29/2022 8:30:34 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2022 2:04:00 AM
Surr: BFB	91.0	37.7-212		%Rec	1	11/29/2022 2:04:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 2:04:00 AM
Toluene	ND	0.047		mg/Kg	1	11/29/2022 2:04:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2022 2:04:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/29/2022 2:04:00 AM
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	11/29/2022 2:04:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	82	60		mg/Kg	20	11/29/2022 7:35:31 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-07 4'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 9:20:00 AM

**Lab ID:** 2211C38-009

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 8:43:46 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 8:43:46 PM
Surr: DNOP	100	21-129		%Rec	1	11/29/2022 8:43:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 2:44:00 AM
Surr: BFB	90.3	37.7-212		%Rec	1	11/29/2022 2:44:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 2:44:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 2:44:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 2:44:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	11/29/2022 2:44:00 AM
Surr: 4-Bromofluorobenzene	116	70-130		%Rec	1	11/29/2022 2:44:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	11/29/2022 8:12:44 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-09 0'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:00:00 AM

**Lab ID:** 2211C38-010

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 8:57:02 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 8:57:02 PM
Surr: DNOP	89.4	21-129		%Rec	1	11/29/2022 8:57:02 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/29/2022 3:03:00 AM
Surr: BFB	91.4	37.7-212		%Rec	1	11/29/2022 3:03:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 3:03:00 AM
Toluene	ND	0.050		mg/Kg	1	11/29/2022 3:03:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/29/2022 3:03:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 3:03:00 AM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	11/29/2022 3:03:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	340	60		mg/Kg	20	11/29/2022 8:25:08 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-09 2'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:10:00 AM

**Lab ID:** 2211C38-011

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/29/2022 9:10:35 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/29/2022 9:10:35 PM
Surr: DNOP	87.9	21-129		%Rec	1	11/29/2022 9:10:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 3:23:00 AM
Surr: BFB	94.4	37.7-212		%Rec	1	11/29/2022 3:23:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 3:23:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 3:23:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 3:23:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 3:23:00 AM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	11/29/2022 3:23:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	130	60		mg/Kg	20	11/29/2022 8:37:33 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-09 4'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:20:00 AM

**Lab ID:** 2211C38-012

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 9:23:51 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/29/2022 9:23:51 PM
Surr: DNOP	93.3	21-129		%Rec	1	11/29/2022 9:23:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2022 3:42:00 AM
Surr: BFB	92.5	37.7-212		%Rec	1	11/29/2022 3:42:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 3:42:00 AM
Toluene	ND	0.048		mg/Kg	1	11/29/2022 3:42:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2022 3:42:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/29/2022 3:42:00 AM
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	11/29/2022 3:42:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	190	60		mg/Kg	20	11/29/2022 8:49:58 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-10 0'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:25:00 AM

**Lab ID:** 2211C38-013

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 9:37:16 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/29/2022 9:37:16 PM
Surr: DNOP	85.0	21-129		%Rec	1	11/29/2022 9:37:16 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 4:02:00 AM
Surr: BFB	92.6	37.7-212		%Rec	1	11/29/2022 4:02:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 4:02:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 4:02:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 4:02:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 4:02:00 AM
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	11/29/2022 4:02:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	620	60		mg/Kg	20	11/29/2022 9:02:23 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-10 2'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:35:00 AM

**Lab ID:** 2211C38-014

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/29/2022 9:50:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2022 9:50:28 PM
Surr: DNOP	103	21-129		%Rec	1	11/29/2022 9:50:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2022 4:22:00 AM
Surr: BFB	93.7	37.7-212		%Rec	1	11/29/2022 4:22:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 4:22:00 AM
Toluene	ND	0.048		mg/Kg	1	11/29/2022 4:22:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2022 4:22:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/29/2022 4:22:00 AM
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	11/29/2022 4:22:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	140	60		mg/Kg	20	11/29/2022 9:14:47 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-10 4'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 10:45:00 AM

**Lab ID:** 2211C38-015

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/29/2022 10:03:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/29/2022 10:03:44 PM
Surr: DNOP	115	21-129		%Rec	1	11/29/2022 10:03:44 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/29/2022 4:41:00 AM
Surr: BFB	97.8	37.7-212		%Rec	1	11/29/2022 4:41:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 4:41:00 AM
Toluene	ND	0.050		mg/Kg	1	11/29/2022 4:41:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/29/2022 4:41:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 4:41:00 AM
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	11/29/2022 4:41:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	270	60		mg/Kg	20	11/29/2022 9:27:12 PM

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

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

Analytical Report

Lab Order 2211C38

Date Reported: 12/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-11 0'

Project: Emperor Fed Com 001

Collection Date: 11/18/2022 10:55:00 AM

Lab ID: 2211C38-016

Matrix: SOIL

Received Date: 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	40	15		mg/Kg	1	11/29/2022 10:17:01 PM
Motor Oil Range Organics (MRO)	49	49		mg/Kg	1	11/29/2022 10:17:01 PM
Surr: DNOP	92.1	21-129		%Rec	1	11/29/2022 10:17:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/29/2022 5:01:00 AM
Surr: BFB	93.0	37.7-212		%Rec	1	11/29/2022 5:01:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	11/29/2022 5:01:00 AM
Toluene	ND	0.046		mg/Kg	1	11/29/2022 5:01:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	11/29/2022 5:01:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/29/2022 5:01:00 AM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	11/29/2022 5:01:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	11/29/2022 9:39:37 PM

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

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

**Analytical Report**

Lab Order **2211C38**

Date Reported: **12/1/2022**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** TP22-11 2'

**Project:** Emperor Fed Com 001

**Collection Date:** 11/18/2022 11:05:00 AM

**Lab ID:** 2211C38-017

**Matrix:** SOIL

**Received Date:** 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 10:30:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/29/2022 10:30:08 PM
Surr: DNOP	103	21-129		%Rec	1	11/29/2022 10:30:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2022 5:21:00 AM
Surr: BFB	96.5	37.7-212		%Rec	1	11/29/2022 5:21:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	11/29/2022 5:21:00 AM
Toluene	ND	0.049		mg/Kg	1	11/29/2022 5:21:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2022 5:21:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2022 5:21:00 AM
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	11/29/2022 5:21:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	11/29/2022 9:52:01 PM

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

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

Analytical Report

Lab Order 2211C38

Date Reported: 12/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: TP22-11 4'

Project: Emperor Fed Com 001

Collection Date: 11/18/2022 11:15:00 AM

Lab ID: 2211C38-018

Matrix: SOIL

Received Date: 11/22/2022 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/29/2022 10:43:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/29/2022 10:43:19 PM
Surr: DNOP	84.6	21-129		%Rec	1	11/29/2022 10:43:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/29/2022 5:41:00 AM
Surr: BFB	97.7	37.7-212		%Rec	1	11/29/2022 5:41:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	11/29/2022 5:41:00 AM
Toluene	ND	0.050		mg/Kg	1	11/29/2022 5:41:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/29/2022 5:41:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2022 5:41:00 AM
Surr: 4-Bromofluorobenzene	120	70-130		%Rec	1	11/29/2022 5:41:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	360	59		mg/Kg	20	11/29/2022 10:04:26 PM

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2211C38

01-Dec-22

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

**Project:** Emperor Fed Com 001

Sample ID: <b>MB-71740</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71740</b>		RunNo: <b>92899</b>							
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3344980</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-71740</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71740</b>		RunNo: <b>92899</b>							
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3344981</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.0	90	110			

Sample ID: <b>MB-71741</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71741</b>		RunNo: <b>92899</b>							
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3344982</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-71741</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71741</b>		RunNo: <b>92899</b>							
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3344983</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.6	90	110			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2211C38

01-Dec-22

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

**Project:** Emperor Fed Com 001

Sample ID: <b>MB-71714</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71714</b>	RunNo: <b>92867</b>								
Prep Date: <b>11/28/2022</b>	Analysis Date: <b>11/29/2022</b>	SeqNo: <b>3343943</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.5		10.00		74.8	21	129			

Sample ID: <b>LCS-71714</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71714</b>	RunNo: <b>92867</b>								
Prep Date: <b>11/28/2022</b>	Analysis Date: <b>11/29/2022</b>	SeqNo: <b>3343944</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.4	64.4	127			
Surr: DNOP	3.6		5.000		71.5	21	129			

Sample ID: <b>MB-71717</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71717</b>	RunNo: <b>92867</b>								
Prep Date: <b>11/28/2022</b>	Analysis Date: <b>11/29/2022</b>	SeqNo: <b>3343968</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.7		10.00		86.8	21	129			

Sample ID: <b>LCS-71717</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71717</b>	RunNo: <b>92867</b>								
Prep Date: <b>11/28/2022</b>	Analysis Date: <b>11/29/2022</b>	SeqNo: <b>3343969</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.0		5.000		79.9	21	129			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2211C38

01-Dec-22

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

**Project:** Emperor Fed Com 001

Sample ID: <b>ics-71696</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71696</b>		RunNo: <b>92873</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/28/2022</b>		SeqNo: <b>3343520</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	72.3	137			
Surr: BFB	2000		1000		201	37.7	212			

Sample ID: <b>mb-71696</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71696</b>		RunNo: <b>92873</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/28/2022</b>		SeqNo: <b>3343521</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.6	37.7	212			

Sample ID: <b>mb-71697</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71697</b>		RunNo: <b>92885</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3343873</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.0	37.7	212			

Sample ID: <b>ics-71697</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71697</b>		RunNo: <b>92885</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3343874</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1900		1000		192	37.7	212			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2211C38

01-Dec-22

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

**Project:** Emperor Fed Com 001

Sample ID: <b>ics-71696</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71696</b>		RunNo: <b>92873</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/28/2022</b>		SeqNo: <b>3343573</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.025	1.000	0	133	80	120			S
Toluene	1.3	0.050	1.000	0	131	80	120			S
Ethylbenzene	1.3	0.050	1.000	0	131	80	120			S
Xylenes, Total	3.9	0.10	3.000	0	130	80	120			S
Surr: 4-Bromofluorobenzene	1.2		1.000		120	70	130			

Sample ID: <b>mb-71696</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71696</b>		RunNo: <b>92873</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/28/2022</b>		SeqNo: <b>3343574</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		118	70	130			

Sample ID: <b>mb-71697</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71697</b>		RunNo: <b>92885</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3343918</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		93.2	70	130			

Sample ID: <b>LCS-71697</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71697</b>		RunNo: <b>92885</b>							
Prep Date: <b>11/23/2022</b>	Analysis Date: <b>11/29/2022</b>		SeqNo: <b>3343919</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		93.3	70	130			

**Qualifiers:**

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



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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2211C38

RcptNo: 1

Received By: Juan Rojas

11/22/2022 7:30:00 AM

[Signature]

Completed By: Sean Livingston

11/22/2022 7:58:45 AM

[Signature]

Reviewed By: [Signature]

11/22/22

Chain of Custody

1. Is Chain of Custody complete? Yes [checked] No [ ] Not Present [ ]

2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes [checked] No [ ] NA [ ]

4. Were all samples received at a temperature of >0° C to 6.0°C Yes [checked] No [ ] NA [ ]

5. Sample(s) in proper container(s)? Yes [checked] No [ ]

6. Sufficient sample volume for indicated test(s)? Yes [checked] No [ ]

7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No [ ]

8. Was preservative added to bottles? Yes [ ] No [checked] NA [ ]

9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [ ] No [ ] NA [checked]

10. Were any sample containers received broken? Yes [ ] No [checked]

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes [checked] No [ ]

12. Are matrices correctly identified on Chain of Custody? Yes [checked] No [ ]

13. Is it clear what analyses were requested? Yes [checked] No [ ]

14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes [checked] No [ ]

# of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by: [Signature]

Special Handling (if applicable)

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

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

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 1.1, Good, [ ], [ ], [ ], [ ]

### Chain-of-Custody Record

Client: Vortex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

Standard  Level 4 (Full Validation)

Accreditation:  Az Compliance

NELAC  Other

EDD (Type)

Turn-Around Time:  
 Standard  Rush 5 Day

Project Name:  
Emperor Fed Cont #001

Project #:  
22E-03899

Project Manager:  
Monica Pappin

Sampler: A. Harris

On Ice:  Yes  No

# of Coolers: 1

Cooler Temp (including CP): 1, 1-0-0-1 (°C)

Container Type and #

Preservative Type

HEAL No.

402 Ice 2211038

Date

Time

Matrix

Sample Name

11/17 10:25 Soil TP22-02 01

11/17 10:35 | TP22-02 2'

11/17 10:45 | TP22-02 4'

11/17 10:50 | TP22-03 01

11/17 11:00 | TP22-03 2'

11/17 11:10 | TP22-03 4'

11/18 9:00 | TP22-07 01

11/18 9:10 | TP22-07 2'

11/18 9:20 | TP22-07 4'

11/18 10:00 | TP22-09 01

11/18 10:10 | TP22-09 2'

11/18 10:20 | TP22-09 4'

Date: 11/18 9:00

Time: 9:00

Relinquished by: [Signature]

Date: 11/18 9:00

Time: 9:00

Relinquished by: [Signature]

Received by: [Signature]

Via: Carrier

Date: 11/18 9:10

Time: 9:10

Received by: [Signature]

Date: 11/22 7:30

Time: 7:30

Relinquished by: [Signature]



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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

Remarks:

### Chain-of-Custody Record

Client: Vertex Turn-Around Time: Standard  Rush 5 DAY

Project Name: Emperor Fed Com #001

Project #: 22E-03899

Project Manager: Monica Pappin

Sampler: A. Harris

On Ice:  Yes  No

# of Coolers: \_\_\_\_\_

Cooler Temp (including CF): 1.1-0=1.1 (°C)

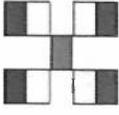
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
11/18	10:25	Sor	TP22-10 0'	402	146	013
11/18	10:35		TP22-10 2'			014
11/18	10:45		TP22-10 4'			015
11/18	10:55		TP22-11 0'			016
11/18	11:05		TP22-11 2'			017
11/18	11:15		TP22-11 4'			018

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

Relinquished by: [Signature] Date: 11/22/22 Time: 9:10

Received by: [Signature] Date: 11/22/22 Time: 7:30

Remarks: Matador



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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



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

May 23, 2023

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Emperor Oil Co Fed Gas B Com 001

OrderNo.: 2305051

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 69 sample(s) on 5/2/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-01 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:00:00 AM

**Lab ID:** 2305051-001

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/3/2023 6:33:01 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 6:33:01 PM
Surr: DNOP	79.1	69-147		%Rec	1	5/3/2023 6:33:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 4:19:59 PM
Surr: BFB	73.9	15-244		%Rec	1	5/4/2023 4:19:59 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 4:19:59 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 4:19:59 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 4:19:59 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/4/2023 4:19:59 PM
Surr: 4-Bromofluorobenzene	88.4	39.1-146		%Rec	1	5/4/2023 4:19:59 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 1:13:50 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-02 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:05:00 AM

**Lab ID:** 2305051-002

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/3/2023 6:57:25 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 6:57:25 PM
Surr: DNOP	81.5	69-147		%Rec	1	5/3/2023 6:57:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 5:30:32 PM
Surr: BFB	67.9	15-244		%Rec	1	5/4/2023 5:30:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 5:30:32 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 5:30:32 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 5:30:32 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 5:30:32 PM
Surr: 4-Bromofluorobenzene	87.1	39.1-146		%Rec	1	5/4/2023 5:30:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	190	60		mg/Kg	20	5/4/2023 1:50:51 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-03 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:10:00 AM

**Lab ID:** 2305051-003

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/3/2023 7:21:48 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/3/2023 7:21:48 PM
Surr: DNOP	80.5	69-147		%Rec	1	5/3/2023 7:21:48 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 5:54:03 PM
Surr: BFB	71.5	15-244		%Rec	1	5/4/2023 5:54:03 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 5:54:03 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 5:54:03 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 5:54:03 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 5:54:03 PM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	5/4/2023 5:54:03 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	60		mg/Kg	20	5/4/2023 2:03:12 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-04 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:15:00 AM

**Lab ID:** 2305051-004

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/3/2023 7:46:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 7:46:10 PM
Surr: DNOP	83.4	69-147		%Rec	1	5/3/2023 7:46:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 6:17:33 PM
Surr: BFB	68.7	15-244		%Rec	1	5/4/2023 6:17:33 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 6:17:33 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 6:17:33 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 6:17:33 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 6:17:33 PM
Surr: 4-Bromofluorobenzene	87.6	39.1-146		%Rec	1	5/4/2023 6:17:33 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	180	60		mg/Kg	20	5/4/2023 2:15:33 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-05 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:20:00 AM

**Lab ID:** 2305051-005

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/3/2023 8:10:34 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 8:10:34 PM
Surr: DNOP	73.3	69-147		%Rec	1	5/3/2023 8:10:34 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/4/2023 6:41:00 PM
Surr: BFB	75.9	15-244		%Rec	1	5/4/2023 6:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 6:41:00 PM
Toluene	ND	0.047		mg/Kg	1	5/4/2023 6:41:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/4/2023 6:41:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/4/2023 6:41:00 PM
Surr: 4-Bromofluorobenzene	89.2	39.1-146		%Rec	1	5/4/2023 6:41:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	190	60		mg/Kg	20	5/4/2023 2:27:54 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-06 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:25:00 AM

**Lab ID:** 2305051-006

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/3/2023 8:59:17 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 8:59:17 PM
Surr: DNOP	75.6	69-147		%Rec	1	5/3/2023 8:59:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 7:04:23 PM
Surr: BFB	70.0	15-244		%Rec	1	5/4/2023 7:04:23 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 7:04:23 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 7:04:23 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 7:04:23 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/4/2023 7:04:23 PM
Surr: 4-Bromofluorobenzene	87.4	39.1-146		%Rec	1	5/4/2023 7:04:23 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	180	60		mg/Kg	20	5/4/2023 3:04:57 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-07 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:30:00 AM

**Lab ID:** 2305051-007

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	37	9.9		mg/Kg	1	5/3/2023 9:23:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 9:23:38 PM
Surr: DNOP	77.0	69-147		%Rec	1	5/3/2023 9:23:38 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 7:27:43 PM
Surr: BFB	64.3	15-244		%Rec	1	5/4/2023 7:27:43 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 7:27:43 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 7:27:43 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 7:27:43 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/4/2023 7:27:43 PM
Surr: 4-Bromofluorobenzene	87.1	39.1-146		%Rec	1	5/4/2023 7:27:43 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	60		mg/Kg	20	5/4/2023 3:17:17 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-08 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:35:00 AM

**Lab ID:** 2305051-008

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/3/2023 9:47:59 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 9:47:59 PM
Surr: DNOP	74.2	69-147		%Rec	1	5/3/2023 9:47:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 7:51:04 PM
Surr: BFB	69.2	15-244		%Rec	1	5/4/2023 7:51:04 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 7:51:04 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 7:51:04 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 7:51:04 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/4/2023 7:51:04 PM
Surr: 4-Bromofluorobenzene	88.1	39.1-146		%Rec	1	5/4/2023 7:51:04 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	160	61		mg/Kg	20	5/4/2023 3:29:39 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-09 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:40:00 AM

**Lab ID:** 2305051-009

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	20	9.1		mg/Kg	1	5/3/2023 10:12:25 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/3/2023 10:12:25 PM
Surr: DNOP	71.5	69-147		%Rec	1	5/3/2023 10:12:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 8:14:24 PM
Surr: BFB	60.9	15-244		%Rec	1	5/4/2023 8:14:24 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 8:14:24 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 8:14:24 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 8:14:24 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 8:14:24 PM
Surr: 4-Bromofluorobenzene	86.4	39.1-146		%Rec	1	5/4/2023 8:14:24 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 3:41:59 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-10 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:45:00 AM

**Lab ID:** 2305051-010

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	11	9.7		mg/Kg	1	5/3/2023 10:36:57 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 10:36:57 PM
Surr: DNOP	74.2	69-147		%Rec	1	5/3/2023 10:36:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 8:37:51 PM
Surr: BFB	62.6	15-244		%Rec	1	5/4/2023 8:37:51 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 8:37:51 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 8:37:51 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 8:37:51 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 8:37:51 PM
Surr: 4-Bromofluorobenzene	86.8	39.1-146		%Rec	1	5/4/2023 8:37:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 3:54:20 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-11 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:50:00 AM

**Lab ID:** 2305051-011

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/3/2023 11:01:29 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/3/2023 11:01:29 PM
Surr: DNOP	73.9	69-147		%Rec	1	5/3/2023 11:01:29 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 9:01:10 PM
Surr: BFB	67.7	15-244		%Rec	1	5/4/2023 9:01:10 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 9:01:10 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 9:01:10 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 9:01:10 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 9:01:10 PM
Surr: 4-Bromofluorobenzene	87.2	39.1-146		%Rec	1	5/4/2023 9:01:10 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	130	60		mg/Kg	20	5/4/2023 4:06:41 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-12 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 8:55:00 AM

**Lab ID:** 2305051-012

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/3/2023 11:26:00 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 11:26:00 PM
Surr: DNOP	73.2	69-147		%Rec	1	5/3/2023 11:26:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 9:48:02 PM
Surr: BFB	63.2	15-244		%Rec	1	5/4/2023 9:48:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 9:48:02 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 9:48:02 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 9:48:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 9:48:02 PM
Surr: 4-Bromofluorobenzene	87.1	39.1-146		%Rec	1	5/4/2023 9:48:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	59		mg/Kg	20	5/4/2023 4:19:02 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-13 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:00:00 AM

**Lab ID:** 2305051-013

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	48	9.5		mg/Kg	1	5/3/2023 11:50:39 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/3/2023 11:50:39 PM
Surr: DNOP	79.0	69-147		%Rec	1	5/3/2023 11:50:39 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 10:11:31 PM
Surr: BFB	53.9	15-244		%Rec	1	5/4/2023 10:11:31 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 10:11:31 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 10:11:31 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 10:11:31 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 10:11:31 PM
Surr: 4-Bromofluorobenzene	85.3	39.1-146		%Rec	1	5/4/2023 10:11:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	59		mg/Kg	20	5/4/2023 4:31:23 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-14 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:05:00 AM

**Lab ID:** 2305051-014

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	10	9.4		mg/Kg	1	5/4/2023 1:17:26 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/4/2023 1:17:26 PM
Surr: DNOP	72.7	69-147		%Rec	1	5/4/2023 1:17:26 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/9/2023 2:02:57 AM
Surr: BFB	68.0	15-244		%Rec	1	5/9/2023 2:02:57 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/9/2023 2:02:57 AM
Toluene	ND	0.049		mg/Kg	1	5/9/2023 2:02:57 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/9/2023 2:02:57 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/9/2023 2:02:57 AM
Surr: 4-Bromofluorobenzene	86.6	39.1-146		%Rec	1	5/9/2023 2:02:57 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	130	60		mg/Kg	20	5/4/2023 4:43:44 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-15 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:10:00 AM

**Lab ID:** 2305051-015

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/4/2023 1:28:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/4/2023 1:28:10 PM
Surr: DNOP	53.0	69-147	S	%Rec	1	5/4/2023 1:28:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/9/2023 2:26:12 AM
Surr: BFB	77.3	15-244		%Rec	1	5/9/2023 2:26:12 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/9/2023 2:26:12 AM
Toluene	ND	0.048		mg/Kg	1	5/9/2023 2:26:12 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/9/2023 2:26:12 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/9/2023 2:26:12 AM
Surr: 4-Bromofluorobenzene	88.6	39.1-146		%Rec	1	5/9/2023 2:26:12 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 4:56:04 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-16 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:15:00 AM

**Lab ID:** 2305051-016

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/5/2023 12:42:14 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 12:42:14 PM
Surr: DNOP	77.0	69-147		%Rec	1	5/5/2023 12:42:14 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/9/2023 2:49:39 AM
Surr: BFB	77.7	15-244		%Rec	1	5/9/2023 2:49:39 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/9/2023 2:49:39 AM
Toluene	ND	0.049		mg/Kg	1	5/9/2023 2:49:39 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/9/2023 2:49:39 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/9/2023 2:49:39 AM
Surr: 4-Bromofluorobenzene	88.0	39.1-146		%Rec	1	5/9/2023 2:49:39 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	59		mg/Kg	20	5/4/2023 5:33:07 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-17 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:20:00 AM

**Lab ID:** 2305051-017

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/5/2023 1:06:01 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 1:06:01 PM
Surr: DNOP	73.4	69-147		%Rec	1	5/5/2023 1:06:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/9/2023 3:13:10 AM
Surr: BFB	69.1	15-244		%Rec	1	5/9/2023 3:13:10 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/9/2023 3:13:10 AM
Toluene	ND	0.050		mg/Kg	1	5/9/2023 3:13:10 AM
Ethylbenzene	ND	0.050		mg/Kg	1	5/9/2023 3:13:10 AM
Xylenes, Total	ND	0.10		mg/Kg	1	5/9/2023 3:13:10 AM
Surr: 4-Bromofluorobenzene	86.5	39.1-146		%Rec	1	5/9/2023 3:13:10 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	130	60		mg/Kg	20	5/4/2023 5:45:27 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-18 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:25:00 AM

**Lab ID:** 2305051-018

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/4/2023 6:16:00 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/4/2023 6:16:00 PM
Surr: DNOP	63.9	69-147	S	%Rec	1	5/4/2023 6:16:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/9/2023 3:36:41 AM
Surr: BFB	52.2	15-244		%Rec	1	5/9/2023 3:36:41 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/9/2023 3:36:41 AM
Toluene	ND	0.049		mg/Kg	1	5/9/2023 3:36:41 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/9/2023 3:36:41 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/9/2023 3:36:41 AM
Surr: 4-Bromofluorobenzene	81.8	39.1-146		%Rec	1	5/9/2023 3:36:41 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	180	60		mg/Kg	20	5/4/2023 5:57:48 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-19 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:30:00 AM

**Lab ID:** 2305051-019

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	12	9.7		mg/Kg	1	5/5/2023 2:17:32 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 2:17:32 PM
Surr: DNOP	86.7	69-147		%Rec	1	5/5/2023 2:17:32 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/9/2023 4:00:12 AM
Surr: BFB	65.4	15-244		%Rec	1	5/9/2023 4:00:12 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/9/2023 4:00:12 AM
Toluene	ND	0.048		mg/Kg	1	5/9/2023 4:00:12 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/9/2023 4:00:12 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/9/2023 4:00:12 AM
Surr: 4-Bromofluorobenzene	85.1	39.1-146		%Rec	1	5/9/2023 4:00:12 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	60		mg/Kg	20	5/4/2023 6:10:09 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-20 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:35:00 AM

**Lab ID:** 2305051-020

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/4/2023 7:03:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/4/2023 7:03:44 PM
Surr: DNOP	77.3	69-147		%Rec	1	5/4/2023 7:03:44 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/9/2023 4:47:18 AM
Surr: BFB	63.6	15-244		%Rec	1	5/9/2023 4:47:18 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	5/9/2023 4:47:18 AM
Toluene	ND	0.047		mg/Kg	1	5/9/2023 4:47:18 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/9/2023 4:47:18 AM
Xylenes, Total	ND	0.094		mg/Kg	1	5/9/2023 4:47:18 AM
Surr: 4-Bromofluorobenzene	84.9	39.1-146		%Rec	1	5/9/2023 4:47:18 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	180	60		mg/Kg	20	5/4/2023 6:47:12 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-21 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:40:00 AM

**Lab ID:** 2305051-021

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/5/2023 2:41:21 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/5/2023 2:41:21 PM
Surr: DNOP	71.6	69-147		%Rec	1	5/5/2023 2:41:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/9/2023 5:10:48 AM
Surr: BFB	67.5	15-244		%Rec	1	5/9/2023 5:10:48 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.025		mg/Kg	1	5/9/2023 5:10:48 AM
Toluene	ND	0.049		mg/Kg	1	5/9/2023 5:10:48 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/9/2023 5:10:48 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/9/2023 5:10:48 AM
Surr: 4-Bromofluorobenzene	85.8	39.1-146		%Rec	1	5/9/2023 5:10:48 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	160	60		mg/Kg	20	5/4/2023 7:24:14 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-22 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:45:00 AM

**Lab ID:** 2305051-022

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/4/2023 7:51:19 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/4/2023 7:51:19 PM
Surr: DNOP	65.4	69-147	S	%Rec	1	5/4/2023 7:51:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/9/2023 5:34:18 AM
Surr: BFB	66.5	15-244		%Rec	1	5/9/2023 5:34:18 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/9/2023 5:34:18 AM
Toluene	ND	0.047		mg/Kg	1	5/9/2023 5:34:18 AM
Ethylbenzene	ND	0.047		mg/Kg	1	5/9/2023 5:34:18 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/9/2023 5:34:18 AM
Surr: 4-Bromofluorobenzene	85.3	39.1-146		%Rec	1	5/9/2023 5:34:18 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 8:01:17 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-23 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:50:00 AM

**Lab ID:** 2305051-023

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/4/2023 8:15:06 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/4/2023 8:15:06 PM
Surr: DNOP	83.2	69-147		%Rec	1	5/4/2023 8:15:06 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/9/2023 5:57:49 AM
Surr: BFB	73.1	15-244		%Rec	1	5/9/2023 5:57:49 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/9/2023 5:57:49 AM
Toluene	ND	0.048		mg/Kg	1	5/9/2023 5:57:49 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/9/2023 5:57:49 AM
Xylenes, Total	ND	0.095		mg/Kg	1	5/9/2023 5:57:49 AM
Surr: 4-Bromofluorobenzene	85.3	39.1-146		%Rec	1	5/9/2023 5:57:49 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	210	60		mg/Kg	20	5/4/2023 8:13:38 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-24 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 9:55:00 AM

**Lab ID:** 2305051-024

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/5/2023 3:29:09 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 3:29:09 PM
Surr: DNOP	72.1	69-147		%Rec	1	5/5/2023 3:29:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 12:13:00 PM
Surr: BFB	90.6	15-244		%Rec	1	5/4/2023 12:13:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 12:13:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 12:13:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 12:13:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 12:13:00 PM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	5/4/2023 12:13:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	60		mg/Kg	20	5/4/2023 8:25:59 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-25 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:00:00 AM

**Lab ID:** 2305051-025

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	51	9.3		mg/Kg	1	5/4/2023 9:26:27 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/4/2023 9:26:27 PM
Surr: DNOP	69.9	69-147		%Rec	1	5/4/2023 9:26:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 1:18:00 PM
Surr: BFB	87.5	15-244		%Rec	1	5/4/2023 1:18:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 1:18:00 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 1:18:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 1:18:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 1:18:00 PM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	5/4/2023 1:18:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	60		mg/Kg	20	5/4/2023 8:38:20 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-26 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:05:00 AM

**Lab ID:** 2305051-026

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	41	9.9		mg/Kg	1	5/4/2023 9:50:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/4/2023 9:50:12 PM
Surr: DNOP	69.7	69-147		%Rec	1	5/4/2023 9:50:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 2:23:00 PM
Surr: BFB	85.1	15-244		%Rec	1	5/4/2023 2:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 2:23:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 2:23:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 2:23:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 2:23:00 PM
Surr: 4-Bromofluorobenzene	84.5	39.1-146		%Rec	1	5/4/2023 2:23:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	130	61		mg/Kg	20	5/4/2023 8:50:41 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-27 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:10:00 AM

**Lab ID:** 2305051-027

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/4/2023 10:13:55 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/4/2023 10:13:55 PM
Surr: DNOP	70.0	69-147		%Rec	1	5/4/2023 10:13:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/4/2023 2:44:00 PM
Surr: BFB	84.5	15-244		%Rec	1	5/4/2023 2:44:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	5/4/2023 2:44:00 PM
Toluene	ND	0.047		mg/Kg	1	5/4/2023 2:44:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/4/2023 2:44:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/4/2023 2:44:00 PM
Surr: 4-Bromofluorobenzene	84.2	39.1-146		%Rec	1	5/4/2023 2:44:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 9:03:03 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-28 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:15:00 AM

**Lab ID:** 2305051-028

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/5/2023 3:53:01 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 3:53:01 PM
Surr: DNOP	73.2	69-147		%Rec	1	5/5/2023 3:53:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 3:06:00 PM
Surr: BFB	87.2	15-244		%Rec	1	5/4/2023 3:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 3:06:00 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 3:06:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 3:06:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	5/4/2023 3:06:00 PM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/4/2023 3:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	84	60		mg/Kg	20	5/4/2023 9:15:23 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-29 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:20:00 AM

**Lab ID:** 2305051-029

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	38	9.7		mg/Kg	1	5/4/2023 11:01:28 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/4/2023 11:01:28 PM
Surr: DNOP	70.6	69-147		%Rec	1	5/4/2023 11:01:28 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 3:27:00 PM
Surr: BFB	85.9	15-244		%Rec	1	5/4/2023 3:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 3:27:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 3:27:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 3:27:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 3:27:00 PM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/4/2023 3:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	60		mg/Kg	20	5/4/2023 9:27:43 PM

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

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

Analytical Report

Lab Order 2305051

Date Reported: 5/23/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-30 4'

Project: Emperor Oil Co Fed Gas B Com 001

Collection Date: 4/27/2023 10:25:00 AM

Lab ID: 2305051-030

Matrix: SOIL

Received Date: 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/5/2023 4:16:51 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 4:16:51 PM
Surr: DNOP	74.4	69-147		%Rec	1	5/5/2023 4:16:51 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/4/2023 3:49:00 PM
Surr: BFB	91.7	15-244		%Rec	1	5/4/2023 3:49:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	5/4/2023 3:49:00 PM
Toluene	ND	0.047		mg/Kg	1	5/4/2023 3:49:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/4/2023 3:49:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/4/2023 3:49:00 PM
Surr: 4-Bromofluorobenzene	84.6	39.1-146		%Rec	1	5/4/2023 3:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 10:29:26 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: 5/23/2023

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-31 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:30:00 AM

**Lab ID:** 2305051-031

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	9.8	9.1		mg/Kg	1	5/5/2023 4:40:45 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/5/2023 4:40:45 PM
Surr: DNOP	73.2	69-147		%Rec	1	5/5/2023 4:40:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/4/2023 4:11:00 PM
Surr: BFB	85.0	15-244		%Rec	1	5/4/2023 4:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	5/4/2023 4:11:00 PM
Toluene	ND	0.047		mg/Kg	1	5/4/2023 4:11:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/4/2023 4:11:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/4/2023 4:11:00 PM
Surr: 4-Bromofluorobenzene	85.8	39.1-146		%Rec	1	5/4/2023 4:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	180	60		mg/Kg	20	5/4/2023 10:41:47 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-32 4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/27/2023 10:35:00 AM

**Lab ID:** 2305051-032

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	11	9.4		mg/Kg	1	5/5/2023 5:04:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/5/2023 5:04:35 PM
Surr: DNOP	73.9	69-147		%Rec	1	5/5/2023 5:04:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 4:32:00 PM
Surr: BFB	82.5	15-244		%Rec	1	5/4/2023 4:32:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 4:32:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 4:32:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 4:32:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 4:32:00 PM
Surr: 4-Bromofluorobenzene	85.0	39.1-146		%Rec	1	5/4/2023 4:32:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	ND	60		mg/Kg	20	5/4/2023 10:54:07 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-33 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:00:00 AM

**Lab ID:** 2305051-033

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/5/2023 5:28:33 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/5/2023 5:28:33 PM
Surr: DNOP	75.6	69-147		%Rec	1	5/5/2023 5:28:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 4:54:00 PM
Surr: BFB	89.3	15-244		%Rec	1	5/4/2023 4:54:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 4:54:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 4:54:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 4:54:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/4/2023 4:54:00 PM
Surr: 4-Bromofluorobenzene	86.1	39.1-146		%Rec	1	5/4/2023 4:54:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	60		mg/Kg	20	5/4/2023 11:06:27 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-34 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:05:00 AM

**Lab ID:** 2305051-034

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/10/2023 5:47:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/10/2023 5:47:07 PM
Surr: DNOP	69.6	69-147		%Rec	1	5/10/2023 5:47:07 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 5:37:00 PM
Surr: BFB	83.0	15-244		%Rec	1	5/4/2023 5:37:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 5:37:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 5:37:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 5:37:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 5:37:00 PM
Surr: 4-Bromofluorobenzene	84.6	39.1-146		%Rec	1	5/4/2023 5:37:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	120	60		mg/Kg	20	5/4/2023 11:18:48 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-35 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:10:00 AM

**Lab ID:** 2305051-035

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	24	9.7		mg/Kg	1	5/5/2023 1:47:42 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 1:47:42 AM
Surr: DNOP	72.1	69-147		%Rec	1	5/5/2023 1:47:42 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 5:59:00 PM
Surr: BFB	83.5	15-244		%Rec	1	5/4/2023 5:59:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 5:59:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 5:59:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 5:59:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 5:59:00 PM
Surr: 4-Bromofluorobenzene	84.3	39.1-146		%Rec	1	5/4/2023 5:59:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	140	60		mg/Kg	20	5/4/2023 11:31:09 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-36 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:15:00 AM

**Lab ID:** 2305051-036

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/5/2023 2:11:26 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/5/2023 2:11:26 AM
Surr: DNOP	72.4	69-147		%Rec	1	5/5/2023 2:11:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 6:20:00 PM
Surr: BFB	85.3	15-244		%Rec	1	5/4/2023 6:20:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 6:20:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 6:20:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 6:20:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 6:20:00 PM
Surr: 4-Bromofluorobenzene	83.1	39.1-146		%Rec	1	5/4/2023 6:20:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	72	60		mg/Kg	20	5/4/2023 11:43:30 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-37 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:20:00 AM

**Lab ID:** 2305051-037

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/5/2023 2:35:07 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/5/2023 2:35:07 AM
Surr: DNOP	71.1	69-147		%Rec	1	5/5/2023 2:35:07 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 6:42:00 PM
Surr: BFB	86.9	15-244		%Rec	1	5/4/2023 6:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 6:42:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 6:42:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 6:42:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 6:42:00 PM
Surr: 4-Bromofluorobenzene	84.7	39.1-146		%Rec	1	5/4/2023 6:42:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	69	60		mg/Kg	20	5/4/2023 11:55:50 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-38 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:25:00 AM

**Lab ID:** 2305051-038

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	18	9.6		mg/Kg	1	5/5/2023 2:58:48 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/5/2023 2:58:48 AM
Surr: DNOP	74.9	69-147		%Rec	1	5/5/2023 2:58:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 7:04:00 PM
Surr: BFB	81.9	15-244		%Rec	1	5/4/2023 7:04:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 7:04:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 7:04:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 7:04:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 7:04:00 PM
Surr: 4-Bromofluorobenzene	84.5	39.1-146		%Rec	1	5/4/2023 7:04:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	90	60		mg/Kg	20	5/5/2023 12:08:10 AM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-39 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:30:00 AM

**Lab ID:** 2305051-039

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	13	8.8		mg/Kg	1	5/5/2023 5:52:25 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/5/2023 5:52:25 PM
Surr: DNOP	72.4	69-147		%Rec	1	5/5/2023 5:52:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 7:25:00 PM
Surr: BFB	82.7	15-244		%Rec	1	5/4/2023 7:25:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 7:25:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 7:25:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 7:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 7:25:00 PM
Surr: 4-Bromofluorobenzene	84.0	39.1-146		%Rec	1	5/4/2023 7:25:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>SNS</b>
Chloride	150	60		mg/Kg	20	5/5/2023 12:20:30 AM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-40 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:35:00 AM

**Lab ID:** 2305051-040

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/5/2023 6:16:20 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/5/2023 6:16:20 PM
Surr: DNOP	72.7	69-147		%Rec	1	5/5/2023 6:16:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 7:47:00 PM
Surr: BFB	81.9	15-244		%Rec	1	5/4/2023 7:47:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 7:47:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 7:47:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 7:47:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/4/2023 7:47:00 PM
Surr: 4-Bromofluorobenzene	83.8	39.1-146		%Rec	1	5/4/2023 7:47:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	110	60		mg/Kg	20	5/5/2023 10:10:11 AM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-41 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:40:00 AM

**Lab ID:** 2305051-041

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/5/2023 7:04:05 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/5/2023 7:04:05 PM
Surr: DNOP	71.2	69-147		%Rec	1	5/5/2023 7:04:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/4/2023 8:08:00 PM
Surr: BFB	81.7	15-244		%Rec	1	5/4/2023 8:08:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 8:08:00 PM
Toluene	ND	0.049		mg/Kg	1	5/4/2023 8:08:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/4/2023 8:08:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/4/2023 8:08:00 PM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/4/2023 8:08:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	70	60		mg/Kg	20	5/5/2023 10:47:13 AM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-42 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:45:00 AM

**Lab ID:** 2305051-042

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	15	9.0		mg/Kg	1	5/5/2023 7:27:58 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/5/2023 7:27:58 PM
Surr: DNOP	71.1	69-147		%Rec	1	5/5/2023 7:27:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/4/2023 8:30:00 PM
Surr: BFB	84.7	15-244		%Rec	1	5/4/2023 8:30:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/4/2023 8:30:00 PM
Toluene	ND	0.048		mg/Kg	1	5/4/2023 8:30:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/4/2023 8:30:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/4/2023 8:30:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/4/2023 8:30:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	71	60		mg/Kg	20	5/5/2023 10:59:34 AM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-43 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 9:50:00 AM

**Lab ID:** 2305051-043

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/5/2023 7:51:49 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/5/2023 7:51:49 PM
Surr: DNOP	70.8	69-147		%Rec	1	5/5/2023 7:51:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/4/2023 8:52:00 PM
Surr: BFB	85.8	15-244		%Rec	1	5/4/2023 8:52:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/4/2023 8:52:00 PM
Toluene	ND	0.050		mg/Kg	1	5/4/2023 8:52:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/4/2023 8:52:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/4/2023 8:52:00 PM
Surr: 4-Bromofluorobenzene	85.9	39.1-146		%Rec	1	5/4/2023 8:52:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	84	60		mg/Kg	20	5/5/2023 11:11:54 AM

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

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

Analytical Report

Lab Order 2305051

Date Reported: 5/23/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS23-44 2'

Project: Emperor Oil Co Fed Gas B Com 001

Collection Date: 4/28/2023 9:55:00 AM

Lab ID: 2305051-044

Matrix: SOIL

Received Date: 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/5/2023 8:15:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/5/2023 8:15:37 PM
Surr: DNOP	58.2	69-147	S	%Rec	1	5/5/2023 8:15:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2023 1:51:00 PM
Surr: BFB	85.5	15-244		%Rec	1	5/5/2023 1:51:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 1:51:00 PM
Toluene	ND	0.050		mg/Kg	1	5/5/2023 1:51:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2023 1:51:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2023 1:51:00 PM
Surr: 4-Bromofluorobenzene	84.4	39.1-146		%Rec	1	5/5/2023 1:51:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	93	60		mg/Kg	20	5/5/2023 11:24:15 AM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-45 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:00:00 AM

**Lab ID:** 2305051-045

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/5/2023 8:39:24 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/5/2023 8:39:24 PM
Surr: DNOP	54.0	69-147	S	%Rec	1	5/5/2023 8:39:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 2:55:00 PM
Surr: BFB	87.1	15-244		%Rec	1	5/5/2023 2:55:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 2:55:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 2:55:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 2:55:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2023 2:55:00 PM
Surr: 4-Bromofluorobenzene	84.6	39.1-146		%Rec	1	5/5/2023 2:55:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	5/5/2023 11:36:35 AM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: 5/23/2023

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-46 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:05:00 AM

**Lab ID:** 2305051-046

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/9/2023 4:17:04 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/9/2023 4:17:04 PM
Surr: DNOP	76.7	69-147		%Rec	1	5/9/2023 4:17:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2023 4:00:00 PM
Surr: BFB	82.1	15-244		%Rec	1	5/5/2023 4:00:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 4:00:00 PM
Toluene	ND	0.050		mg/Kg	1	5/5/2023 4:00:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2023 4:00:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2023 4:00:00 PM
Surr: 4-Bromofluorobenzene	82.4	39.1-146		%Rec	1	5/5/2023 4:00:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	66	60		mg/Kg	20	5/5/2023 12:13:39 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-47 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:10:00 AM

**Lab ID:** 2305051-047

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/5/2023 9:26:53 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/5/2023 9:26:53 PM
Surr: DNOP	45.7	69-147	S	%Rec	1	5/5/2023 9:26:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 4:22:00 PM
Surr: BFB	82.4	15-244		%Rec	1	5/5/2023 4:22:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.023		mg/Kg	1	5/5/2023 4:22:00 PM
Toluene	ND	0.047		mg/Kg	1	5/5/2023 4:22:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 4:22:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/5/2023 4:22:00 PM
Surr: 4-Bromofluorobenzene	81.9	39.1-146		%Rec	1	5/5/2023 4:22:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	100	60		mg/Kg	20	5/5/2023 12:25:59 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-48 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:15:00 AM

**Lab ID:** 2305051-048

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/10/2023 6:10:48 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/10/2023 6:10:48 PM
Surr: DNOP	70.0	69-147		%Rec	1	5/10/2023 6:10:48 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 4:43:00 PM
Surr: BFB	83.2	15-244		%Rec	1	5/5/2023 4:43:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 4:43:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 4:43:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 4:43:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 4:43:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/5/2023 4:43:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	5/5/2023 12:38:20 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: 5/23/2023

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-49 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:20:00 AM

**Lab ID:** 2305051-049

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/8/2023 4:22:52 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/8/2023 4:22:52 PM
Surr: DNOP	71.2	69-147		%Rec	1	5/8/2023 4:22:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 5:05:00 PM
Surr: BFB	79.6	15-244		%Rec	1	5/5/2023 5:05:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 5:05:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 5:05:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 5:05:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 5:05:00 PM
Surr: 4-Bromofluorobenzene	80.9	39.1-146		%Rec	1	5/5/2023 5:05:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	82	60		mg/Kg	20	5/5/2023 12:50:41 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-50 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:25:00 AM

**Lab ID:** 2305051-050

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/5/2023 10:38:04 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/5/2023 10:38:04 PM
Surr: DNOP	56.9	69-147	S	%Rec	1	5/5/2023 10:38:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 5:26:00 PM
Surr: BFB	78.6	15-244		%Rec	1	5/5/2023 5:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 5:26:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 5:26:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 5:26:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2023 5:26:00 PM
Surr: 4-Bromofluorobenzene	81.7	39.1-146		%Rec	1	5/5/2023 5:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	85	60		mg/Kg	20	5/5/2023 1:03:02 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-51 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:30:00 AM

**Lab ID:** 2305051-051

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	5/10/2023 6:58:13 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/10/2023 6:58:13 PM
Surr: DNOP	74.6	69-147		%Rec	1	5/10/2023 6:58:13 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 5:48:00 PM
Surr: BFB	83.7	15-244		%Rec	1	5/5/2023 5:48:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 5:48:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 5:48:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 5:48:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 5:48:00 PM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/5/2023 5:48:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	77	60		mg/Kg	20	5/5/2023 1:40:03 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-52 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:35:00 AM

**Lab ID:** 2305051-052

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/10/2023 7:21:55 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/10/2023 7:21:55 PM
Surr: DNOP	82.9	69-147		%Rec	1	5/10/2023 7:21:55 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/5/2023 6:10:00 PM
Surr: BFB	83.2	15-244		%Rec	1	5/5/2023 6:10:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 6:10:00 PM
Toluene	ND	0.050		mg/Kg	1	5/5/2023 6:10:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/5/2023 6:10:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2023 6:10:00 PM
Surr: 4-Bromofluorobenzene	84.2	39.1-146		%Rec	1	5/5/2023 6:10:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	100	60		mg/Kg	20	5/5/2023 1:52:24 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-53 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:40:00 AM

**Lab ID:** 2305051-053

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/6/2023 12:13:01 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/6/2023 12:13:01 AM
Surr: DNOP	58.7	69-147	S	%Rec	1	5/6/2023 12:13:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 6:31:00 PM
Surr: BFB	82.2	15-244		%Rec	1	5/5/2023 6:31:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 6:31:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 6:31:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 6:31:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2023 6:31:00 PM
Surr: 4-Bromofluorobenzene	83.3	39.1-146		%Rec	1	5/5/2023 6:31:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	63	60		mg/Kg	20	5/5/2023 2:04:45 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** BS23-54 2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 10:45:00 AM

**Lab ID:** 2305051-054

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/6/2023 12:36:49 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/6/2023 12:36:49 AM
Surr: DNOP	53.7	69-147	S	%Rec	1	5/6/2023 12:36:49 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 7:14:00 PM
Surr: BFB	82.4	15-244		%Rec	1	5/5/2023 7:14:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 7:14:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 7:14:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 7:14:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/5/2023 7:14:00 PM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/5/2023 7:14:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	95	60		mg/Kg	20	5/5/2023 2:41:46 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-01 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:00:00 PM

**Lab ID:** 2305051-055

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	13	9.5		mg/Kg	1	5/6/2023 1:00:38 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 1:00:38 AM
Surr: DNOP	49.8	69-147	S	%Rec	1	5/6/2023 1:00:38 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 7:36:00 PM
Surr: BFB	80.5	15-244		%Rec	1	5/5/2023 7:36:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 7:36:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 7:36:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 7:36:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/5/2023 7:36:00 PM
Surr: 4-Bromofluorobenzene	80.8	39.1-146		%Rec	1	5/5/2023 7:36:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	100	61		mg/Kg	20	5/5/2023 2:54:07 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-02 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:05:00 PM

**Lab ID:** 2305051-056

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/10/2023 9:20:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/10/2023 9:20:10 PM
Surr: DNOP	69.2	69-147		%Rec	1	5/10/2023 9:20:10 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 7:57:00 PM
Surr: BFB	81.7	15-244		%Rec	1	5/5/2023 7:57:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 7:57:00 PM
Toluene	ND	0.047		mg/Kg	1	5/5/2023 7:57:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 7:57:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/5/2023 7:57:00 PM
Surr: 4-Bromofluorobenzene	83.2	39.1-146		%Rec	1	5/5/2023 7:57:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	120	60		mg/Kg	20	5/5/2023 3:06:28 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-03 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:10:00 PM

**Lab ID:** 2305051-057

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	12	9.4		mg/Kg	1	5/6/2023 1:48:01 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 1:48:01 AM
Surr: DNOP	61.7	69-147	S	%Rec	1	5/6/2023 1:48:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 8:19:00 PM
Surr: BFB	84.1	15-244		%Rec	1	5/5/2023 8:19:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 8:19:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 8:19:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 8:19:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 8:19:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146		%Rec	1	5/5/2023 8:19:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	120	60		mg/Kg	20	5/5/2023 3:18:49 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-04 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:15:00 PM

**Lab ID:** 2305051-058

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	11	9.4		mg/Kg	1	5/6/2023 2:11:43 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 2:11:43 AM
Surr: DNOP	57.0	69-147	S	%Rec	1	5/6/2023 2:11:43 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 8:40:00 PM
Surr: BFB	82.0	15-244		%Rec	1	5/5/2023 8:40:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 8:40:00 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 8:40:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 8:40:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/5/2023 8:40:00 PM
Surr: 4-Bromofluorobenzene	81.9	39.1-146		%Rec	1	5/5/2023 8:40:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	95	60		mg/Kg	20	5/5/2023 3:31:09 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-05 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:20:00 PM

**Lab ID:** 2305051-059

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	9.7	9.7		mg/Kg	1	5/10/2023 10:30:52 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/10/2023 10:30:52 PM
Surr: DNOP	80.0	69-147		%Rec	1	5/10/2023 10:30:52 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 9:02:00 PM
Surr: BFB	83.3	15-244		%Rec	1	5/5/2023 9:02:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.025		mg/Kg	1	5/5/2023 9:02:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 9:02:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 9:02:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/5/2023 9:02:00 PM
Surr: 4-Bromofluorobenzene	82.5	39.1-146		%Rec	1	5/5/2023 9:02:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	100	60		mg/Kg	20	5/5/2023 3:43:29 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-06 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:25:00 PM

**Lab ID:** 2305051-060

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/8/2023 9:09:17 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/8/2023 9:09:17 PM
Surr: DNOP	69.9	69-147		%Rec	1	5/8/2023 9:09:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/5/2023 9:24:00 PM
Surr: BFB	84.2	15-244		%Rec	1	5/5/2023 9:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>KMN</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 9:24:00 PM
Toluene	ND	0.049		mg/Kg	1	5/5/2023 9:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/5/2023 9:24:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/5/2023 9:24:00 PM
Surr: 4-Bromofluorobenzene	85.6	39.1-146		%Rec	1	5/5/2023 9:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	67	59		mg/Kg	20	5/5/2023 8:52:09 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-07 0-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:30:00 PM

**Lab ID:** 2305051-061

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	13	9.9		mg/Kg	1	5/10/2023 10:54:29 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/10/2023 10:54:29 PM
Surr: DNOP	71.6	69-147		%Rec	1	5/10/2023 10:54:29 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 4:25:20 PM
Surr: BFB	72.8	15-244		%Rec	1	5/5/2023 4:25:20 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 4:25:20 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 4:25:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 4:25:20 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 4:25:20 PM
Surr: 4-Bromofluorobenzene	88.0	39.1-146		%Rec	1	5/5/2023 4:25:20 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	95	61		mg/Kg	20	5/5/2023 9:04:29 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-08 2-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:35:00 PM

**Lab ID:** 2305051-062

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	11	9.0		mg/Kg	1	5/6/2023 4:10:12 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/6/2023 4:10:12 AM
Surr: DNOP	72.1	69-147		%Rec	1	5/6/2023 4:10:12 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 5:35:39 PM
Surr: BFB	75.5	15-244		%Rec	1	5/5/2023 5:35:39 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 5:35:39 PM
Toluene	ND	0.047		mg/Kg	1	5/5/2023 5:35:39 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 5:35:39 PM
Xylenes, Total	ND	0.094		mg/Kg	1	5/5/2023 5:35:39 PM
Surr: 4-Bromofluorobenzene	90.1	39.1-146		%Rec	1	5/5/2023 5:35:39 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	77	60		mg/Kg	20	5/5/2023 9:16:50 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-09 2-4'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:40:00 PM

**Lab ID:** 2305051-063

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	18	9.4		mg/Kg	1	5/6/2023 4:33:53 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 4:33:53 AM
Surr: DNOP	69.2	69-147		%Rec	1	5/6/2023 4:33:53 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 6:46:02 PM
Surr: BFB	77.1	15-244		%Rec	1	5/5/2023 6:46:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 6:46:02 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 6:46:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 6:46:02 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/5/2023 6:46:02 PM
Surr: 4-Bromofluorobenzene	89.5	39.1-146		%Rec	1	5/5/2023 6:46:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	83	60		mg/Kg	20	5/5/2023 9:29:10 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-10 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:45:00 PM

**Lab ID:** 2305051-064

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	13	9.2		mg/Kg	1	5/6/2023 4:57:34 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/6/2023 4:57:34 AM
Surr: DNOP	72.6	69-147		%Rec	1	5/6/2023 4:57:34 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 7:09:25 PM
Surr: BFB	84.3	15-244		%Rec	1	5/5/2023 7:09:25 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 7:09:25 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 7:09:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 7:09:25 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/5/2023 7:09:25 PM
Surr: 4-Bromofluorobenzene	89.5	39.1-146		%Rec	1	5/5/2023 7:09:25 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	94	60		mg/Kg	20	5/5/2023 10:06:12 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-11 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:50:00 PM

**Lab ID:** 2305051-065

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	13	10		mg/Kg	1	5/6/2023 5:21:15 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/6/2023 5:21:15 AM
Surr: DNOP	71.5	69-147		%Rec	1	5/6/2023 5:21:15 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/5/2023 7:32:49 PM
Surr: BFB	70.3	15-244		%Rec	1	5/5/2023 7:32:49 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.024		mg/Kg	1	5/5/2023 7:32:49 PM
Toluene	ND	0.048		mg/Kg	1	5/5/2023 7:32:49 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/5/2023 7:32:49 PM
Xylenes, Total	ND	0.095		mg/Kg	1	5/5/2023 7:32:49 PM
Surr: 4-Bromofluorobenzene	89.1	39.1-146		%Rec	1	5/5/2023 7:32:49 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	66	60		mg/Kg	20	5/5/2023 10:18:32 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-12 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 1:55:00 PM

**Lab ID:** 2305051-066

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	12	9.5		mg/Kg	1	5/6/2023 5:44:52 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 5:44:52 AM
Surr: DNOP	71.6	69-147		%Rec	1	5/6/2023 5:44:52 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/5/2023 7:56:16 PM
Surr: BFB	67.7	15-244		%Rec	1	5/5/2023 7:56:16 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	5/5/2023 7:56:16 PM
Toluene	ND	0.046		mg/Kg	1	5/5/2023 7:56:16 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/5/2023 7:56:16 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/5/2023 7:56:16 PM
Surr: 4-Bromofluorobenzene	85.8	39.1-146		%Rec	1	5/5/2023 7:56:16 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	77	61		mg/Kg	20	5/5/2023 10:55:33 PM

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

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-13 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 2:00:00 PM

**Lab ID:** 2305051-067

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	24	9.3		mg/Kg	1	5/6/2023 6:08:27 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/6/2023 6:08:27 AM
Surr: DNOP	72.6	69-147		%Rec	1	5/6/2023 6:08:27 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/5/2023 8:19:32 PM
Surr: BFB	78.0	15-244		%Rec	1	5/5/2023 8:19:32 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	5/5/2023 8:19:32 PM
Toluene	ND	0.046		mg/Kg	1	5/5/2023 8:19:32 PM
Ethylbenzene	ND	0.046		mg/Kg	1	5/5/2023 8:19:32 PM
Xylenes, Total	ND	0.091		mg/Kg	1	5/5/2023 8:19:32 PM
Surr: 4-Bromofluorobenzene	90.3	39.1-146		%Rec	1	5/5/2023 8:19:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	130	60		mg/Kg	20	5/5/2023 11:07:53 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-14 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 2:05:00 PM

**Lab ID:** 2305051-068

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	22	9.1		mg/Kg	1	5/6/2023 6:32:03 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/6/2023 6:32:03 AM
Surr: DNOP	73.7	69-147		%Rec	1	5/6/2023 6:32:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 9:29:56 PM
Surr: BFB	61.0	15-244		%Rec	1	5/5/2023 9:29:56 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	5/5/2023 9:29:56 PM
Toluene	ND	0.047		mg/Kg	1	5/5/2023 9:29:56 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 9:29:56 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/5/2023 9:29:56 PM
Surr: 4-Bromofluorobenzene	87.0	39.1-146		%Rec	1	5/5/2023 9:29:56 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	140	60		mg/Kg	20	5/5/2023 11:20:14 PM

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

**Qualifiers:**

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

**Analytical Report**

Lab Order **2305051**

Date Reported: **5/23/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Vertex Resources Services, Inc.

**Client Sample ID:** WS23-15 0-2'

**Project:** Emperor Oil Co Fed Gas B Com 001

**Collection Date:** 4/28/2023 2:10:00 PM

**Lab ID:** 2305051-069

**Matrix:** SOIL

**Received Date:** 5/2/2023 5:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	19	9.1		mg/Kg	1	5/6/2023 6:55:39 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/6/2023 6:55:39 AM
Surr: DNOP	73.2	69-147		%Rec	1	5/6/2023 6:55:39 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/5/2023 9:53:11 PM
Surr: BFB	72.9	15-244		%Rec	1	5/5/2023 9:53:11 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>JJP</b>
Benzene	ND	0.023		mg/Kg	1	5/5/2023 9:53:11 PM
Toluene	ND	0.047		mg/Kg	1	5/5/2023 9:53:11 PM
Ethylbenzene	ND	0.047		mg/Kg	1	5/5/2023 9:53:11 PM
Xylenes, Total	ND	0.093		mg/Kg	1	5/5/2023 9:53:11 PM
Surr: 4-Bromofluorobenzene	88.6	39.1-146		%Rec	1	5/5/2023 9:53:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	130	60		mg/Kg	20	5/5/2023 11:32:34 PM

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>MB-74755</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74755</b>		RunNo: <b>96528</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3500206</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74755</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74755</b>		RunNo: <b>96528</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3500207</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: <b>MB-74767</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74767</b>		RunNo: <b>96528</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3500238</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74767</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74767</b>		RunNo: <b>96528</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3500239</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID: <b>MB-74777</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74777</b>		RunNo: <b>96564</b>							
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3500949</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74777</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74777</b>		RunNo: <b>96564</b>							
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3500950</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>MB-74791</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74791</b>	RunNo: <b>96564</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500979</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74791</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74791</b>	RunNo: <b>96564</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500980</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.6	90	110			

Sample ID: <b>MB-74793</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74793</b>	RunNo: <b>96564</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501011</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-74793</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74793</b>	RunNo: <b>96564</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501012</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>MB-74728</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74728</b>	RunNo: <b>96501</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/3/2023</b>	SeqNo: <b>3496982</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.5		10.00		75.2	69	147			

Sample ID: <b>LCS-74728</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74728</b>	RunNo: <b>96501</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/3/2023</b>	SeqNo: <b>3496983</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.3	61.9	130			
Surr: DNOP	3.6		5.000		72.0	69	147			

Sample ID: <b>LCS-74745</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74745</b>	RunNo: <b>96511</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>	SeqNo: <b>3497819</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	61.9	130			
Surr: DNOP	5.5		5.000		110	69	147			

Sample ID: <b>MB-74745</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74745</b>	RunNo: <b>96511</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>	SeqNo: <b>3497820</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		110	69	147			

Sample ID: <b>LCS-74754</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74754</b>	RunNo: <b>96536</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/4/2023</b>	SeqNo: <b>3499343</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	105	61.9	130			
Surr: DNOP	4.1		5.000		81.5	69	147			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>2305051-043AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-43 2'</b>	Batch ID: <b>74754</b>	RunNo: <b>96536</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3499377</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.6	47.98	0	87.6	54.2	135			
Surr: DNOP	3.7		4.798		77.2	69	147			

Sample ID: <b>2305051-043AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-43 2'</b>	Batch ID: <b>74754</b>	RunNo: <b>96536</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3499378</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.7	48.54	0	99.3	54.2	135	13.7	29.2	
Surr: DNOP	3.8		4.854		77.5	69	147	0	0	

Sample ID: <b>MB-74761</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74761</b>	RunNo: <b>96558</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500730</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.1		10.00		71.3	69	147			

Sample ID: <b>LCS-74761</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74761</b>	RunNo: <b>96558</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500731</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.8	61.9	130			
Surr: DNOP	4.1		5.000		82.8	69	147			

Sample ID: <b>MB-74754</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74754</b>	RunNo: <b>96558</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500732</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.3		10.00		73.0	69	147			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>LCS-74769</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74769</b>	RunNo: <b>96542</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500877</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.7	61.9	130			
Surr: DNOP	4.4		5.000		87.3	69	147			

Sample ID: <b>MB-74769</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74769</b>	RunNo: <b>96542</b>								
Prep Date: <b>5/5/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3500878</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.0		10.00		69.8	69	147			

Sample ID: <b>2305051-044AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-44 2'</b>	Batch ID: <b>74761</b>	RunNo: <b>96558</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/6/2023</b>	SeqNo: <b>3501582</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	27	8.4	41.91	0	64.7	54.2	135			
Surr: DNOP	2.7		4.191		63.4	69	147			S

Sample ID: <b>2305051-044AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-44 2'</b>	Batch ID: <b>74761</b>	RunNo: <b>96558</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/6/2023</b>	SeqNo: <b>3501583</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	30	9.1	45.75	0	65.4	54.2	135	9.92	29.2	
Surr: DNOP	2.8		4.575		60.8	69	147	0	0	S

Sample ID: <b>MB-74810</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74810</b>	RunNo: <b>96640</b>								
Prep Date: <b>5/8/2023</b>	Analysis Date: <b>5/9/2023</b>	SeqNo: <b>3504279</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		111	69	147			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>LCS-74810</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74810</b>		RunNo: <b>96640</b>							
Prep Date: <b>5/8/2023</b>	Analysis Date: <b>5/9/2023</b>		SeqNo: <b>3504280</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.4	61.9	130			
Surr: DNOP	5.0		5.000		99.3	69	147			

Sample ID: <b>2305051-047AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BS23-47 2'</b>	Batch ID: <b>74810</b>		RunNo: <b>96640</b>							
Prep Date: <b>5/8/2023</b>	Analysis Date: <b>5/9/2023</b>		SeqNo: <b>3504287</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	28	9.7	48.50	0	58.0	54.2	135			
Surr: DNOP	2.5		4.850		50.7	69	147			S

Sample ID: <b>2305051-047AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>BS23-47 2'</b>	Batch ID: <b>74810</b>		RunNo: <b>96640</b>							
Prep Date: <b>5/8/2023</b>	Analysis Date: <b>5/9/2023</b>		SeqNo: <b>3504288</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	26	9.8	48.97	0	53.7	54.2	135	6.67	29.2	S
Surr: DNOP	2.2		4.897		45.7	69	147	0	0	S

Sample ID: <b>LCS-74850</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74850</b>		RunNo: <b>96649</b>							
Prep Date: <b>5/10/2023</b>	Analysis Date: <b>5/10/2023</b>		SeqNo: <b>3504616</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.2	61.9	130			
Surr: DNOP	4.3		5.000		85.6	69	147			

Sample ID: <b>MB-74850</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74850</b>		RunNo: <b>96649</b>							
Prep Date: <b>5/10/2023</b>	Analysis Date: <b>5/10/2023</b>		SeqNo: <b>3504617</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		94.9	69	147			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>2305051-048AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-48 2'</b>	Batch ID: <b>74833</b>	RunNo: <b>96648</b>								
Prep Date: <b>5/9/2023</b>	Analysis Date: <b>5/10/2023</b>	SeqNo: <b>3505680</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	37	9.6	48.08	0	76.8	54.2	135			
Surr: DNOP	3.3		4.808		68.3	69	147			S

Sample ID: <b>2305051-048AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS23-48 2'</b>	Batch ID: <b>74833</b>	RunNo: <b>96648</b>								
Prep Date: <b>5/9/2023</b>	Analysis Date: <b>5/10/2023</b>	SeqNo: <b>3505681</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.7	48.26	0	80.3	54.2	135	4.90	29.2	
Surr: DNOP	3.5		4.826		72.7	69	147	0	0	

Sample ID: <b>MB-74833</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74833</b>	RunNo: <b>96648</b>								
Prep Date: <b>5/9/2023</b>	Analysis Date: <b>5/10/2023</b>	SeqNo: <b>3505699</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.4	69	147			

Sample ID: <b>LCS-74833</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74833</b>	RunNo: <b>96648</b>								
Prep Date: <b>5/9/2023</b>	Analysis Date: <b>5/10/2023</b>	SeqNo: <b>3505700</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.0	61.9	130			
Surr: DNOP	4.2		5.000		83.5	69	147			

**Qualifiers:**

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- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>ics-74726</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74726</b>		RunNo: <b>96521</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498141</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	70	130			
Surr: BFB	4700		1000		468	15	244			S

Sample ID: <b>mb-74726</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74726</b>		RunNo: <b>96521</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498142</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	600		1000		60.5	15	244			

Sample ID: <b>2305051-024ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-24 4'</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498682</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	24.04	0	99.1	70	130			
Surr: BFB	2000		961.5		213	15	244			

Sample ID: <b>2305051-024amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-24 4'</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498683</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	23.92	0	90.8	70	130	9.20	20	
Surr: BFB	2000		956.9		206	15	244	0	0	

Sample ID: <b>ics-74760</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501760</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.1	70	130			
Surr: BFB	1900		1000		187	15	244			

Sample ID: <b>2305051-044ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BS23-44 2'</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501762</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>2305051-044ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS23-44 2'</b>	Batch ID: <b>74760</b>	RunNo: <b>96577</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501762</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	24.90	0	85.3	70	130			
Surr: BFB	1900		996.0		190	15	244			

Sample ID: <b>2305051-044amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS23-44 2'</b>	Batch ID: <b>74760</b>	RunNo: <b>96577</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501763</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	24.75	0	86.7	70	130	1.03	20	
Surr: BFB	2000		990.1		197	15	244	0	0	

Sample ID: <b>mb-74760</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74760</b>	RunNo: <b>96577</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501807</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.6	15	244			

Sample ID: <b>lcs-74764</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501809</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.2	70	130			
Surr: BFB	4800		1000		480	15	244			S

Sample ID: <b>mb-74764</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501810</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	810		1000		81.5	15	244			

Sample ID: <b>2305051-061ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WS23-07 0-4'</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501815</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>2305051-061ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WS23-07 0-4'</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501815</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.92	0	96.6	70	130			
Surr: BFB	5300		956.9		551	15	244			S

Sample ID: <b>2305051-061amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>WS23-07 0-4'</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501816</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.83	0	96.5	70	130	0.423	20	
Surr: BFB	5200		953.3		546	15	244	0	0	S

Sample ID: <b>MB-74748</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74748</b>	RunNo: <b>96529</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>	SeqNo: <b>3502014</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	830		1000		83.0	15	244			

Sample ID: <b>LCS-74748</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74748</b>	RunNo: <b>96529</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>	SeqNo: <b>3502033</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.3	70	130			
Surr: BFB	1900		1000		187	15	244			

Sample ID: <b>lcs-74735</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74735</b>	RunNo: <b>96584</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/8/2023</b>	SeqNo: <b>3502913</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.6	70	130			
Surr: BFB	4800		1000		481	15	244			S

Sample ID: <b>mb-74735</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74735</b>	RunNo: <b>96584</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/9/2023</b>	SeqNo: <b>3502914</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

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

# QC SUMMARY REPORT

**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2305051

23-May-23

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

**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>mb-74735</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74735</b>	RunNo: <b>96584</b>								
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/9/2023</b>	SeqNo: <b>3502914</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	680		1000		67.8	15	244			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>LCS-74726</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74726</b>		RunNo: <b>96521</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498152</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	82.2	70	130			
Toluene	0.85	0.050	1.000	0	85.3	70	130			
Ethylbenzene	0.85	0.050	1.000	0	85.4	70	130			
Xylenes, Total	2.6	0.10	3.000	0	86.2	70	130			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.9	39.1	146			

Sample ID: <b>mb-74726</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74726</b>		RunNo: <b>96521</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498154</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.5	39.1	146			

Sample ID: <b>2305051-025ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-25 4'</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498718</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	0.9940	0	98.6	70	130			
Toluene	1.0	0.050	0.9940	0	100	70	130			
Ethylbenzene	0.98	0.050	0.9940	0	98.6	70	130			
Xylenes, Total	2.9	0.099	2.982	0	97.4	70	130			
Surr: 4-Bromofluorobenzene	0.84		0.9940		84.8	39.1	146			

Sample ID: <b>2305051-025amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-25 4'</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3498719</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	0.9990	0	97.1	70	130	1.02	20	
Toluene	0.98	0.050	0.9990	0	98.2	70	130	1.50	20	
Ethylbenzene	0.97	0.050	0.9990	0	97.2	70	130	0.962	20	
Xylenes, Total	2.9	0.10	2.997	0	95.9	70	130	1.02	20	
Surr: 4-Bromofluorobenzene	0.85		0.9990		85.4	39.1	146	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>ics-74760</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501783</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.8	70	130			
Toluene	0.85	0.050	1.000	0	85.3	70	130			
Ethylbenzene	0.84	0.050	1.000	0	84.2	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.3	70	130			
Surr: 4-Bromofluorobenzene	0.84		1.000		84.4	39.1	146			

Sample ID: <b>2305051-045ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-45 2'</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501786</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9775	0	92.2	70	130			
Toluene	0.93	0.049	0.9775	0	95.5	70	130			
Ethylbenzene	0.92	0.049	0.9775	0	94.3	70	130			
Xylenes, Total	2.7	0.098	2.933	0	93.2	70	130			
Surr: 4-Bromofluorobenzene	0.83		0.9775		85.1	39.1	146			

Sample ID: <b>2305051-045amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>BS23-45 2'</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501787</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9747	0	94.4	70	130	2.08	20	
Toluene	0.95	0.049	0.9747	0	97.1	70	130	1.44	20	
Ethylbenzene	0.94	0.049	0.9747	0	96.2	70	130	1.69	20	
Xylenes, Total	2.8	0.097	2.924	0	94.9	70	130	1.54	20	
Surr: 4-Bromofluorobenzene	0.83		0.9747		84.9	39.1	146	0	0	

Sample ID: <b>mb-74760</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74760</b>		RunNo: <b>96577</b>							
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>		SeqNo: <b>3501806</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		84.6	39.1	146			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>2305051-062ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WS23-08 2-4'</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501847</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9425	0	96.0	70	130			
Toluene	0.94	0.047	0.9425	0.01577	98.5	70	130			
Ethylbenzene	0.96	0.047	0.9425	0	102	70	130			
Xylenes, Total	2.9	0.094	2.828	0	103	70	130			
Surr: 4-Bromofluorobenzene	0.87		0.9425		92.0	39.1	146			

Sample ID: <b>2305051-062amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WS23-08 2-4'</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501848</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.023	0.9390	0	95.7	70	130	0.658	20	
Toluene	0.94	0.047	0.9390	0.01577	98.2	70	130	0.686	20	
Ethylbenzene	0.96	0.047	0.9390	0	102	70	130	0.719	20	
Xylenes, Total	2.9	0.094	2.817	0	103	70	130	0.574	20	
Surr: 4-Bromofluorobenzene	0.87		0.9390		92.5	39.1	146	0	0	

Sample ID: <b>LCS-74764</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501872</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.5	70	130			
Toluene	0.89	0.050	1.000	0	89.4	70	130			
Ethylbenzene	0.89	0.050	1.000	0	88.8	70	130			
Xylenes, Total	2.7	0.10	3.000	0	89.7	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.8	39.1	146			

Sample ID: <b>mb-74764</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>74764</b>	RunNo: <b>96553</b>								
Prep Date: <b>5/4/2023</b>	Analysis Date: <b>5/5/2023</b>	SeqNo: <b>3501873</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		89.9	39.1	146			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2305051

23-May-23

**Client:** Vertex Resources Services, Inc.  
**Project:** Emperor Oil Co Fed Gas B Com 001

Sample ID: <b>MB-74748</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3502028</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.86		1.000		85.6	39.1	146			

Sample ID: <b>LCS-74748</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74748</b>		RunNo: <b>96529</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/4/2023</b>		SeqNo: <b>3502031</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.9	70	130			
Toluene	0.85	0.050	1.000	0	85.2	70	130			
Ethylbenzene	0.84	0.050	1.000	0	83.6	70	130			
Xylenes, Total	2.5	0.10	3.000	0	82.7	70	130			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.8	39.1	146			

Sample ID: <b>LCS-74735</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>74735</b>		RunNo: <b>96584</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/8/2023</b>		SeqNo: <b>3502935</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.025	1.000	0	80.2	70	130			
Toluene	0.83	0.050	1.000	0	83.3	70	130			
Ethylbenzene	0.83	0.050	1.000	0	82.5	70	130			
Xylenes, Total	2.5	0.10	3.000	0	83.6	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	39.1	146			

Sample ID: <b>mb-74735</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>74735</b>		RunNo: <b>96584</b>							
Prep Date: <b>5/3/2023</b>	Analysis Date: <b>5/9/2023</b>		SeqNo: <b>3502936</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.1	39.1	146			

**Qualifiers:**

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



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

# Sample Log-In Check List

Client Name: Vertex Resources Services, Inc. Work Order Number: 2305051 RcptNo: 1

Received By: Desiree Dominguez 5/2/2023 5:20:00 PM *DD*  
Completed By: Desiree Dominguez 5/2/2023 5:23:42 PM *DD*  
Reviewed By: *JH 5-3-23*

### Chain of Custody

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

### Log In

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

# of preserved bottles checked for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: *JH 5/3/23*

### Special Handling (if applicable)

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

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

16. Additional remarks:  
Client information not complete on COC. - DAD 5/2/23

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Yogi		

### Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:  
 Standard  Level 4 (Full Validation)  
 Accreditation:  Az Compliance  Other  
 NELAC  Other  
 EDD (Type)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
4/27	8:00	Soil	BS23-01	402	ILU	2305051
	8:05		-02			-001
	8:10		-03			-002
	8:15		-04			-003
	8:20		-05			-004
	8:25		-06			-005
	8:30		-07			-006
	8:35		-08			-007
	8:40		-09			-008
	8:45		-10			-009
	8:50		-11			-010
	8:55		-12			-012

Relinquished by: [Signature]

Date/Time: 5/1/23 11:00

Relinquished by: [Signature]

Date/Time: 5/2/23 17:25

Turn-Around Time:  Standard  Rush 5 Day

Project Name: Emperor Oil Co Fed Gas B Com #001

Project #: 22E-03899

Project Manager: Monica Peppin

Sampler: MOP

On Ice:  Yes  No

# of Coolers: 1

Cooler Temp (including CF): 0.6 to 1.0 = 0.7 (°C)

Yogi

Container Type and #

Preservative Type

HEAL No.

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

Received by: [Signature]

Via: courier

Date/Time: 5/2/23 17:25

Remarks: Not a lot



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

Analysis Request

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

### Chain-of-Custody Record

Client: Vesta X

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

Standard  Level 4 (Full Validation)

Accreditation:  Az Compliance

NELAC  Other

EDD (Type)

Turn-Around Time:  Standard  Rush 5 Day

Project Name: Empire

Project #: Empire 22E-03899

Project Manager: Monica Peppin

Sampler: MJR

On Ice:  Yes  No

# of Coolers: 1

Cooler Temp (including CF): Dillo to 1 = 0.7 (°C)

Container Type and #

Preservative Type

HEAL No. 2305051

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
4/27	9:00	Soil	BS23-13	402	ice	-013
	9:05		-14			-014
	9:10		-15			-015
	9:15		-16			-016
	9:20		-17			-017
	9:25		-18			-018
	9:30		-19			-019
	9:35		-20			-020
	9:40		-21			-020
	9:45		-22			-020
	9:50		-23			-020
	9:55		-24			-020

Date: 5/1/23 Time: 10:00

Relinquished by: [Signature]

Date: 5/2/23 Time: 17:00

Relinquished by: [Signature]

Received by: [Signature] Date: 5/1/23 Time: 10:00

Received by: [Signature] Date: 5/2/23 Time: 17:00



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

Analysis Request

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

Remarks:

Matched

2 of 6





### Chain-of-Custody Record

Client: VX-TX Turn-Around Time: Standard  Rush  5 DAY

Mailing Address: in file Project Name: Empower

Phone #: \_\_\_\_\_ Project #: 226-33899

email or Fax#: \_\_\_\_\_ Project Manager: M. Reppin

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

Accreditation:  NELAC  Other

EDD (Type) \_\_\_\_\_

Sampler: MSP On Ice:  Yes  No

# of Coolers: 1 Cooler Temp (including CF): 0.6 to 0.1 = 0.7 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
4/28	1020	Soil	B523-49 2'	402	ice	2305051
	1025		50 2'			-050
	1030		51 2'			-051
	1035		52 2'			-052
	1040		53 2'			-053
	1045		54 2'			-054
	1 00		WS23-01 0-4			-055
	1 05		02 0-4			-056
	1 10		03 0-4			-057
	1 15		04 0-4			-058
	1 20		05 0-4			-059
	1 25		06 0-4			-060

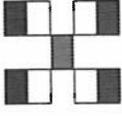
Received by: [Signature] Date: 5/1/23 Time: 10:30

Relinquished by: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: [Signature] Date: 5/2/23 Time: 17:20

Relinquished by: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_

### HALL ENVIRONMENTAL ANALYSIS LABORATORY



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

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

Remarks: \_\_\_\_\_

5066

### Chain-of-Custody Record

Client: Vertex

Mailing Address: on file

Phone #: \_\_\_\_\_

email or Fax#: \_\_\_\_\_

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

Accreditation:  Az Compliance  NELAC  Other

EDD (Type) \_\_\_\_\_

Turn-Around Time:  Standard  Rush 5 Day

Project Name: Empur

Project #: 22E-03899

Project Manager: M. Rupp

Sampler: MP

On Ice:  Yes  No

# of Coolers: 1 Yog:

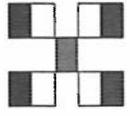
Cooler Temp (including CF): 0.6 to 1.0 = 0.72 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
4/28	130	Soil	WS23-07 0-4	402	Ice	2305051
	135		08 2-4			-062
	146		09 2-4			-063
	145		10 0-2			-064
	150		11 0-2			-065
	155		12 0-2			-066
	200		13 0-2			-067
	205		14 0-2			-068
	210		15 0-2			-069

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Relinquished by: [Signature]

Date: 5/1/23 Time: 10:30 Received by: [Signature]

Date: 5/1/23 Time: 17:20 Relinquished by: [Signature] Via: Courier



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
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Analysis Request	
<input checked="" type="checkbox"/> BTEX / MTBE / TMBs (8021)	
<input checked="" type="checkbox"/> TPH:8015D(GRO / DRO / MRO)	
<input checked="" type="checkbox"/> 8081 Pesticides/8082 PCBs	
<input checked="" type="checkbox"/> EDB (Method 504.1)	
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<input checked="" type="checkbox"/> RCRA 8 Metals	
<input checked="" type="checkbox"/> Cl <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup>	
<input checked="" type="checkbox"/> 8260 (VOA)	
<input checked="" type="checkbox"/> 8270 (Semi-VOA)	
<input checked="" type="checkbox"/> Total Coliform (Present/Absent)	

Remarks: \_\_\_\_\_

6 of 6

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

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

CONDITIONS

Action 222636

**CONDITIONS**

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 222636
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAB1527329788 EMPEROR OIL CO FEDERAL GAS B COM #001, thank you. This closure is approved.	10/27/2023