



December 8, 2022

Vertex Project #: 22E-03973

**Spill Closure Report:** Bola 7 Federal #003H  
Section 07, Township 18 South, Range 32 East  
API: 30-025-35535  
County: Lea  
Incident Report: nAPP2232125330

**Prepared For:** **Matador Production Company**  
One Lincoln Centre  
Dallas, Texas 75240

**New Mexico Oil Conservation Division – District 1 – Hobbs**

1625 North French Drive  
Hobbs, New Mexico 88240

Matador Production Company (Matador) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment and Remediation for a release of crude oil caused by a frac communication from a nearby well causing a tank overflow at Bola 7 Federal #003H, API 30-025-35535, Incident nAPP2232125330 (hereafter referred to as “Bola”). This letter provides a description of the Spill Assessment and Remediation and includes a request for Spill Closure. The spill area is located at N 32.76479, W -103.798241.

**Background**

The site is located approximately 11.24 miles southeast of Loco Hills, New Mexico (Google Inc., 2022). The legal location for the site is Section 07, Township 18 South and Range 32 East in Lea County, New Mexico. The spill area is located on Bureau of Land Management (BLM) 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, 2022) indicates the site’s surface geology is comprised primarily of Qep – eolian and piedmont deposits that include eolian sand interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2022). The Natural Resources Conservation Service *Web Soil Survey* characterizes the predominant soil texture on the site as Kermit soils and Dune land. It tends to be excessively drained with very low runoff and very high available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

The surrounding landscape is associated with dunes at elevations of 3,000 to 4,400 feet above sea level. The climate is semi-arid, with an annual precipitation ranging between 10 to 15 inches. Historically, the plant community has grassland aspect, dominated by grasses with shrubs. Sand bluestem and giant dropseed is dominant with a mixture of sand shinnery oak, sand bluestem, plains bristlegrass, sand paspalum, sagebrush and threeawns. Grass cover is variable due to shifting sands and large irregular dunes producing variations in the spatial distribution and composition of the plant

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community (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

There is no surface water located at Bola. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 Mexico Administrative Code (NMAC; New Mexico Oil Conservation Division, 2018), is the Pecos River located approximately 29.8 miles southwest of the site (Google Inc., 2022). 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 November 16, 2022, due to a frac communication from a nearby wellsite causing the tank to overflow. The spill was reported on November 17, 2022, and involved the release of approximately 18 barrels (bbl.) of produced oil into the earthen bermed containment and pastureland northeast of the site. Approximately 15 bbl. of free fluid was removed during initial spill clean-up. Field screening and laboratory analysis are included in Table 2 (Attachment 2). The New Mexico Oil Conservation Division (NMOCD) C-141 Report: nAPP2232125330 is included in Attachment 3. The daily field report (DFR) and site photographs are included in Attachment 4.

## Closure Criteria Determination

The depth to groundwater was determined using information from the United States Department of the Interior, United States Geological Survey (2022) National Water Information Mapping System and New Mexico Office of the State Engineer (2022) 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 87 feet below ground surface (bgs) and 0.56 miles from the site (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2022). Documentation used in Closure Criteria Determination research is included in Attachment 5.

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<b>Closure Criteria Worksheet</b>			
<b>Site Name: Bola 7 Federal #003H</b>			
<b>Spill Coordinates:</b>		<b>X: 32.76479</b>	<b>Y: -103.798241</b>
<b>Site Specific Conditions</b>		<b>Value</b>	<b>Unit</b>
1	Depth to Groundwater	87	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	157,251	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	43,861	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	56,935	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>	3,010	feet
	ii) Within 1000 feet of any fresh water well or spring	3,010	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	11,165	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Kermit soils and Dune land	
12	Ecological Classification	Sandhills	
13	Geology	Qep	
	<b>NMAC 19.15.29.12 E (Table 1) Closure Criteria</b>	<50'	<50' 51-100' >100'

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

<b>Table 1. Closure Criteria for Soils Impacted by a Release</b>		
<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>
<b>&lt; 50 feet</b>	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 16, 2022, which identified the area of the spill specified in the initial C-141 Report, estimated the approximate volume of the spill and white lined the area required for the 811 One Call request. An emergency One Call was placed to prevent the migration of contamination. The impacted areas were determined to be approximately 147 feet long and 25 feet wide and 222 feet long and 87 feet wide; the total affected area was determined to be 2,641 square feet for the containment area and 7,212 square feet for the pasture area. The aerial view schematic is included in Figure 1, Attachment 1. The DFR associated with the site inspection is included in Attachment 4.

Remediation efforts began on November 19, 2022 and were completed on November 23, 2022. Vertex personnel supervised the excavation of impacted soils. A surface scrape in the pastureland and excavation within the earthen bermed containment were completed during the emergency clean up. Field screening was completed on multiple sample points and consisted of analysis using a photo ionization detector (volatile hydrocarbons), Dextil 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 2 feet bgs. Due to the minimal impact and excavation depth, no samples were submitted for laboratory analysis and confirmatory notification was placed. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Field screening results are included in Table 2 (Attachment 2).

Notification that confirmatory samples were being collected was provided to the NMOCD on November 20, 2022, 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 66 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 results are presented in Table 2 (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.

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## Closure Request

The spill area was fully delineated, remediated and will be 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 respectfully requests that this spill be closed.

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



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Monica Peppin, A.S.  
PROJECT MANAGER, REPORTING

December 8, 2022

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Date

## Attachments

- Attachment 1. Figure
- Attachment 2. Table
- Attachment 3. NMOCD C-141 Report
- Attachment 4. Daily Field Reports with Pictures
- Attachment 5. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 6. Confirmatory Sample Notification
- Attachment 7. Laboratory Data Reports and Chain of Custody Forms

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Bola 7 Federal #003H, nAPP2232125330

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December 2022

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## References

- Google Inc. (2022). *Google Earth Pro* (Version 7.3.4) [Software]. Retrieved from <http://www.google.com/earth> on November 18, 2022.
- New Mexico Bureau of Geology and Mineral Resources. (2022). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>.
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- United States Department of Homeland Security, FEMA Flood Map Service Center. (2020). *Flood Map 25025C1050D*. Retrieved from <https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor>
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Bola 7 Federal #003H, nAPP2232125330

**2022 Spill Assessment and Remediation**  
December 2022

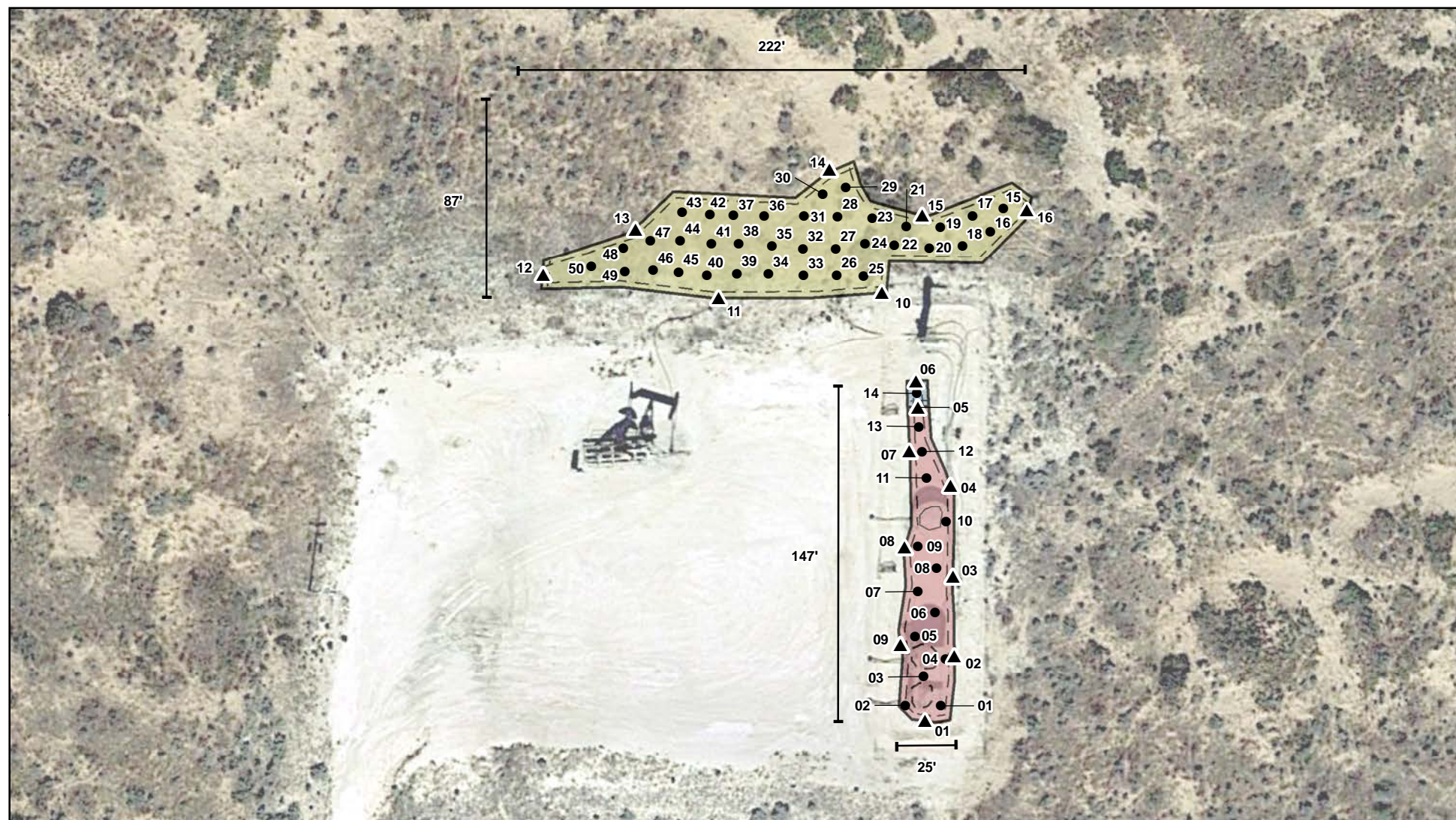
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## Limitations

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**



0 25 50 Feet  
Map Center:  
Lat/Long: 32.764866, -103.798152

NAD 1983 UTM Zone 13N  
Date: Dec 02/22



Release area Schematic  
Bola 7 Federal Com #003H

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 ESRI, 2022. Features from GPS. Vertex Professional Services Ltd., 2022.

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## **ATTACHMENT 2**



Client Name: Matador Resources  
 Site Name: Bola 7 Federal Com #003  
 NMOCD Tracking #: nAPP2232125330  
 Project #: 22E-03973  
 Lab Report: 2211D92

Table 2. Initial Characterization/Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater &lt;50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatiles Organic Compounds	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					Chloride Concentration
			(PID)	(ppm)	(ppm)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS22-01	0.5'	2022-11-23	-	26	63	ND	ND	ND	ND	ND	ND	ND	ND
BS22-02	0.5'	2022-11-23	-	12	86	ND	ND	ND	ND	ND	ND	ND	ND
BS22-03	0.5'	2022-11-23	-	6	157	ND	ND	ND	ND	ND	ND	ND	ND
BS22-04	0.5'	2022-11-23	-	11	432	ND	ND	ND	ND	ND	ND	ND	ND
BS22-05	0.5'	2022-11-23	-	15	191	ND	ND	ND	ND	ND	ND	ND	ND
BS22-06	0.5'	2022-11-23	-	9	180	ND	ND	ND	ND	ND	ND	ND	ND
BS22-07	0.5'	2022-11-23	-	28	265	ND	ND	ND	ND	ND	ND	ND	160
BS22-08	0.5'	2022-11-23	-	4	76	ND	ND	ND	ND	ND	ND	ND	ND
BS22-09	0.5'	2022-11-23	-	10	113	ND	ND	ND	ND	ND	ND	ND	ND
BS22-10	0.5'	2022-11-23	-	20	167	ND	ND	ND	ND	ND	ND	ND	ND
BS22-11	0.5'	2022-11-23	-	16	225	ND	ND	ND	ND	ND	ND	ND	ND
BS22-12	0.5'	2022-11-23	-	9	134	ND	ND	ND	ND	ND	ND	ND	ND
BS22-13	0.5'	2022-11-23	-	0	295	ND	ND	ND	ND	ND	ND	ND	ND
BS22-14	2'	2022-11-23	-	8	203	ND	ND	ND	ND	ND	ND	ND	ND
BS22-15	0.25'	2022-11-23	-	14	229	ND	ND	ND	ND	ND	ND	ND	ND
BS22-16	0.25'	2022-11-23	-	10	456	ND	ND	ND	ND	ND	ND	ND	ND
BS22-17	0.25'	2022-11-23	-	6	59	ND	ND	ND	ND	ND	ND	ND	ND
BS22-18	0.25'	2022-11-23	-	11	207	ND	ND	ND	ND	ND	ND	ND	ND
BS22-19	0.25'	2022-11-23	-	17	209	ND	ND	ND	ND	ND	ND	ND	ND
BS22-20	0.25'	2022-11-23	-	14	157	ND	ND	ND	ND	ND	ND	ND	ND
BS22-21	0.25'	2022-11-23	-	10	118								ND
BS22-22	0.25'	2022-11-23	-	9	93								ND
BS22-23	0.25'	2022-11-23	-	8	157								ND
BS22-24	0.25'	2022-11-23	-	12	264								ND
BS22-25	0.25'	2022-11-23	-	13	196								ND
BS22-26	0.25'	2022-11-23	-	15	167								ND
BS22-27	0.25'	2022-11-23	-	7	147								ND
BS22-28	0.25'	2022-11-23	-	2	141								ND
BS22-29	0.25'	2022-11-23	-	4	178								ND
BS22-30	0.25'	2022-11-23	-	7	249								ND
BS22-31	0.25'	2022-11-23	-	14	76								ND
BS22-32	0.25'	2022-11-23	-	16	109								ND
BS22-33	0.25'	2022-11-23	-	15	89								ND
BS22-34	0.25'	2022-11-23	-	13	131								ND
BS22-35	0.25'	2022-11-23	-	17	180								ND
BS22-36	0.25'	2022-11-23	-	12	186								ND
BS22-37	0.25'	2022-11-23	-	8	138								ND
BS22-38	0.25'	2022-11-23	-	19	122								ND
BS22-39	0.25'	2022-11-23	-	16	272								ND
BS22-40	0.25'	2022-11-23	-	12	187								ND
BS22-41	0.25'	2022-11-23	-	8	222								ND
BS22-42	0.25'	2022-11-23	-	2	115								ND
BS22-43	0.25'	2022-11-23	-	7	67								ND
BS22-44	0.25'	2022-11-23	-	5	88								ND
BS22-45	0.25'	2022-11-23	-	12	118								ND
BS22-46	0.25'	2022-11-23	-	11	122								ND
BS22-47	0.25'	2022-11-23	-	17	98								ND
BS22-48	0.25'	2022-11-23	-	13	170								ND
BS22-49	0.25'	2022-11-23	-	18	186								ND
BS22-50	0.25'	2022-11-23	-	9	220								ND
WS22-01	0-0.5'	2022-11-23	-	12	301								ND
WS22-02	0-0.5'	2022-11-23	-	9	191								ND

Client Name: Matador Resources  
 Site Name: Bola 7 Federal Com #003  
 NMOCD Tracking #: nAPP2232125330  
 Project #: 22E-03973  
 Lab Report: 2211D92

Table 2. Initial Characterization/Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
WS22-03	0-0.5'	2022-11-23	-	6	135	ND	ND	ND	ND	ND	ND	ND	ND
WS22-04	0-0.5'	2022-11-23	-	12	151	ND	ND	ND	ND	ND	ND	ND	ND
WS22-05	0.5-2'	2022-11-23	-	14	152	ND	ND	ND	ND	ND	ND	ND	ND
WS22-06	0-0.5'	2022-11-23	-	13	63	ND	ND	ND	ND	ND	ND	ND	ND
WS22-07	0-0.5'	2022-11-23	-	7	134	ND	ND	ND	ND	ND	ND	ND	ND
WS22-08	0-0.25'	2022-11-23	-	8	113	ND	ND	ND	ND	ND	ND	ND	ND
WS22-09	0-0.25'	2022-11-23	-	2	73	ND	ND	ND	ND	ND	ND	ND	ND
WS22-10	0-0.25'	2022-11-23	-	14	255	ND	ND	ND	ND	ND	ND	ND	ND
WS22-11	0-0.25'	2022-11-23	-	6	297	ND	ND	ND	ND	ND	ND	ND	ND
WS22-12	0-0.25'	2022-11-23	-	4	186	ND	ND	ND	ND	ND	ND	ND	ND
WS22-13	0-0.25'	2022-11-23	-	0	142	ND	ND	ND	ND	ND	ND	ND	ND
WS22-14	0-0.25'	2022-11-23	-	2	93	ND	ND	ND	ND	ND	ND	ND	ND
WS22-15	0-0.25'	2022-11-23	-	12	183	ND	ND	ND	ND	ND	ND	ND	ND
WS22-16	0-0.25'	2022-11-23	-	14	261	ND	ND	ND	ND	ND	ND	ND	ND

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed



## **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 Department

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	nAPP2232125330
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	Matador Production Company	OGRID	228937
Contact Name	Arsenio Jones	Contact Telephone	575-361-4333
Contact email	arsenio.jones@matadorresources.com	Incident # (assigned by OCD)	nAPP2232125330
Contact mailing address	One Lincoln Centre Dallas, Texas 75240		

### Location of Release Source

Latitude 32.76479 Longitude -103.798241  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Bola 7 Federal #003H	Site Type	Oil
Date Release Discovered	11/16/2022	API# (if applicable)	30-025-35535

Unit Letter	Section	Township	Range	County
H	07	18S	32E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 19 bbls	Volume Recovered (bbls) 15 bbls
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Frac Communication causing tank overflow

## Oil Conservation Division

Incident ID	nAPP2232125330
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Arsenio Jones</u>	Title: <u>RES Specialist</u>
Signature: <u>Clint Talley</u>	Date: <u>01/12/2023</u>
email: <u>arsenio.jones@matadorresources.com</u>	Telephone: <u>575-361-4333</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

Incident ID	nAPP2232125330
District RP	
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?	<u>87</u> (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 checked="" type="checkbox"/> Yes <input 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 ½-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.

## Oil Conservation Division

Incident ID	nAPP2232125330
District RP	
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: Arsenio Jones Title: RES Specialist

Signature: Clint Talley Date: 01/12/2023

email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

**OCD Only**

Received by: Jocelyn Harimon Date: 01/02/2023

Incident ID	nAPP2232125330
District RP	
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: Arsenio Jones Title: RES Specialist  
Signature: Clint Talley Date: 01/12/2023  
email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

**OCD Only**

Received by: Jocelyn Harimon Date: 01/12/2023

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: Jennifer Nobui Date: 02/01/2023  
Printed Name: Jennifer Nobui Title: Environmental Specialist A

## **ATTACHMENT 4**



## Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	11/16/2022
Site Location Name:	Bola 7 Federal Com #003	Report Run Date:	12/6/2022 8:19 PM
Client Contact Name:	Arsenio Jones	API #:	30-025-35535
Client Contact Phone #:	(575)361-4333		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

### Summary of Times

Arrived at Site 11/16/2022 3:45 PM

Departed Site 11/16/2022 5:30 PM

### Field Notes

**16:23** Response to new release. Area affected is earthen berm containment and pasture. Thick layer of oil released

**16:30** Fluid and overspray in pasture. Defined dark area shows where overspray occurred

**17:00** Heavy oil sheen layer across containment area

**17:05** Pasture delineation to be completed as soon as possible. Overspray area should consist of a surface scrape and remove heavily coated vegetation

**17:07** Frac communication with neighboring well caused release

### Next Steps & Recommendations

**1** Vertical and horizontal delineation

**2** Excavation



# Daily Site Visit Report



## Site Photos

Viewing Direction: North



Pasture area

Viewing Direction: Northwest



Release area

Viewing Direction: West



Release area

Viewing Direction: South



Containment area



## Daily Site Visit Report

Viewing Direction: Southeast



Containment

Viewing Direction: North



Containment

Viewing Direction: North



Containment





Viewing Direction: Northeast



Containment







## Daily Site Visit Report

<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 17 Viewing Direction: East Date: Containment Created: 11/6/2022 4:57:48 PM Lat:36.784822, Long:-103.787887</p>	<p><b>Viewing Direction: Southeast</b></p>  <p>Descriptive Photo - 18 Viewing Direction: Southeast Date: Containment Created: 11/6/2022 4:58:08 PM Lat:36.784822, Long:-103.787887</p>
Containment	Containment
<p><b>Viewing Direction: South</b></p>  <p>Descriptive Photo - 19 Viewing Direction: South Date: Containment Created: 11/6/2022 5:01:31 PM Lat:36.784764, Long:-103.787887</p>	<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 2 Viewing Direction: East Date: Release point Created: 11/6/2022 4:58:17 PM Lat:36.784822, Long:-103.787887</p>
Containment	Release point





## Daily Site Visit Report

<p><b>Viewing Direction: Northwest</b></p>  <p>Descriptive Photo - 3 Viewing Direction: Northwest Desc: Pasture area Created: 11/15/2022 4:26:38 PM Lat: 32.785040, Long: -103.798775</p> <p>Pasture area</p>	<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 4 Viewing Direction: East Desc: Pasture area Created: 11/15/2022 4:28:51 PM Lat: 32.785040, Long: -103.798775</p> <p>Pasture area</p>
<p><b>Viewing Direction: South</b></p>  <p>Descriptive Photo - 5 Viewing Direction: South Desc: Pasture area Created: 11/15/2022 4:30:32 PM Lat: 32.785040, Long: -103.798775</p> <p>Pasture area</p>	<p><b>Viewing Direction: East</b></p>  <p>Descriptive Photo - 6 Viewing Direction: East Desc: Release area Created: 11/15/2022 4:31:32 PM Lat: 32.785040, Long: -103.798775</p> <p>Release area</p>



## Daily Site Visit Report

**Viewing Direction: Northeast**



Release area

**Viewing Direction: South**



Release area

**Viewing Direction: Southeast**



Release area

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Monica Peppin

**Signature:**

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

Signature



## Daily Site Visit Report

Client:	<u>Matador Resources</u>	Inspection Date:	<u>11/23/2022</u>
Site Location Name:	<u>Bola 7 Federal Com #003</u>	Report Run Date:	<u>12/6/2022 8:18 PM</u>
Client Contact Name:	<u>Arsenio Jones</u>	API #:	<u>30-025-35535</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 11/23/2022 7:33 AM

Departed Site

### Field Notes

**9:50** Confirmation sampling of containment area and pasture

### Next Steps & Recommendations

- 1** Wait for lab analysis
- 2** Closure report
- 3** Backfill



## Daily Site Visit Report



## Site Photos

Viewing Direction: West



Scraped area

Viewing Direction: Southwest



Excavation area

Viewing Direction: South



Behind tanks to east

Viewing Direction: North



West of tanks





## Daily Site Visit Report

Viewing Direction: Northeast



Excavation area

Viewing Direction: East



Scraped area

Viewing Direction: Northeast



Scraped area

Viewing Direction: Southeast



Scraped area



## Daily Site Visit Report

Viewing Direction: Southwest



Scraped area

Viewing Direction: South



Excavation area

Viewing Direction: Southeast



Excavation area

Viewing Direction: North



Excavation area



## Daily Site Visit Report

Viewing Direction: South



Excavation area

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Monica Peppin

**Signature:**

  
Signature

## **ATTACHMENT 5**





# New Mexico Office of the State Engineer

## Transaction Summary

72121 All Applications Under Statute 72-12-1

Transaction Number: 475398

Transaction Desc: CP 00672

File Date: 07/22/1992

Primary Status: PMT Permit

Secondary Status: LOG Well Log Received



Person Assigned: \*\*\*\*\*

Applicant: VIRGIL LINAM ESTATE

Contact: FAYE KLEIN

x

### Events

	Date	Type	Description	Comment	Processed By
	<a href="#">get images</a> 07/22/1992	APP	Application Received	*	*****
	08/04/1992	FIN	Final Action on application		*****
	08/04/1992	WAP	General Approval Letter		*****
	<a href="#">get images</a> 08/12/1992	LOG	Well Log Received	*	*****
	06/16/2011	ARV	Rec & Arch - file location	CP 00672 Box: 503	*****

x

### Change To:

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
CP 00672		3		STK 72-12-1 LIVESTOCK WATERING

### \*\*Point of Diversion

CP 00672	R	612475	3624947*	
----------	---	--------	----------	---

\*An (\*) after northing value indicates UTM location was derived from PLSS - see Help

x

### Remarks

THE EXISTING WELL THAT WAS DRILLED IN 1985 HAS COLLAPSED AND WILL NEED A NEW WELL. THE NEW WELL WILL BE DRILLED APPROXIMATELY 20 FEET SOUTHEAST OF OLD EXISTING WELL CP-672.

x

### Conditions

- 1A Depth of the well shall not exceed the thickness of the valley fill.
- 4 Use shall be limited to household, non-commercial trees, lawn and garden not to exceed one acre and/or stock use.
- A The maximum amount of water that may be appropriated under this permit is 3 acre-feet in any year.

x

### Action of the State Engineer

\*\* See Image For Any Additional Conditions of Approval \*\*

Approval Code: A - Approved

Action Date: 08/04/1992

Log Due Date: 08/31/1993

State Engineer:

---

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.

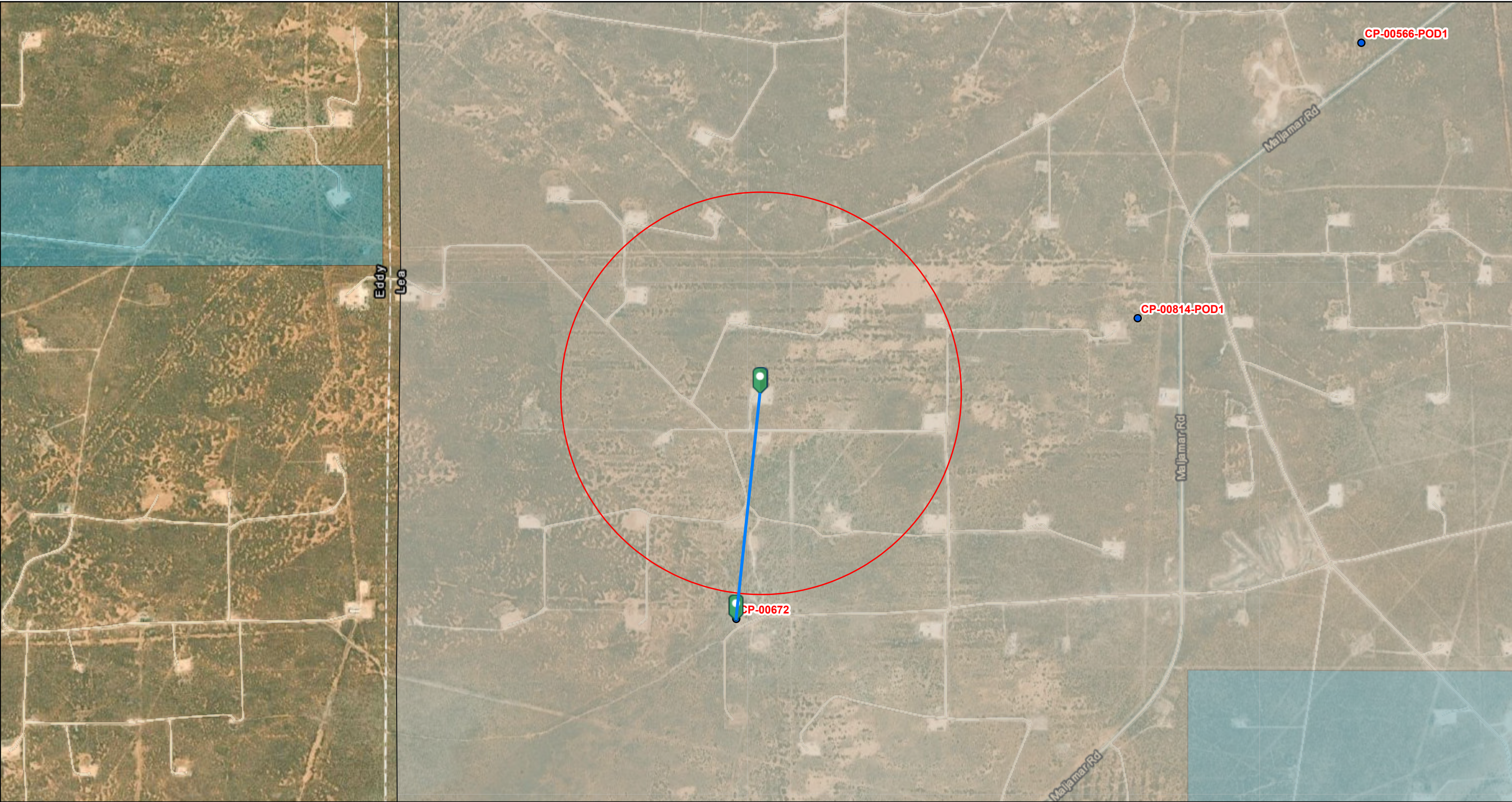
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11/17/22 5:24 PM

TRANSACTION SUMMARY

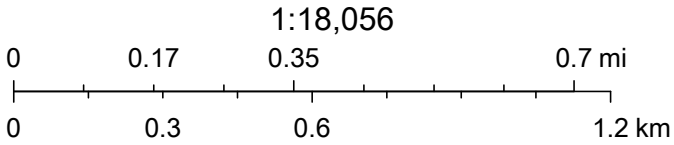


Bola 7 Federal #003



11/17/2022, 5:16:19 PM

- Override 1
- OSE District Boundary
- New Mexico State Trust Lands
- GIS WATERS PODs
- Active
- Water Right Regulations
- Closure Area
- Both Estates
- SiteBoundaries



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





USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- **ALERT!** USGS will be performing an upgrade to their network on **Thursday, November 17, 2022, starting at 10:00pm EST**. During the maintenance period, the Water Data for the Nation web portal and water services will be accessible; however, delivery of the most recent time-series data and WaterAlert notifications will be disrupted. The maintenance period is not expected to exceed 4 hours, after which the backlog of time-series data will be processed and delivered.
- [Water Data for the Nation Blog](#)

Groundwater levels for the Nation

 Important: [Next Generation Monitoring Location Page](#)

## Search Results -- 1 sites found

site\_no list =

- 324519103474501

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

## USGS 324519103474501 18S.32E.07.44233

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°45'24", Longitude 103°47'55" NAD27

Land-surface elevation 3,759.00 feet above NGVD29

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

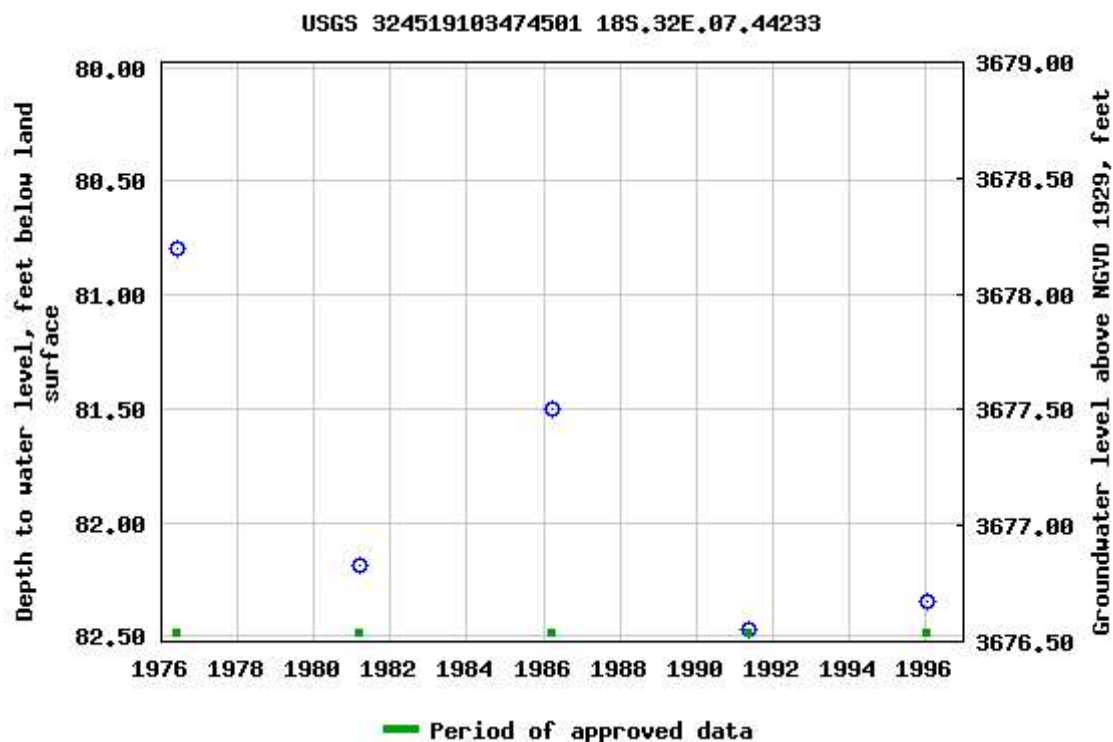
### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

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[News](#)

[Accessibility](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**

Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-11-18 09:42:12 EST

0.58 0.49 nadww01





## Bola 7 Federal #003H

Nearest USGS Well: 324519103474501

Distance: 0.56 miles

Last Reading: 1996

### Legend

- 324519103474501
- 📌 Bola 7 Federal #003H

Bola 7 Federal #003H 📌

● 324519103474501







# New Mexico Office of the State Engineer

## Water Right Summary


[get image list](#)

**WR File Number:** CP 00672      **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:** VIRGIL LINAM ESTATE  
**Contact:** FAYE KLEIN

### Documents on File

	Trn #	Doc	File/Act	Status			Transaction Desc.	From/ To	Acres	Diversion	Consumptive
				1	2						
	<a href="#">475398</a>	<a href="#">72121</a>	<a href="#">1992-08-04</a>	PMT	LOG		CP 00672	T		3	
	<a href="#">475397</a>	<a href="#">72121</a>	<a href="#">1985-01-31</a>	PMT	LOG		CP 00672	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 00672</a>		Shallow	4	4	07	18S 32E	612475	3624947*	

\*An (\*) after northing value indicates UTM location was derived from PLSS - see Help

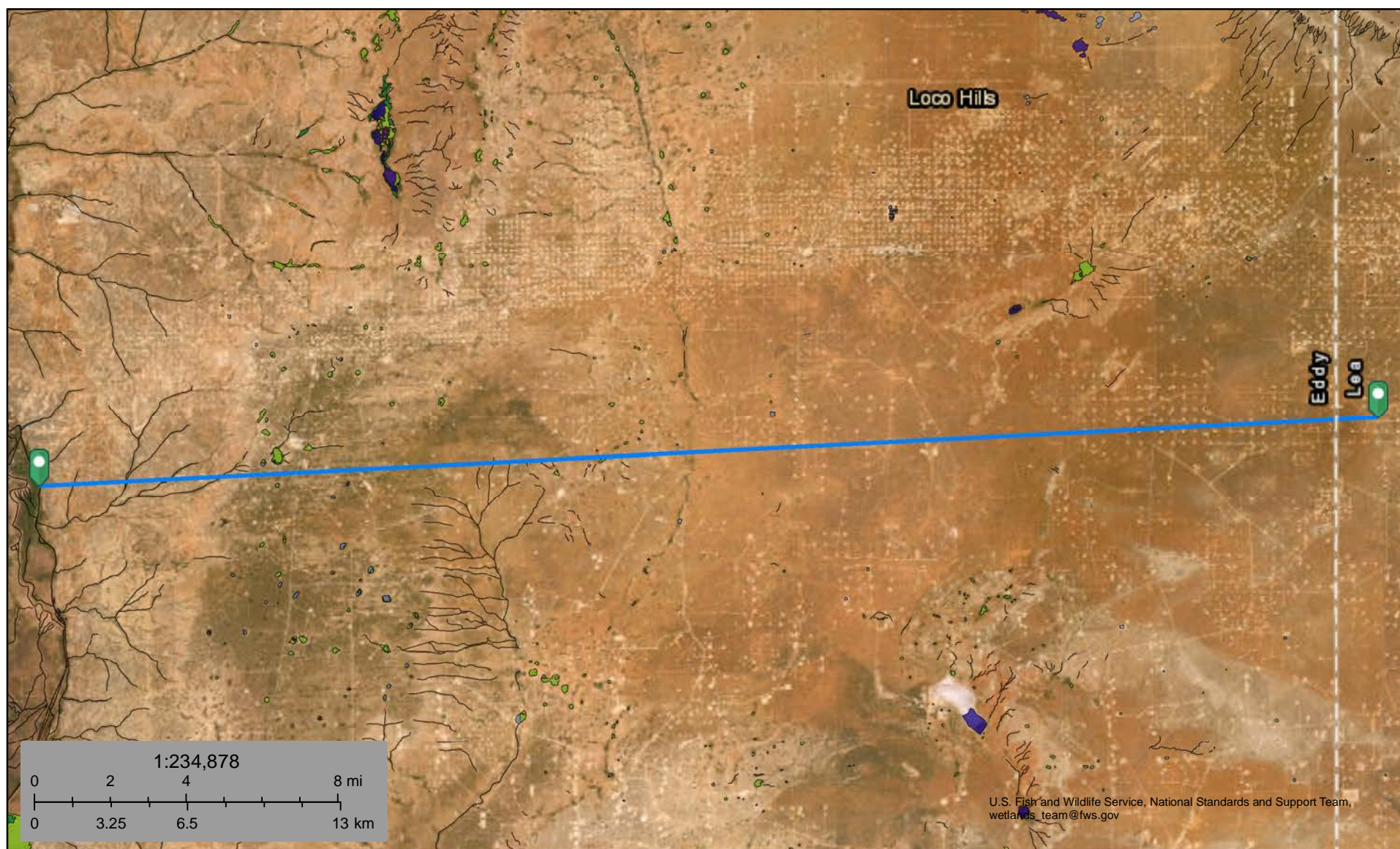
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/17/22 5:23 PM

WATER RIGHT SUMMARY



Bola 7 Federal #003H



November 18, 2022

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

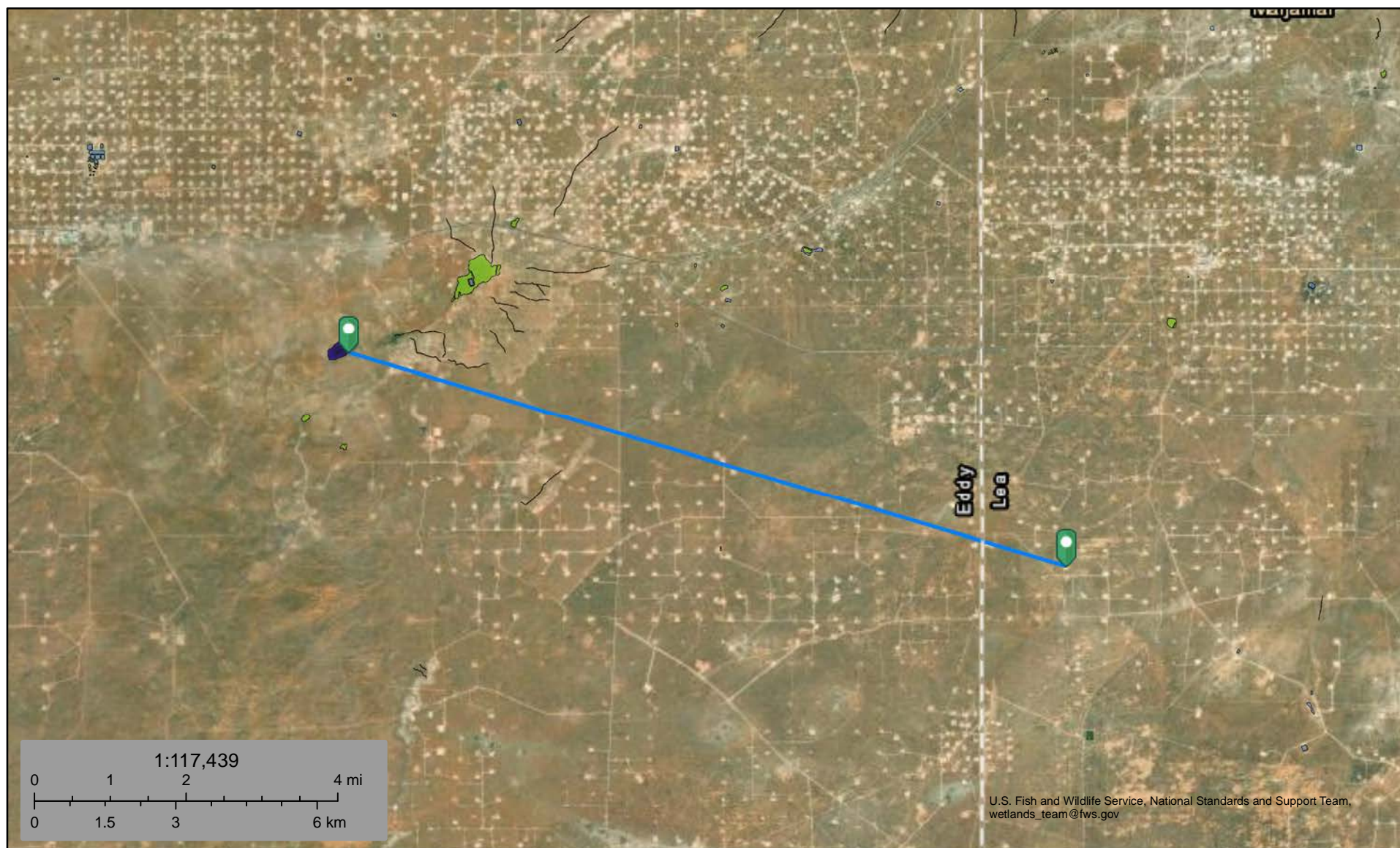
- Lake
- Other
- Riverine

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.





Bola 7 Federal #003H



November 18, 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.

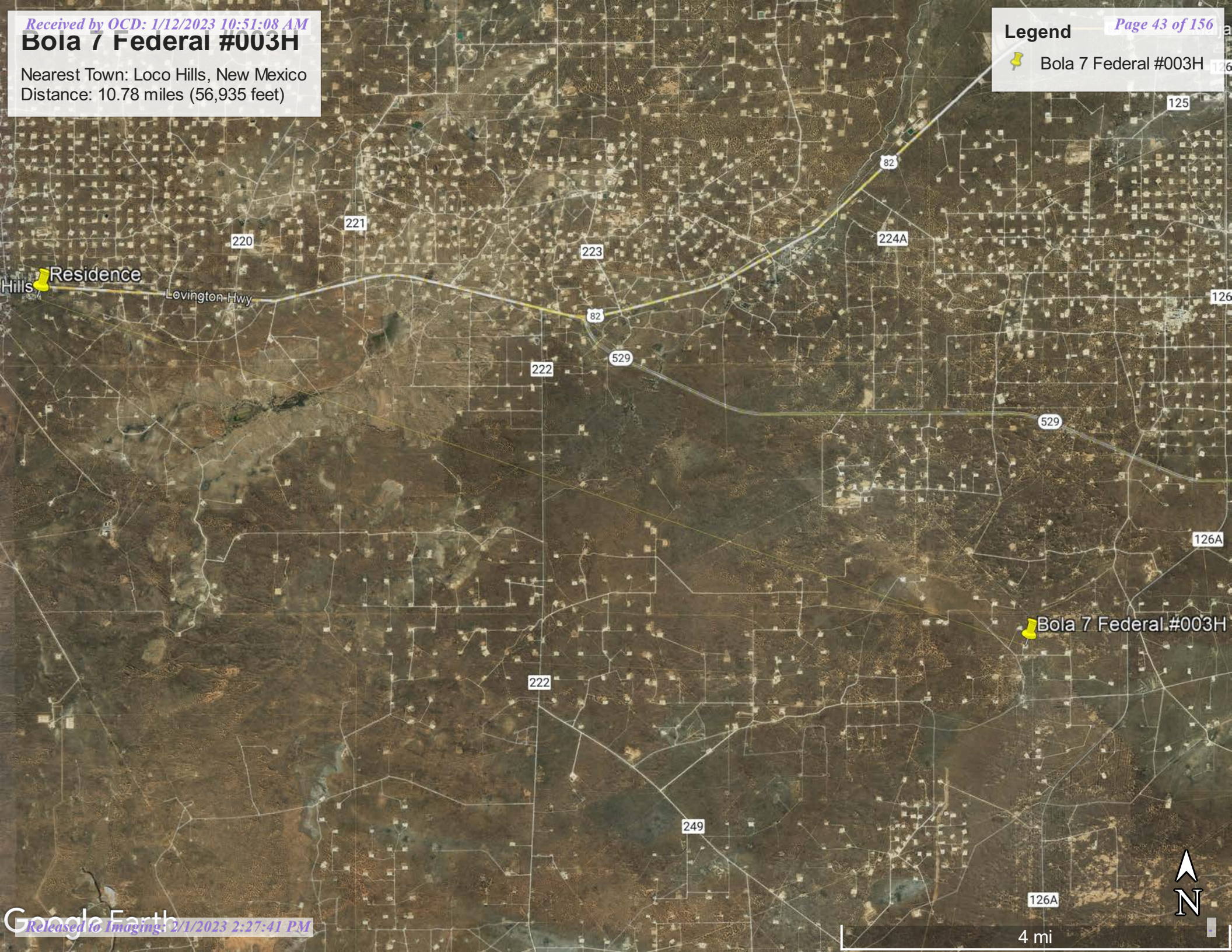


# Bola 7 Federal #003H

Nearest Town: Loco Hills, New Mexico  
Distance: 10.78 miles (56,935 feet)

## Legend

 Bola 7 Federal #003H





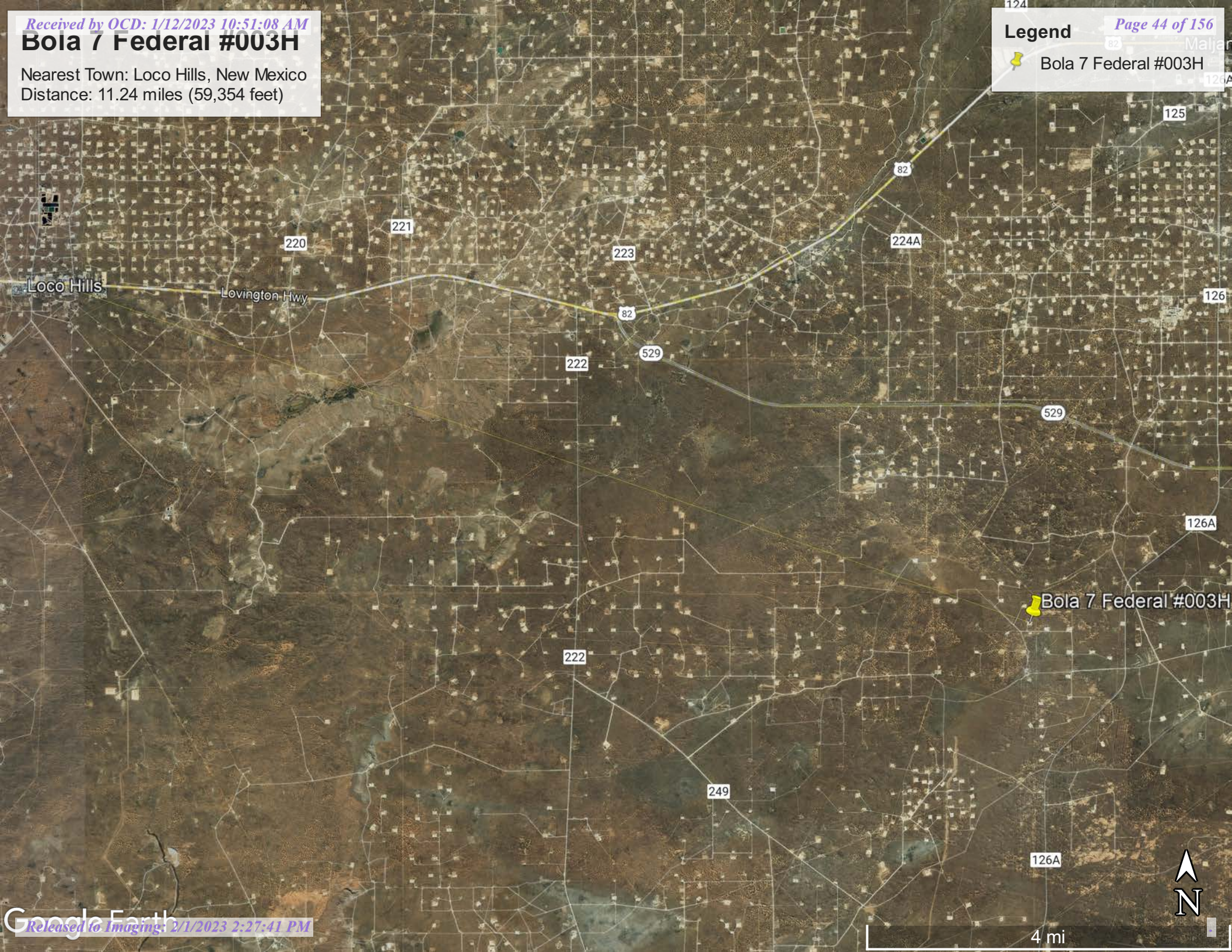
# Bola 7 Federal #003H

Nearest Town: Loco Hills, New Mexico  
Distance: 11.24 miles (59,354 feet)

## Legend



Bola 7 Federal #003H



4 mi





Bola 7 Federal #003H



November 18, 2022

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

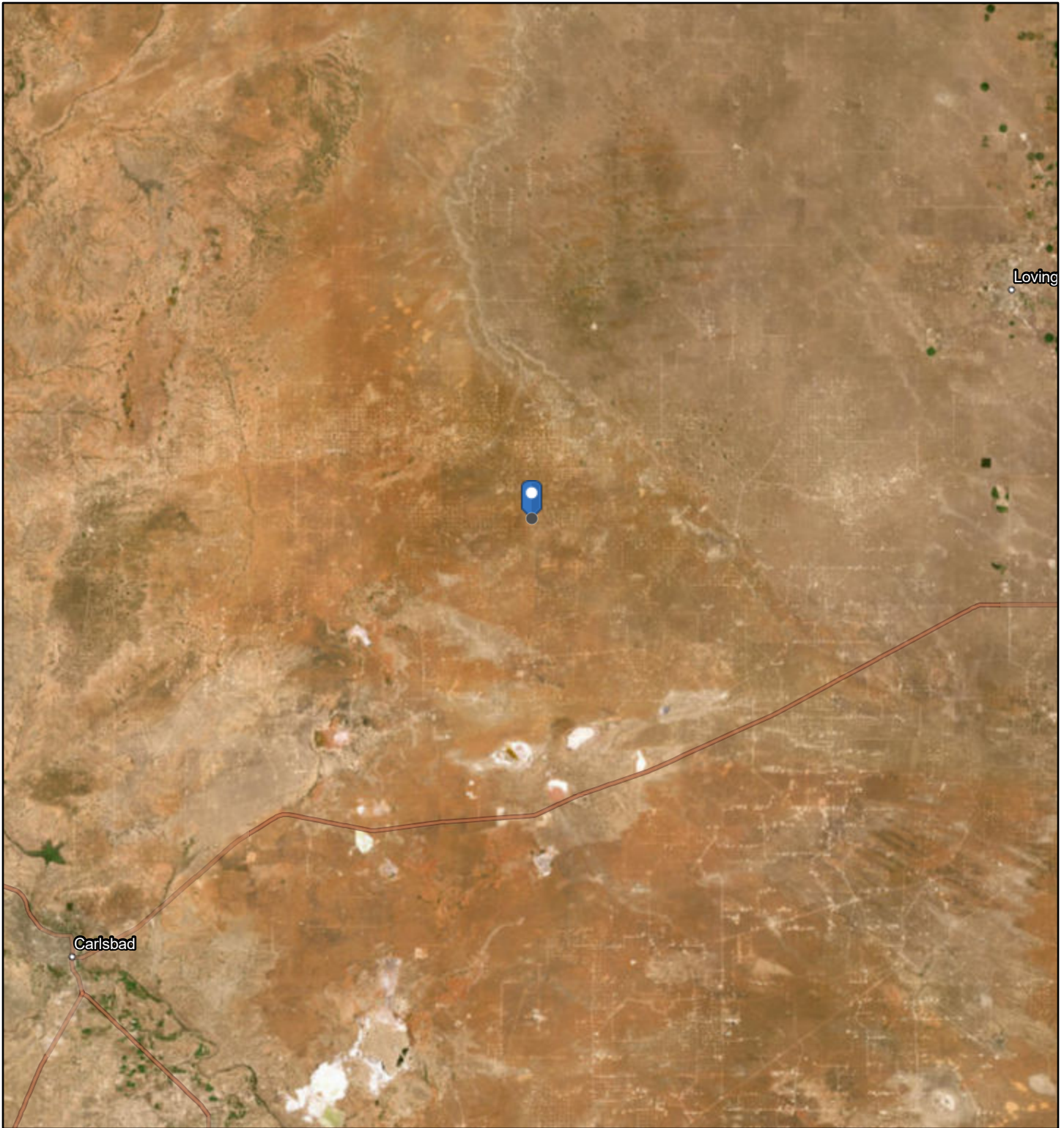
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

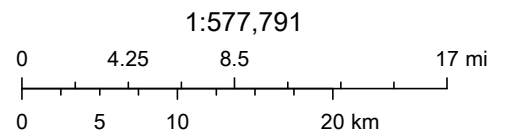
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# Bola 7 Federal #003



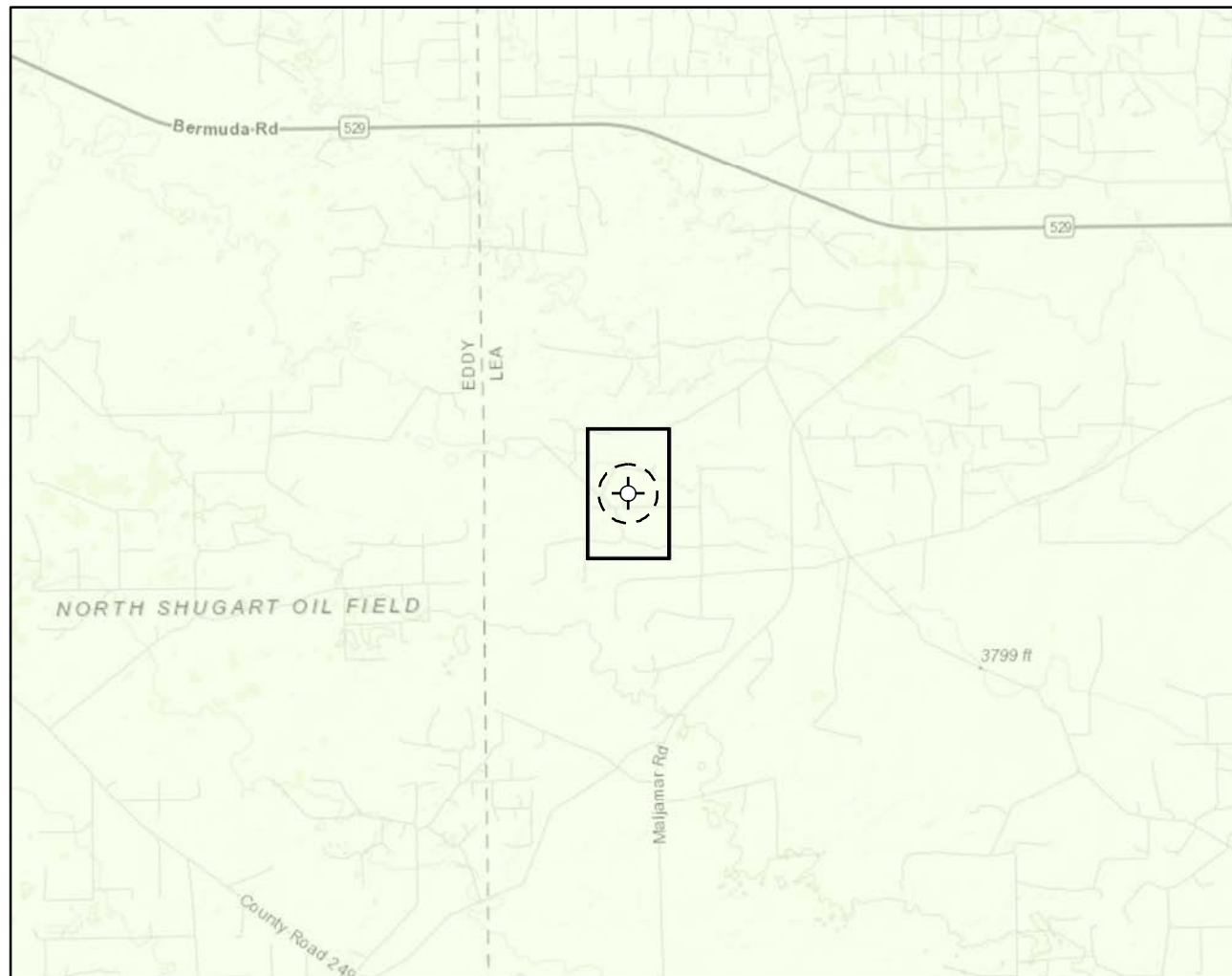
11/17/2022, 10:20:01 AM



Earthstar Geographics, New Mexico State University, Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS



Document Path: G:\Projects\US PROJECTS\Material Resources\22E-03973 - Bola 7 Federal Com #003\Figure X Karst Schematic Bola 7 Federal Com #003.mxd



#### Karst Potential

- Critical
- High
- Medium
- Low

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

#### Overview Map

0 0.25 0.5 1 mi



#### Detail Map

0 150 300 600 ft.



Map Center:  
Lat/Long: 32.764790, -103.798241

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



#### Karst Potential Schematic Bola 7 Federal Com #003

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.

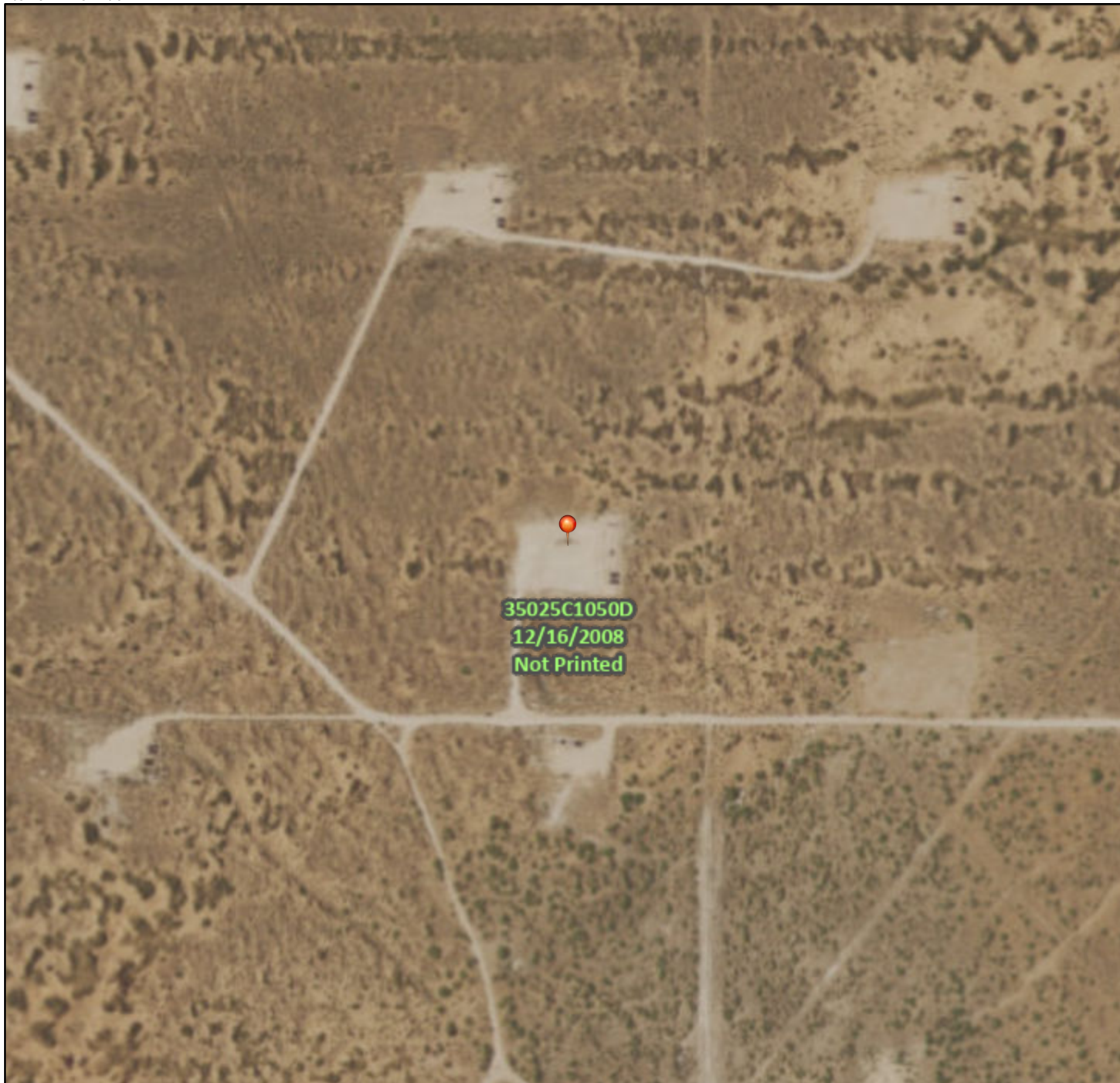
Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic. Karst potential data sourced from Roswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

# National Flood Hazard Layer FIRMette



103°48'12"W 32°46'8"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000 103°47'35"W 32°45'38"N

Released to Imaging: 2/1/2023 2:27:41 PM

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
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.

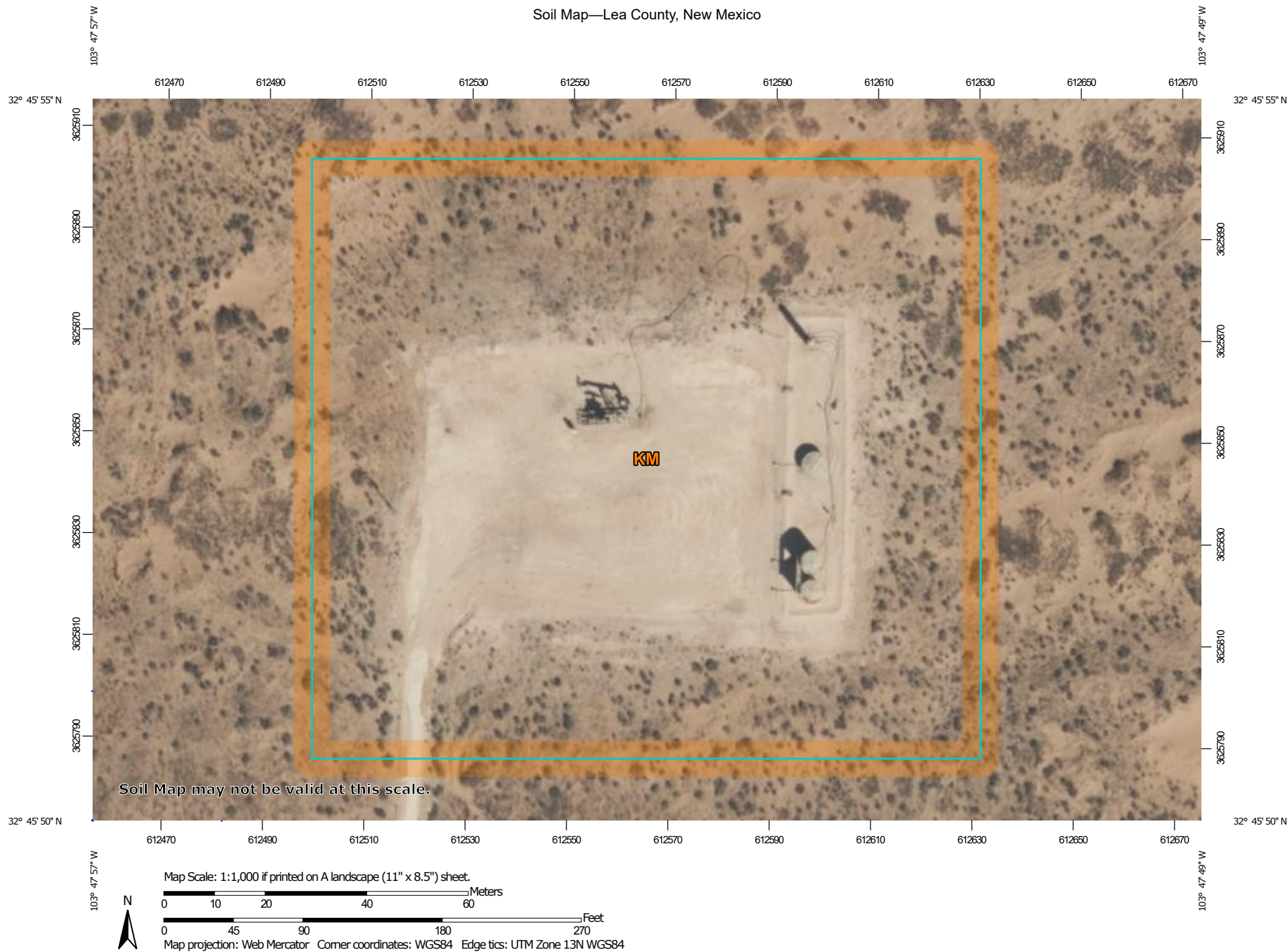
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/17/2022 at 12:17 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—Lea County, New Mexico



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

11/17/2022  
Page 1 of 3

## Soil Map—Lea County, 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: Lea County, New Mexico

Survey Area Data: Version 19, Sep 8, 2022

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KM	Kermit soils and Dune land, 0 to 12 percent slopes	3.9	100.0%
Totals for Area of Interest		3.9	100.0%



Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes---Lea County, New Mexico

---

## Lea County, New Mexico

### KM—Kermit soils and Dune land, 0 to 12 percent slopes

#### Map Unit Setting

*National map unit symbol:* dmpx  
*Elevation:* 3,000 to 4,400 feet  
*Mean annual precipitation:* 10 to 15 inches  
*Mean annual air temperature:* 60 to 62 degrees F  
*Frost-free period:* 190 to 205 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Kermit and similar soils:* 46 percent  
*Dune land:* 44 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Kermit

##### Setting

*Landform:* Dunes  
*Landform position (two-dimensional):* Shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear, concave  
*Across-slope shape:* Convex  
*Parent material:* Calcareous sandy eolian deposits derived from sedimentary rock

##### Typical profile

*A - 0 to 8 inches:* fine sand  
*C - 8 to 60 inches:* fine sand

##### Properties and qualities

*Slope:* 5 to 12 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 3 percent  
*Gypsum, maximum content:* 1 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water supply, 0 to 60 inches:* Low (about 3.1 inches)

Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes---Lea County, New Mexico

---

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* A

*Ecological site:* R070BC022NM - Sandhills

*Hydric soil rating:* No

**Description of Dune Land****Setting**

*Landform:* Dunes

*Landform position (two-dimensional):* Shoulder, backslope, footslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex, linear, concave

*Across-slope shape:* Convex

*Parent material:* Sandy eolian deposits derived from sedimentary rock

**Typical profile**

*A - 0 to 6 inches:* fine sand

*C - 6 to 60 inches:* fine sand

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

**Minor Components****Palomas**

*Percent of map unit:* 3 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Pyote**

*Percent of map unit:* 3 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Wink**

*Percent of map unit:* 2 percent

*Ecological site:* R070BD003NM - Loamy Sand

*Hydric soil rating:* No

**Maljamar**

*Percent of map unit:* 2 percent

*Ecological site:* R070BD003NM - Loamy Sand

Map Unit Description: Kermit soils and Dune land, 0 to 12 percent slopes---Lea County, New Mexico

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*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Lea County, New Mexico  
Survey Area Data: Version 19, Sep 8, 2022



## Ecological site R070BC022NM Sandhills

Accessed: 11/18/2022

### 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.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

### Physiographic features

This site occurs on plains. The soils are calcareous sandy eolian deposits derived from sedimentary rock. Land form of sand dunes or hillslopes. Slopes average 5 to 35 percent. Slopes are complex as the steeper slopes are shorter in length while the more gentle slopes are longer in length. Direction of slopes vary and is usually not significant. Elevations range from 2,842 to 4,500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Plain (2) Hill (3) Dune
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	5–35%
Aspect	Aspect is not a significant factor

### Climatic features

The climate of the area is “semi-arid continental”. 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 180 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 this site. Because of the texture of this soil, most rainfall is effective. Strong winds blow from the west and southwest from January through June which accelerates soil drying at a time for cool season

plant growth.

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

**Table 3. Representative climatic features**

Frost-free period (average)	220 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

## Influencing water features

This site is not influenced by wetlands or streams.

## Soil features

The soils of this site are deep and very deep. Surface textures are fine sand or loamy fine sand. Subsoils are a fine sand or loamy fine sand to a depth of 60 inches or more. These soils have less than 10 percent clay content. These soils are subject to severe wind erosion if vegetative cover is not adequate.

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

Characteristic Soils Are:

Kermit

Aguena

**Table 4. Representative soil features**

Surface texture	(1) Fine sand (2) Loamy fine sand (3) Loamy sand
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Rapid to very rapid
Soil depth	60–72 in
Surface fragment cover ≤3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0–40in)	3–9 in
Calcium carbonate equivalent (0–40in)	0–7%
Electrical conductivity (0–40in)	0–2 mmhos/cm
Sodium adsorption ratio (0–40in)	0–1
Soil reaction (1:1 water) (0–40in)	7.4–8.4
Subsurface fragment volume ≤3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%



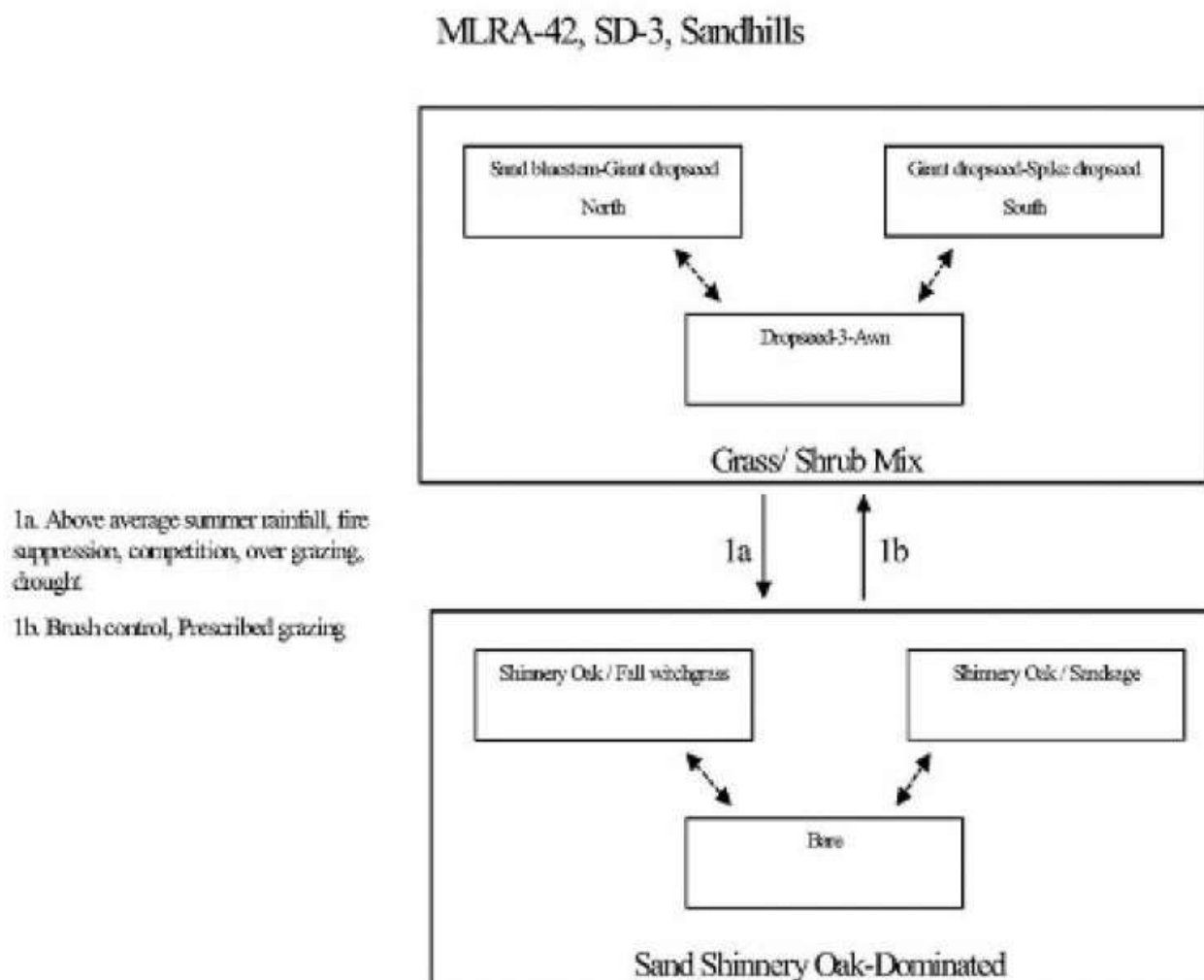
## Ecological dynamics

### Overview:

The Sandhills site occurs adjacent to or intergrades with the Deep Sand site. The Sandhills site is differentiated from deep sand sites by a steeper average slope, and an increased depth to a soil texture change. Sandhills slopes are usually greater than eight percent, and the soil profile is a fine sand or loamy fine sand to a depth greater than 60 inches. Deep Sand sites have slopes less than eight percent and a textural change can occur at less than 60 inches. The historic plant community of the Sandhills site is a mixture of grasses, shrubs and forbs, with tall grasses dominating in aspect. During years of abundant spring moisture, tall growing forbs occasionally reach aspect dominance. Sand bluestem and giant dropseed are the dominant grasses, with Havard panicum and dropseeds as sub-dominants. Sand shinnery oak and soapweed yucca are the dominant shrubs. Drought favors shinnery by impacting grasses more severely. Shinnery oak's ability to store water and carbohydrates, and its strong negative leaf water potential enable it to out compete grasses during drought conditions. Changes in historical fire regimes, competition by shrubs, and overgrazing may contribute to this site becoming dominated by sand shinnery oak.

## State and transition model

### Plant Communities and Transitional Pathways (diagram)



## State 1 Grass/Shrub Mix

### Community 1.1 Grass/Shrub Mix

Grass/Shrub Mix: The historic plant community in the northern part of the resource area (SD-3) is dominated by sand bluestem and giant dropseed, with Havard panicum as a sub-dominant. Primary grass dominance may gradually shift moving south across the resource area to a community dominated by giant dropseed and spike dropseed, with mesa dropseed as the sub-dominant grass species. Throughout the resource area sand shinnery oak and soapweed yucca are the dominant shrubs with sand sagebrush as the sub-dominant. As retrogression within this state occurs, plants such as sand bluestem, giant dropseed, Havard panicum, plains bristlegrass, sand paspalum, and fourwing saltbush decrease. This results in an increase in spike dropseed, sand dropseed, mesa dropseed, threeawns sand shinnery oak, and sand sagebrush. Continued loss of grass cover may result in a transition to a sand shinnery oak dominated state. Diagnosis: Sand bluestem or giant dropseed are dominant or present in substantial amounts. Spike dropseed, sand dropseed or mesa dropseed may be dominant in some instances. Grass cover is variable, shifting sands and large irregular dunes produce considerable variation in the spatial distribution and composition of the plant community. Grass cover is not continuous, but is fairly uniform across the more stable areas. Large natural bare areas or blowouts are a common feature on the less stable portions of the Sandhills site.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	360	585	810
Shrub/Vine	120	195	270
Forb	120	195	270
<b>Total</b>	<b>600</b>	<b>975</b>	<b>1350</b>

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	10-15%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	20-25%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	45-60%

Figure 5. Plant community growth curve (percent production by month).  
NM2822, R042XC022NM Sandhills HCPC. R042XC022NM Sandhills HCPC  
warm season plant community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	3	4	10	10	25	30	12	5	0	0

## State 2

### Sand Shinnery Oak-Dominated

#### Community 2.1

##### Sand Shinnery Oak-Dominated

Additional States: Sand Shinnery Oak -Dominated: Sand shinnery oak is the dominant species and in dense stands may reduce forage production by as much as 90 percent.<sup>1</sup> It often forms a mosaic of dense thickets interspersed with occasional motts of taller oaks, large areas of bare ground, and concentrations of sand sagebrush. Sand shinnery oak is well suited to deep sandy soils. The height and cover of oak decreases as sand depth decreases or clay content increases. The aggressive nature of fall witchgrass and continued loss of more palatable grasses and threeawn species may result in a sand shinnery oak-fall witchgrass community. Burning may result in a community with very little grass or sand shinnery oak (bare). Sand shinnery oak usually recovers due to its ability to sprout aggressively following fire. Diagnosis: Sand shinnery oak is the dominant species. Grass cover is sparse and patchy. Shrub cover is high. Blowouts and bare areas are common, however, high shrub cover mediates erosion. Transition to Sand Shinnery Oak Dominated (1a): Climate may play a role in facilitating the spread sand shinnery oak. It is best adapted to those areas that receive an average of 16 inches of annual rainfall; it may therefore gain a competitive advantage during cycles of above average precipitation. Sand shinnery oak spreads mainly by elongation of rhizomes, but in some instances will reproduce by seed. The establishment and survival of seedlings is limited to those years with abundant rainfall during the months of July and August. If fire historically played a part in suppressing the density and distribution of shrubs in desert grasslands, then fire suppression may facilitate a shift to shrub dominance.<sup>2</sup> Competition for resources between grasses and shrubs may be a factor in increased densities of sand shinnery oak. 1 Sand shinnery oak has an extensive system of underground roots and stems that can uptake and store water for growth during drier periods, allowing it to increase, at times when grasses decrease. Evidence of competitive suppression of grasses is indicated by increases in herbaceous vegetation following chemical control of sand shinnery oak.<sup>1</sup> However, this increase may in part be due to a flush of nutrients made available from the decomposing biomass of woody roots and stems. Loss of grass cover due to overgrazing or drought may give a competitive advantage to sand shinnery oak. Key indicators of approach to transition: \* A decrease in the tall grass species and the associated increase in threeawns may be indicative of the initial stage of transition to a shrub-dominated state. \* Increased cover of sand shinnery oak. Transition back to Grass/Shrub Mix (1b) Chemical brush control is an effective means of controlling sand shinnery oak and sand sagebrush. Where large areas of chemical control are planned, increased erosion and the effect on loss of wildlife habitat should be considered. Prescribed grazing will help ensure an adequate deferment period to allow grass recovery and subsequent proper forage utilization. There have been studies that suggest long term browsing by goats can reduce sand shinnery oak, altering production in favor of grasses.<sup>3</sup>

### Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1				195–293	
	sand bluestem	ANHA	<i>Andropogon hallii</i>	195–293	—
	Havard's panicgrass	PAHA2	<i>Panicum havardii</i>	195–293	—
	giant dropseed	SPGI	<i>Sporobolus giganteus</i>	195–293	—
2				146–195	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	146–195	—
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	146–195	—
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	146–195	—
3				49–98	
	thin paspalum	PASE5	<i>Paspalum setaceum</i>	49–98	—
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	49–98	—

4				29-49	
	threeawn	ARIST	<i>Aristida</i>	29-49	-
	mat sandbur	CELO3	<i>Cenchrus longispinus</i>	29-49	-
	flatsedge	CYPER	<i>Cyperus</i>	29-49	-
5				29-49	
	Grass, perennial	2GP	<i>Grass, perennial</i>	29-49	-
<b>Shrub/Vine</b>					
6				49-98	
	Havard oak	QUHA3	<i>Quercus havardii</i>	49-98	-
7				49-98	
	soapweed yucca	YUGL	<i>Yucca glauca</i>	49-98	-
8				29-49	
	sand sagebrush	ARFI2	<i>Artemisia filifolia</i>	29-49	-
9				20-49	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	20-49	-
10				20-49	
	rabbitbrush	CHRY9	<i>Chrysothamnus</i>	20-49	-
11				20-49	
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	20-49	-
<b>Forb</b>					
12				20-49	
	featherplume	DAFO	<i>Dalea formosa</i>	20-49	-
13				29-49	
	sundrops	CALYL	<i>Calylophus</i>	29-49	-
	phlox heliotrope	HECO5	<i>Heliotropium convolvulaceum</i>	29-49	-
	sharpleaf penstemon	PEAC	<i>Penstemon acuminatus</i>	29-49	-
14				20-49	
	touristplant	DIWI2	<i>Dimorphocarpa wislizeni</i>	20-49	-
	lemon beebalm	MOCI	<i>Monarda citriodora</i>	20-49	-
16				29-49	
	hymenopappus	HYMEN4	<i>Hymenopappus</i>	29-49	-
	blazingstar	MENTZ	<i>Mentzelia</i>	29-49	-
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus var. flaccidus</i>	29-49	-
17				20-49	
	sunflower	HELIA3	<i>Helianthus</i>	20-49	-
18				20-49	
	buckwheat	ERIOG	<i>Eriogonum</i>	20-49	-
19				20-49	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	20-49	-

## Animal community

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, Ord's kangaroo rat, Northern grasshopper mouse, Southern Plains woodrat, swift fox, roadrunner, meadowlark, lark bunting, ferruginous hawk, lesser prairie chicken, mourning dove, scaled quail, sand



dune lizard, marbled whiptail, ornate box turtle, bullsnake and Western diamondback rattlesnake. Grasshopper and vesper sparrows utilize the site during migration. The ferruginous hawk sometimes nests on dunes associated with the site. White-tailed deer are also sometimes associated with this site (Mescalero Sands). Where mesquite invades, resident species of birds such as white-necked raven, roadrunner, pyrrhuloxia, mourning dove, and Harris hawk nest. Where sand hummocks form around shrubs, rodent populations and their predators increase. Fourwing saltbush, shinnery oak, sand sagebrush, and mesquite provide protective cover for scaled quail. Seed, green herbage, and fruit from a variety of grasses, forbs, and shrubs provide food for a number of birds and mammals, including mourning dove, scaled quail, lesser prairie chicken and antelope.

## Hydrological functions

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

Hydrologic Interpretations

Soil Series----- Hydrologic Group

Kermit----- A

Aguena----- A

## Recreational uses

This site offers recreation potential for hiking, horseback riding, nature observation and photography. This site also offers opportunities for hunting of such species as quail, dove and antelope.

Mechanical, off-road vehicle use by dune buggies, four wheelers, or motor bikes is site-destructive, resulting in severe soil movement by wind erosion. Off-road vehicle use should be confined to those areas which are already deteriorated and where intensive management for soil protection can be practiced.

During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June. A few showy summer and fall flowers also occur.

## Wood products

The plant community associated with this site affords little or no wood products.

## Other products

This site is suitable for grazing during all seasons of the year by all kinds and classes of livestock. Where shinnery oak has increased considerably above the amount in the potential plant community cattle loss can occur if grazed during the late bud and early leaf stage. This site responds well to an integrated brush management and grazing management. Brush management is inappropriate in occupied or potential habitat for sand dune lizard.

Mismanagement of this site will cause a decrease in Harvard panicum, sand bluestem, giant dropseed, plains bristleglass, sand paspalum and fourwing saltbush. There will be a corresponding increase in dropseeds, sand sagebrush and shinnery oak. When shinnery oak is not a problem, this site responds best to a system of management that rotates the season of use. Grazing management plans should be design to leave adequate residual cover for lesser prairie chicken nesting.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index----- Ac/AUM

100 - 76----- 2.0 – 4.0

75 – 51----- 3.0 – 6.5

50 – 26----- 5.0 – 12.0

25 – 0----- 12.0 - +

## 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 (SD-3) Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: South Chaves, Eddy, Lea and Otero Counties.

## Other references

### Literature Cited:

1. Sears, W.E., C.M. Britton, D.B. Wester, and R.D. Pettit. 1986. Herbicide conversion of a sand shinnery oak (*Quercus havardii*) community: effects on biomass. J. Range. Manage. 39: 399-403.
2. 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 1/07/02].
3. Villena, F. and J.A. Pfister. 1990. Sand shinnery oak as forage for Angora and Spanish goats. J. Range. Manage. 43: 116-122.

## 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:

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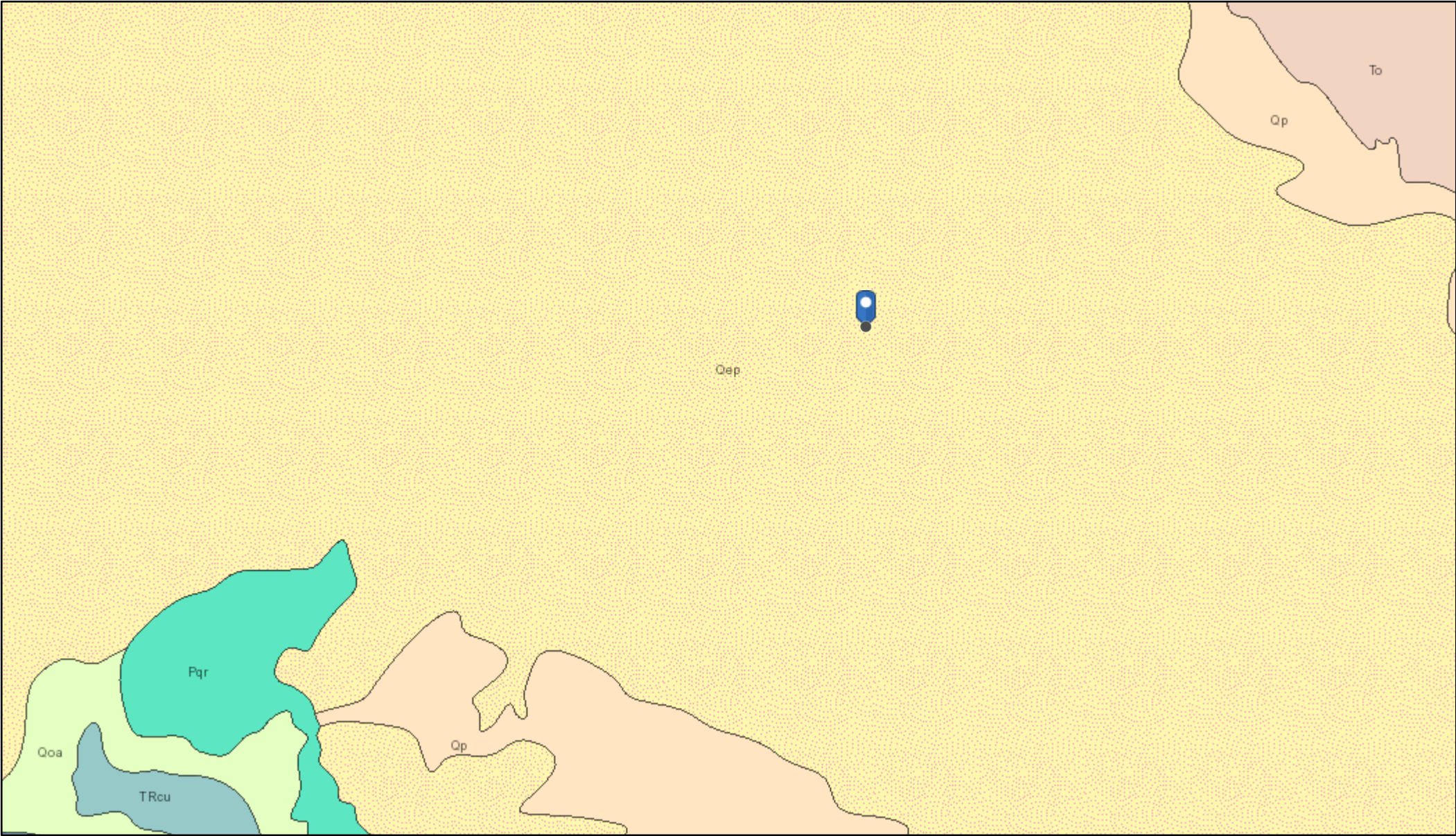
### 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):

- 
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:**
-

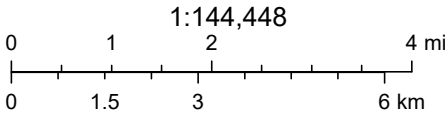




11/18/2022, 6:55:58 AM

Lithologic Units

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



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

## **ATTACHMENT 6**

## Monica Peppin

---

**From:** Dhugal Hanton <vertexresourcegroupusa@gmail.com>  
**Sent:** November 20, 2022 11:49 AM  
**To:** Enviro, OCD, EMNRD; CFO\_Spill, BLM\_NM  
**Cc:** Arsenio Jones; Casey Snow; Clinton Talley; Monica Peppin  
**Subject:** Bola 7 Federal Com #003

All,

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

nAPP2232125330 DOR: 11/16/2022 Site Name: Bola 7 Federal Com #003

This work will be completed on behalf of Matador Production Company

On Wednesday, November 23, 2022, at approximately 8:00 a.m., Monica Peppin will be on site to conduct confirmatory sampling. 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 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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## **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 07, 2022

Monica Peppin

Vertex Resources Services, Inc.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX

RE: Bola 7 Federal Com 003

OrderNo.: 2211D92

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 66 sample(s) on 11/29/2022 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-01 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:00:00 AM

Lab ID: 2211D92-001

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 11:51:23 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/1/2022 11:51:23 PM
Surr: DNOP	95.0	21-129		%Rec	1	12/1/2022 11:51:23 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/1/2022 2:12:59 AM
Surr: BFB	86.8	37.7-212		%Rec	1	12/1/2022 2:12:59 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/1/2022 2:12:59 AM
Toluene	ND	0.050		mg/Kg	1	12/1/2022 2:12:59 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/1/2022 2:12:59 AM
Xylenes, Total	ND	0.10		mg/Kg	1	12/1/2022 2:12:59 AM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	12/1/2022 2:12:59 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 3:52:42 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-02 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:05:00 AM

Lab ID: 2211D92-002

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 12:32:34 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 12:32:34 AM
Surr: DNOP	106	21-129		%Rec	1	12/2/2022 12:32:34 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 3:22:44 AM
Surr: BFB	88.0	37.7-212		%Rec	1	12/1/2022 3:22:44 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 3:22:44 AM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 3:22:44 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 3:22:44 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 3:22:44 AM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	12/1/2022 3:22:44 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/2/2022 4:29:44 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-03 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:10:00 AM

Lab ID: 2211D92-003

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 12:46:14 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2022 12:46:14 AM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 12:46:14 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 4:32:26 AM
Surr: BFB	86.1	37.7-212		%Rec	1	12/1/2022 4:32:26 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 4:32:26 AM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 4:32:26 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 4:32:26 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/1/2022 4:32:26 AM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	12/1/2022 4:32:26 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/2/2022 4:42:05 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-04 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:15:00 AM

Lab ID: 2211D92-004

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 12:59:48 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 12:59:48 AM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 12:59:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2022 4:55:43 AM
Surr: BFB	85.5	37.7-212		%Rec	1	12/1/2022 4:55:43 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/1/2022 4:55:43 AM
Toluene	ND	0.049		mg/Kg	1	12/1/2022 4:55:43 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/1/2022 4:55:43 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/1/2022 4:55:43 AM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	12/1/2022 4:55:43 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 4:54:26 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-05 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:20:00 AM

Lab ID: 2211D92-005

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/2/2022 1:13:08 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/2/2022 1:13:08 AM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 1:13:08 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 10:34:05 AM
Surr: BFB	91.4	37.7-212		%Rec	1	12/1/2022 10:34:05 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 10:34:05 AM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 10:34:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 10:34:05 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 10:34:05 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	12/1/2022 10:34:05 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/2/2022 5:06:47 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-06 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:25:00 AM

Lab ID: 2211D92-006

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/2/2022 1:26:21 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/2/2022 1:26:21 AM
Surr: DNOP	85.3	21-129		%Rec	1	12/2/2022 1:26:21 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 10:57:42 AM
Surr: BFB	92.3	37.7-212		%Rec	1	12/1/2022 10:57:42 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 10:57:42 AM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 10:57:42 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 10:57:42 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 10:57:42 AM
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	12/1/2022 10:57:42 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 5:19:08 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-07 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:30:00 AM

Lab ID: 2211D92-007

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 1:39:26 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 1:39:26 AM
Surr: DNOP	99.5	21-129		%Rec	1	12/2/2022 1:39:26 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 11:21:01 AM
Surr: BFB	92.6	37.7-212		%Rec	1	12/1/2022 11:21:01 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 11:21:01 AM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 11:21:01 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 11:21:01 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 11:21:01 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	12/1/2022 11:21:01 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	160	60		mg/Kg	20	12/2/2022 5:31:29 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-08 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:35:00 AM

Lab ID: 2211D92-008

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 1:52:33 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 1:52:33 AM
Surr: DNOP	113	21-129		%Rec	1	12/2/2022 1:52:33 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 11:44:34 AM
Surr: BFB	90.2	37.7-212		%Rec	1	12/1/2022 11:44:34 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 11:44:34 AM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 11:44:34 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 11:44:34 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 11:44:34 AM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	12/1/2022 11:44:34 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 5:43:50 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-09 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:40:00 AM

Lab ID: 2211D92-009

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 2:18:40 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 2:18:40 AM
Surr: DNOP	127	21-129		%Rec	1	12/2/2022 2:18:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/1/2022 12:08:15 PM
Surr: BFB	87.8	37.7-212		%Rec	1	12/1/2022 12:08:15 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	12/1/2022 12:08:15 PM
Toluene	ND	0.046		mg/Kg	1	12/1/2022 12:08:15 PM
Ethylbenzene	ND	0.046		mg/Kg	1	12/1/2022 12:08:15 PM
Xylenes, Total	ND	0.091		mg/Kg	1	12/1/2022 12:08:15 PM
Surr: 4-Bromofluorobenzene	89.5	70-130		%Rec	1	12/1/2022 12:08:15 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 5:56:10 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-10 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:45:00 AM

Lab ID: 2211D92-010

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 2:31:47 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 2:31:47 AM
Surr: DNOP	113	21-129		%Rec	1	12/2/2022 2:31:47 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 12:31:52 PM
Surr: BFB	89.2	37.7-212		%Rec	1	12/1/2022 12:31:52 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 12:31:52 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 12:31:52 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 12:31:52 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 12:31:52 PM
Surr: 4-Bromofluorobenzene	89.9	70-130		%Rec	1	12/1/2022 12:31:52 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 6:08:31 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-11 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:50:00 AM

Lab ID: 2211D92-011

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 2:45:01 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/2/2022 2:45:01 AM
Surr: DNOP	127	21-129		%Rec	1	12/2/2022 2:45:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 12:55:31 PM
Surr: BFB	91.2	37.7-212		%Rec	1	12/1/2022 12:55:31 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	12/1/2022 12:55:31 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 12:55:31 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 12:55:31 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 12:55:31 PM
Surr: 4-Bromofluorobenzene	89.3	70-130		%Rec	1	12/1/2022 12:55:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 6:20:52 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-12 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 8:55:00 AM

Lab ID: 2211D92-012

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 2:58:03 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 2:58:03 AM
Surr: DNOP	113	21-129		%Rec	1	12/2/2022 2:58:03 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2022 1:19:12 PM
Surr: BFB	87.5	37.7-212		%Rec	1	12/1/2022 1:19:12 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/1/2022 1:19:12 PM
Toluene	ND	0.049		mg/Kg	1	12/1/2022 1:19:12 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/1/2022 1:19:12 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/1/2022 1:19:12 PM
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	12/1/2022 1:19:12 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 10:15:23 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-13 0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:00:00 AM

Lab ID: 2211D92-013

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/2/2022 3:11:01 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/2/2022 3:11:01 AM
Surr: DNOP	144	21-129	S	%Rec	1	12/2/2022 3:11:01 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2022 1:42:51 PM
Surr: BFB	89.7	37.7-212		%Rec	1	12/1/2022 1:42:51 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/1/2022 1:42:51 PM
Toluene	ND	0.049		mg/Kg	1	12/1/2022 1:42:51 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/1/2022 1:42:51 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/1/2022 1:42:51 PM
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	12/1/2022 1:42:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 10:27:43 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-14 2'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:05:00 AM

Lab ID: 2211D92-014

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 3:23:48 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 3:23:48 AM
Surr: DNOP	112	21-129		%Rec	1	12/2/2022 3:23:48 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 2:53:53 PM
Surr: BFB	89.9	37.7-212		%Rec	1	12/1/2022 2:53:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 2:53:53 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 2:53:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 2:53:53 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 2:53:53 PM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	12/1/2022 2:53:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	61		mg/Kg	20	12/2/2022 10:40:04 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-15 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:10:00 AM

Lab ID: 2211D92-015

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/2/2022 3:36:36 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/2/2022 3:36:36 AM
Surr: DNOP	136	21-129	S	%Rec	1	12/2/2022 3:36:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 3:17:34 PM
Surr: BFB	88.6	37.7-212		%Rec	1	12/1/2022 3:17:34 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 3:17:34 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 3:17:34 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 3:17:34 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 3:17:34 PM
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	12/1/2022 3:17:34 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 10:52:24 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-16 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:15:00 AM

Lab ID: 2211D92-016

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 3:49:59 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 3:49:59 AM
Surr: DNOP	109	21-129		%Rec	1	12/2/2022 3:49:59 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 3:41:04 PM
Surr: BFB	91.0	37.7-212		%Rec	1	12/1/2022 3:41:04 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 3:41:04 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 3:41:04 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 3:41:04 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 3:41:04 PM
Surr: 4-Bromofluorobenzene	92.7	70-130		%Rec	1	12/1/2022 3:41:04 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 11:04:45 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-17 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:20:00 AM

Lab ID: 2211D92-017

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 4:03:36 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 4:03:36 AM
Surr: DNOP	97.2	21-129		%Rec	1	12/2/2022 4:03:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 4:04:37 PM
Surr: BFB	90.0	37.7-212		%Rec	1	12/1/2022 4:04:37 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 4:04:37 PM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 4:04:37 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 4:04:37 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 4:04:37 PM
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	12/1/2022 4:04:37 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/2/2022 11:17:05 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-18 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:25:00 AM

Lab ID: 2211D92-018

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 4:17:28 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 4:17:28 AM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 4:17:28 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/1/2022 4:28:13 PM
Surr: BFB	89.8	37.7-212		%Rec	1	12/1/2022 4:28:13 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	12/1/2022 4:28:13 PM
Toluene	ND	0.046		mg/Kg	1	12/1/2022 4:28:13 PM
Ethylbenzene	ND	0.046		mg/Kg	1	12/1/2022 4:28:13 PM
Xylenes, Total	ND	0.091		mg/Kg	1	12/1/2022 4:28:13 PM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	12/1/2022 4:28:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/2/2022 11:54:08 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-19 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:30:00 AM

Lab ID: 2211D92-019

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 4:30:50 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/2/2022 4:30:50 AM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 4:30:50 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 4:51:48 PM
Surr: BFB	89.4	37.7-212		%Rec	1	12/1/2022 4:51:48 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 4:51:48 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 4:51:48 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 4:51:48 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 4:51:48 PM
Surr: 4-Bromofluorobenzene	90.8	70-130		%Rec	1	12/1/2022 4:51:48 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 12:06:29 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-20 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:35:00 AM

Lab ID: 2211D92-020

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/2/2022 4:44:51 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/2/2022 4:44:51 AM
Surr: DNOP	125	21-129		%Rec	1	12/2/2022 4:44:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 5:15:28 PM
Surr: BFB	89.4	37.7-212		%Rec	1	12/1/2022 5:15:28 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 5:15:28 PM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 5:15:28 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 5:15:28 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/1/2022 5:15:28 PM
Surr: 4-Bromofluorobenzene	90.0	70-130		%Rec	1	12/1/2022 5:15:28 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 12:18:50 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-21 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:40:00 AM

Lab ID: 2211D92-021

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 11:52:35 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2022 11:52:35 AM
Surr: DNOP	104	21-129		%Rec	1	12/1/2022 11:52:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2022 9:24:00 PM
Surr: BFB	95.7	37.7-212		%Rec	1	12/1/2022 9:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 9:24:00 PM
Toluene	ND	0.049		mg/Kg	1	12/1/2022 9:24:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/1/2022 9:24:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/1/2022 9:24:00 PM
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	12/1/2022 9:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 12:31:11 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-22 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:45:00 AM

Lab ID: 2211D92-022

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/1/2022 12:34:59 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/1/2022 12:34:59 PM
Surr: DNOP	118	21-129		%Rec	1	12/1/2022 12:34:59 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 10:24:00 PM
Surr: BFB	99.7	37.7-212		%Rec	1	12/1/2022 10:24:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 10:24:00 PM
Toluene	ND	0.048		mg/Kg	1	12/1/2022 10:24:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/1/2022 10:24:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/1/2022 10:24:00 PM
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	12/1/2022 10:24:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 12:43:31 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-23 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:50:00 AM

Lab ID: 2211D92-023

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 12:49:01 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/1/2022 12:49:01 PM
Surr: DNOP	119	21-129		%Rec	1	12/1/2022 12:49:01 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 11:23:00 PM
Surr: BFB	93.2	37.7-212		%Rec	1	12/1/2022 11:23:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/1/2022 11:23:00 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 11:23:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 11:23:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2022 11:23:00 PM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	12/1/2022 11:23:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 12:55:52 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-24 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 9:55:00 AM

Lab ID: 2211D92-024

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/1/2022 1:03:04 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/1/2022 1:03:04 PM
Surr: DNOP	134	21-129	S	%Rec	1	12/1/2022 1:03:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 11:42:00 PM
Surr: BFB	89.4	37.7-212		%Rec	1	12/1/2022 11:42:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/1/2022 11:42:00 PM
Toluene	ND	0.047		mg/Kg	1	12/1/2022 11:42:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2022 11:42:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/1/2022 11:42:00 PM
Surr: 4-Bromofluorobenzene	89.7	70-130		%Rec	1	12/1/2022 11:42:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 1:08:12 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-25 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:00:00 AM

Lab ID: 2211D92-025

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 1:17:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2022 1:17:19 PM
Surr: DNOP	108	21-129		%Rec	1	12/1/2022 1:17:19 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/2/2022 12:02:00 AM
Surr: BFB	93.5	37.7-212		%Rec	1	12/2/2022 12:02:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 12:02:00 AM
Toluene	ND	0.048		mg/Kg	1	12/2/2022 12:02:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/2/2022 12:02:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/2/2022 12:02:00 AM
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	12/2/2022 12:02:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	59		mg/Kg	20	12/3/2022 1:20:33 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-26 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:05:00 AM

Lab ID: 2211D92-026

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/1/2022 1:31:25 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/1/2022 1:31:25 PM
Surr: DNOP	133	21-129	S	%Rec	1	12/1/2022 1:31:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/2/2022 12:22:00 AM
Surr: BFB	101	37.7-212		%Rec	1	12/2/2022 12:22:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 12:22:00 AM
Toluene	ND	0.047		mg/Kg	1	12/2/2022 12:22:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/2/2022 12:22:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/2/2022 12:22:00 AM
Surr: 4-Bromofluorobenzene	91.4	70-130		%Rec	1	12/2/2022 12:22:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 1:32:53 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-27 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:10:00 AM

Lab ID: 2211D92-027

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 1:59:25 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2022 1:59:25 PM
Surr: DNOP	124	21-129		%Rec	1	12/1/2022 1:59:25 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/2/2022 12:41:00 AM
Surr: BFB	91.3	37.7-212		%Rec	1	12/2/2022 12:41:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 12:41:00 AM
Toluene	ND	0.048		mg/Kg	1	12/2/2022 12:41:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/2/2022 12:41:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/2/2022 12:41:00 AM
Surr: 4-Bromofluorobenzene	92.7	70-130		%Rec	1	12/2/2022 12:41:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	12/3/2022 1:45:14 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-28 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:15:00 AM

Lab ID: 2211D92-028

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 2:13:33 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/1/2022 2:13:33 PM
Surr: DNOP	131	21-129	S	%Rec	1	12/1/2022 2:13:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/2/2022 1:01:00 AM
Surr: BFB	88.5	37.7-212		%Rec	1	12/2/2022 1:01:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 1:01:00 AM
Toluene	ND	0.048		mg/Kg	1	12/2/2022 1:01:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/2/2022 1:01:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/2/2022 1:01:00 AM
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	12/2/2022 1:01:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 2:02:03 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-29 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:20:00 AM

Lab ID: 2211D92-029

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 2:27:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2022 2:27:40 PM
Surr: DNOP	119	21-129		%Rec	1	12/1/2022 2:27:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 1:21:00 AM
Surr: BFB	89.6	37.7-212		%Rec	1	12/2/2022 1:21:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 1:21:00 AM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 1:21:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 1:21:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 1:21:00 AM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	12/2/2022 1:21:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 2:39:19 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-30 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:25:00 AM

Lab ID: 2211D92-030

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 2:41:44 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/1/2022 2:41:44 PM
Surr: DNOP	134	21-129	S	%Rec	1	12/1/2022 2:41:44 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/2/2022 1:41:00 AM
Surr: BFB	94.5	37.7-212		%Rec	1	12/2/2022 1:41:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 1:41:00 AM
Toluene	ND	0.048		mg/Kg	1	12/2/2022 1:41:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/2/2022 1:41:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/2/2022 1:41:00 AM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	12/2/2022 1:41:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 3:16:33 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-31 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:30:00 AM

Lab ID: 2211D92-031

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 2:55:53 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2022 2:55:53 PM
Surr: DNOP	113	21-129		%Rec	1	12/1/2022 2:55:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/2/2022 2:20:00 AM
Surr: BFB	99.0	37.7-212		%Rec	1	12/2/2022 2:20:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/2/2022 2:20:00 AM
Toluene	ND	0.047		mg/Kg	1	12/2/2022 2:20:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/2/2022 2:20:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/2/2022 2:20:00 AM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	12/2/2022 2:20:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 3:28:58 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-32 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:35:00 AM

Lab ID: 2211D92-032

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 3:09:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2022 3:09:53 PM
Surr: DNOP	111	21-129		%Rec	1	12/1/2022 3:09:53 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/2/2022 2:40:00 AM
Surr: BFB	93.2	37.7-212		%Rec	1	12/2/2022 2:40:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/2/2022 2:40:00 AM
Toluene	ND	0.046		mg/Kg	1	12/2/2022 2:40:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/2/2022 2:40:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	12/2/2022 2:40:00 AM
Surr: 4-Bromofluorobenzene	92.9	70-130		%Rec	1	12/2/2022 2:40:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 4:06:12 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-33 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:40:00 AM

Lab ID: 2211D92-033

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/1/2022 3:23:49 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/1/2022 3:23:49 PM
Surr: DNOP	119	21-129		%Rec	1	12/1/2022 3:23:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 2:59:00 AM
Surr: BFB	92.6	37.7-212		%Rec	1	12/2/2022 2:59:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 2:59:00 AM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 2:59:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 2:59:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/2/2022 2:59:00 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	12/2/2022 2:59:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 4:18:36 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-34 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:45:00 AM

Lab ID: 2211D92-034

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 3:37:50 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2022 3:37:50 PM
Surr: DNOP	119	21-129		%Rec	1	12/1/2022 3:37:50 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 3:19:00 AM
Surr: BFB	89.7	37.7-212		%Rec	1	12/2/2022 3:19:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 3:19:00 AM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 3:19:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 3:19:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 3:19:00 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	12/2/2022 3:19:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 4:31:01 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-35 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:50:00 AM

Lab ID: 2211D92-035

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 3:52:05 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2022 3:52:05 PM
Surr: DNOP	117	21-129		%Rec	1	12/1/2022 3:52:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/2/2022 3:39:00 AM
Surr: BFB	92.2	37.7-212		%Rec	1	12/2/2022 3:39:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/2/2022 3:39:00 AM
Toluene	ND	0.046		mg/Kg	1	12/2/2022 3:39:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/2/2022 3:39:00 AM
Xylenes, Total	ND	0.091		mg/Kg	1	12/2/2022 3:39:00 AM
Surr: 4-Bromofluorobenzene	92.1	70-130		%Rec	1	12/2/2022 3:39:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 4:43:25 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-36 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 10:55:00 AM

Lab ID: 2211D92-036

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/1/2022 4:06:05 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/1/2022 4:06:05 PM
Surr: DNOP	113	21-129		%Rec	1	12/1/2022 4:06:05 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/2/2022 3:59:00 AM
Surr: BFB	89.4	37.7-212		%Rec	1	12/2/2022 3:59:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 3:59:00 AM
Toluene	ND	0.047		mg/Kg	1	12/2/2022 3:59:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/2/2022 3:59:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/2/2022 3:59:00 AM
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	12/2/2022 3:59:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 4:55:50 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-37 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:00:00 AM

Lab ID: 2211D92-037

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/1/2022 4:20:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/1/2022 4:20:04 PM
Surr: DNOP	115	21-129		%Rec	1	12/1/2022 4:20:04 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 4:18:00 AM
Surr: BFB	92.7	37.7-212		%Rec	1	12/2/2022 4:18:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 4:18:00 AM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 4:18:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 4:18:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 4:18:00 AM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	12/2/2022 4:18:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	61		mg/Kg	20	12/4/2022 5:08:15 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-38 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:05:00 AM

Lab ID: 2211D92-038

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 4:34:02 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/1/2022 4:34:02 PM
Surr: DNOP	123	21-129		%Rec	1	12/1/2022 4:34:02 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 4:38:00 AM
Surr: BFB	95.3	37.7-212		%Rec	1	12/2/2022 4:38:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/2/2022 4:38:00 AM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 4:38:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 4:38:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/2/2022 4:38:00 AM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	12/2/2022 4:38:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 5:20:40 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-39 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:10:00 AM

Lab ID: 2211D92-039

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 4:48:00 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2022 4:48:00 PM
Surr: DNOP	131	21-129	S	%Rec	1	12/1/2022 4:48:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 4:58:00 AM
Surr: BFB	101	37.7-212		%Rec	1	12/2/2022 4:58:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 4:58:00 AM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 4:58:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 4:58:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 4:58:00 AM
Surr: 4-Bromofluorobenzene	98.4	70-130		%Rec	1	12/2/2022 4:58:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	59		mg/Kg	20	12/4/2022 5:33:05 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-40 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:15:00 AM

Lab ID: 2211D92-040

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/1/2022 5:01:49 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2022 5:01:49 PM
Surr: DNOP	138	21-129	S	%Rec	1	12/1/2022 5:01:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/2/2022 5:17:00 AM
Surr: BFB	98.0	37.7-212		%Rec	1	12/2/2022 5:17:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/2/2022 5:17:00 AM
Toluene	ND	0.046		mg/Kg	1	12/2/2022 5:17:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/2/2022 5:17:00 AM
Xylenes, Total	ND	0.091		mg/Kg	1	12/2/2022 5:17:00 AM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	12/2/2022 5:17:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 5:45:30 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-41 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:20:00 AM

Lab ID: 2211D92-041

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/3/2022 2:44:23 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/3/2022 2:44:23 AM
Surr: DNOP	120	21-129		%Rec	1	12/3/2022 2:44:23 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 4:10:00 PM
Surr: BFB	96.5	37.7-212		%Rec	1	12/1/2022 4:10:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/3/2022 12:59:00 AM
Toluene	ND	0.047		mg/Kg	1	12/3/2022 12:59:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/3/2022 12:59:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/3/2022 12:59:00 AM
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	12/3/2022 12:59:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 5:57:55 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-42 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:25:00 AM

Lab ID: 2211D92-042

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/5/2022 2:43:20 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/5/2022 2:43:20 PM
Surr: DNOP	120	21-129		%Rec	1	12/5/2022 2:43:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/1/2022 4:30:00 PM
Surr: BFB	97.7	37.7-212		%Rec	1	12/1/2022 4:30:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/3/2022 1:19:00 AM
Toluene	ND	0.050		mg/Kg	1	12/3/2022 1:19:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/3/2022 1:19:00 AM
Xylenes, Total	ND	0.10		mg/Kg	1	12/3/2022 1:19:00 AM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	12/3/2022 1:19:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 6:35:09 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-43 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:30:00 AM

Lab ID: 2211D92-043

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/3/2022 3:35:14 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/3/2022 3:35:14 AM
Surr: DNOP	113	21-129		%Rec	1	12/3/2022 3:35:14 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 5:09:00 PM
Surr: BFB	93.7	37.7-212		%Rec	1	12/1/2022 5:09:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/3/2022 1:58:00 AM
Toluene	ND	0.047		mg/Kg	1	12/3/2022 1:58:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/3/2022 1:58:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/3/2022 1:58:00 AM
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	12/3/2022 1:58:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 6:47:34 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-44 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:35:00 AM

Lab ID: 2211D92-044

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/3/2022 3:47:56 AM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	12/3/2022 3:47:56 AM
Surr: DNOP	132	21-129	S	%Rec	1	12/3/2022 3:47:56 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 5:28:00 PM
Surr: BFB	93.7	37.7-212		%Rec	1	12/1/2022 5:28:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/3/2022 2:18:00 AM
Toluene	ND	0.047		mg/Kg	1	12/3/2022 2:18:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/3/2022 2:18:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/3/2022 2:18:00 AM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	12/3/2022 2:18:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 6:59:59 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-45 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:40:00 AM

Lab ID: 2211D92-045

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/3/2022 4:00:36 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/3/2022 4:00:36 AM
Surr: DNOP	111	21-129		%Rec	1	12/3/2022 4:00:36 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/1/2022 5:48:00 PM
Surr: BFB	92.0	37.7-212		%Rec	1	12/1/2022 5:48:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/3/2022 2:37:00 AM
Toluene	ND	0.048		mg/Kg	1	12/3/2022 2:37:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/3/2022 2:37:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/3/2022 2:37:00 AM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	12/3/2022 2:37:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	59		mg/Kg	20	12/4/2022 7:12:24 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-46 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:45:00 AM

Lab ID: 2211D92-046

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	13		mg/Kg	1	12/3/2022 4:13:14 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/3/2022 4:13:14 AM
Surr: DNOP	122	21-129		%Rec	1	12/3/2022 4:13:14 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2022 6:08:00 PM
Surr: BFB	92.1	37.7-212		%Rec	1	12/1/2022 6:08:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/3/2022 2:57:00 AM
Toluene	ND	0.047		mg/Kg	1	12/3/2022 2:57:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/3/2022 2:57:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/3/2022 2:57:00 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	12/3/2022 2:57:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 7:24:48 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-47 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:50:00 AM

Lab ID: 2211D92-047

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/3/2022 4:25:51 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/3/2022 4:25:51 AM
Surr: DNOP	111	21-129		%Rec	1	12/3/2022 4:25:51 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/1/2022 6:27:00 PM
Surr: BFB	93.1	37.7-212		%Rec	1	12/1/2022 6:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.023		mg/Kg	1	12/3/2022 3:16:00 AM
Toluene	ND	0.046		mg/Kg	1	12/3/2022 3:16:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/3/2022 3:16:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	12/3/2022 3:16:00 AM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	12/3/2022 3:16:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 7:37:13 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-48 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 11:55:00 AM

Lab ID: 2211D92-048

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/3/2022 4:38:29 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/3/2022 4:38:29 AM
Surr: DNOP	110	21-129		%Rec	1	12/3/2022 4:38:29 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/1/2022 6:47:00 PM
Surr: BFB	91.3	37.7-212		%Rec	1	12/1/2022 6:47:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/3/2022 3:36:00 AM
Toluene	ND	0.050		mg/Kg	1	12/3/2022 3:36:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/3/2022 3:36:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/3/2022 3:36:00 AM
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	12/3/2022 3:36:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 8:14:27 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-49 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:00:00 PM

Lab ID: 2211D92-049

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/3/2022 5:03:40 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/3/2022 5:03:40 AM
Surr: DNOP	105	21-129		%Rec	1	12/3/2022 5:03:40 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/1/2022 7:07:00 PM
Surr: BFB	94.5	37.7-212		%Rec	1	12/1/2022 7:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/3/2022 3:56:00 AM
Toluene	ND	0.050		mg/Kg	1	12/3/2022 3:56:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/3/2022 3:56:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/3/2022 3:56:00 AM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	12/3/2022 3:56:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 9:16:29 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BS22-50 0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:05:00 PM

Lab ID: 2211D92-050

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/3/2022 5:16:32 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/3/2022 5:16:32 AM
Surr: DNOP	108	21-129		%Rec	1	12/3/2022 5:16:32 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2022 7:27:00 PM
Surr: BFB	99.1	37.7-212		%Rec	1	12/1/2022 7:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	12/3/2022 4:15:00 AM
Toluene	ND	0.049		mg/Kg	1	12/3/2022 4:15:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/3/2022 4:15:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/3/2022 4:15:00 AM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	12/3/2022 4:15:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 9:28:54 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-01 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:10:00 PM

Lab ID: 2211D92-051

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 5:05:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 5:05:20 PM
Surr: DNOP	87.3	21-129		%Rec	1	12/2/2022 5:05:20 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 12:12:00 PM
Surr: BFB	95.3	37.7-212		%Rec	1	12/2/2022 12:12:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 12:12:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 12:12:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 12:12:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 12:12:00 PM
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	1	12/2/2022 12:12:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 9:41:20 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-02 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:15:00 PM

Lab ID: 2211D92-052

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 5:46:33 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 5:46:33 PM
Surr: DNOP	104	21-129		%Rec	1	12/2/2022 5:46:33 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 1:11:00 PM
Surr: BFB	89.6	37.7-212		%Rec	1	12/2/2022 1:11:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 1:11:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 1:11:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 1:11:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 1:11:00 PM
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	12/2/2022 1:11:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 9:53:44 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 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-03 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:20:00 PM

Lab ID: 2211D92-053

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 6:00:08 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2022 6:00:08 PM
Surr: DNOP	102	21-129		%Rec	1	12/2/2022 6:00:08 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 2:10:00 PM
Surr: BFB	99.7	37.7-212		%Rec	1	12/2/2022 2:10:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 2:10:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 2:10:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 2:10:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 2:10:00 PM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	12/2/2022 2:10:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 10:06:09 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-04 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:25:00 PM

Lab ID: 2211D92-054

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 6:13:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 6:13:46 PM
Surr: DNOP	113	21-129		%Rec	1	12/2/2022 6:13:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 2:29:00 PM
Surr: BFB	98.3	37.7-212		%Rec	1	12/2/2022 2:29:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 2:29:00 PM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 2:29:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 2:29:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 2:29:00 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	12/2/2022 2:29:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	61		mg/Kg	20	12/4/2022 10:18:34 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-05 0.5-2'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:30:00 PM

Lab ID: 2211D92-055

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 6:27:22 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2022 6:27:22 PM
Surr: DNOP	109	21-129		%Rec	1	12/2/2022 6:27:22 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 2:49:00 PM
Surr: BFB	99.2	37.7-212		%Rec	1	12/2/2022 2:49:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 2:49:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 2:49:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 2:49:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 2:49:00 PM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	12/2/2022 2:49:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 10:30:58 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-06 0-2'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:35:00 PM

Lab ID: 2211D92-056

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 6:54:22 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 6:54:22 PM
Surr: DNOP	105	21-129		%Rec	1	12/2/2022 6:54:22 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 3:09:00 PM
Surr: BFB	101	37.7-212		%Rec	1	12/2/2022 3:09:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 3:09:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 3:09:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 3:09:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 3:09:00 PM
Surr: 4-Bromofluorobenzene	98.2	70-130		%Rec	1	12/2/2022 3:09:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 10:43:23 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-07 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:40:00 PM

Lab ID: 2211D92-057

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 7:07:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 7:07:45 PM
Surr: DNOP	103	21-129		%Rec	1	12/2/2022 7:07:45 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 3:28:00 PM
Surr: BFB	94.5	37.7-212		%Rec	1	12/2/2022 3:28:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 3:28:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 3:28:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 3:28:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 3:28:00 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	12/2/2022 3:28:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 11:20:37 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-08 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:45:00 PM

Lab ID: 2211D92-058

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 7:21:12 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/2/2022 7:21:12 PM
Surr: DNOP	99.5	21-129		%Rec	1	12/2/2022 7:21:12 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 3:48:00 PM
Surr: BFB	96.0	37.7-212		%Rec	1	12/2/2022 3:48:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 3:48:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 3:48:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 3:48:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 3:48:00 PM
Surr: 4-Bromofluorobenzene	98.7	70-130		%Rec	1	12/2/2022 3:48:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 11:33:01 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-09 0-0.5'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:50:00 PM

Lab ID: 2211D92-059

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 7:34:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 7:34:35 PM
Surr: DNOP	99.0	21-129		%Rec	1	12/2/2022 7:34:35 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 4:08:00 PM
Surr: BFB	94.0	37.7-212		%Rec	1	12/2/2022 4:08:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 4:08:00 PM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 4:08:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 4:08:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 4:08:00 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	12/2/2022 4:08:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 11:45:26 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-10 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 12:55:00 PM

Lab ID: 2211D92-060

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 7:47:56 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2022 7:47:56 PM
Surr: DNOP	101	21-129		%Rec	1	12/2/2022 7:47:56 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 4:27:00 PM
Surr: BFB	88.2	37.7-212		%Rec	1	12/2/2022 4:27:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 4:27:00 PM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 4:27:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 4:27:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 4:27:00 PM
Surr: 4-Bromofluorobenzene	91.2	70-130		%Rec	1	12/2/2022 4:27:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/4/2022 11:57:51 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-11 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:00:00 PM

Lab ID: 2211D92-061

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 8:01:15 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 8:01:15 PM
Surr: DNOP	101	21-129		%Rec	1	12/2/2022 8:01:15 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 5:07:00 PM
Surr: BFB	93.0	37.7-212		%Rec	1	12/2/2022 5:07:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 5:07:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 5:07:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 5:07:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 5:07:00 PM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	12/2/2022 5:07:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 12:10:15 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-12 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:05:00 PM

Lab ID: 2211D92-062

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 8:14:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2022 8:14:24 PM
Surr: DNOP	104	21-129		%Rec	1	12/2/2022 8:14:24 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 5:26:00 PM
Surr: BFB	92.9	37.7-212		%Rec	1	12/2/2022 5:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 5:26:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 5:26:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 5:26:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 5:26:00 PM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	12/2/2022 5:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 12:22:40 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-13 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:10:00 PM

Lab ID: 2211D92-063

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 8:27:37 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 8:27:37 PM
Surr: DNOP	119	21-129		%Rec	1	12/2/2022 8:27:37 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 5:46:00 PM
Surr: BFB	93.8	37.7-212		%Rec	1	12/2/2022 5:46:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 5:46:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 5:46:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 5:46:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 5:46:00 PM
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	12/2/2022 5:46:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 12:35:05 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-14 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:15:00 PM

Lab ID: 2211D92-064

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	14		mg/Kg	1	12/2/2022 8:40:48 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2022 8:40:48 PM
Surr: DNOP	105	21-129		%Rec	1	12/2/2022 8:40:48 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/2/2022 6:06:00 PM
Surr: BFB	88.7	37.7-212		%Rec	1	12/2/2022 6:06:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 6:06:00 PM
Toluene	ND	0.049		mg/Kg	1	12/2/2022 6:06:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/2/2022 6:06:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 6:06:00 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	12/2/2022 6:06:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 12:47:30 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-15 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:20:00 PM

Lab ID: 2211D92-065

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 8:54:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/2/2022 8:54:34 PM
Surr: DNOP	95.6	21-129		%Rec	1	12/2/2022 8:54:34 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 6:26:00 PM
Surr: BFB	93.5	37.7-212		%Rec	1	12/2/2022 6:26:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 6:26:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 6:26:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 6:26:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/2/2022 6:26:00 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	12/2/2022 6:26:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 12:59:55 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.		

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## Analytical Report

Lab Order 2211D92

Date Reported: 12/7/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: WS22-16 0-0.25'

Project: Bola 7 Federal Com 003

Collection Date: 11/23/2022 1:25:00 PM

Lab ID: 2211D92-066

Matrix: SOIL

Received Date: 11/29/2022 7:21:00 AM

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	15		mg/Kg	1	12/2/2022 9:08:43 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/2/2022 9:08:43 PM
Surr: DNOP	108	21-129		%Rec	1	12/2/2022 9:08:43 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/2/2022 6:45:00 PM
Surr: BFB	94.9	37.7-212		%Rec	1	12/2/2022 6:45:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	12/2/2022 6:45:00 PM
Toluene	ND	0.050		mg/Kg	1	12/2/2022 6:45:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/2/2022 6:45:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/2/2022 6:45:00 PM
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	12/2/2022 6:45:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>JTT</b>
Chloride	ND	60		mg/Kg	20	12/5/2022 1:12:19 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.		

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>MB-71819</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71819</b>	RunNo: <b>92984</b>								
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3348996</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-71819</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71819</b>	RunNo: <b>92984</b>								
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3348997</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	92.6	90	110			

Sample ID: <b>MB-71833</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71833</b>	RunNo: <b>92984</b>								
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349028</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-71833</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71833</b>	RunNo: <b>92984</b>								
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349029</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	93.4	90	110			

Sample ID: <b>MB-71836</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71836</b>	RunNo: <b>93004</b>								
Prep Date: <b>12/4/2022</b>	Analysis Date: <b>12/4/2022</b>	SeqNo: <b>3349070</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-71836</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71836</b>	RunNo: <b>93004</b>								
Prep Date: <b>12/4/2022</b>	Analysis Date: <b>12/4/2022</b>	SeqNo: <b>3349071</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	90.5	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical 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#: 2211D92

07-Dec-22

Client: Vertex Resources Services, Inc.  
Project: Bola 7 Federal Com 003

Sample ID: <b>MB-71837</b>		SampType: <b>MBLK</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>		Batch ID: <b>71837</b>		RunNo: <b>93004</b>						
Prep Date: <b>12/4/2022</b>		Analysis Date: <b>12/4/2022</b>		SeqNo: <b>3349100</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-71837</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>71837</b>		RunNo: <b>93004</b>						
Prep Date: <b>12/4/2022</b>		Analysis Date: <b>12/4/2022</b>		SeqNo: <b>3349101</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	91.3	90	110			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical 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#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>MB-71813</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>71813</b>			RunNo: <b>92982</b>						
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>			SeqNo: <b>3348099</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.9		10.00		99.3	21	129			

Sample ID: <b>LCS-71813</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>71813</b>			RunNo: <b>92982</b>						
Prep Date: <b>12/2/2022</b>	Analysis Date: <b>12/2/2022</b>			SeqNo: <b>3348100</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.2	21	129			

Sample ID: <b>MB-71804</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>71804</b>			RunNo: <b>92986</b>						
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/2/2022</b>			SeqNo: <b>3348204</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	8.8		10.00		87.7	21	129			

Sample ID: <b>MB-71777</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>71777</b>			RunNo: <b>93000</b>						
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>			SeqNo: <b>3348708</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	10		10.00		101	21	129			

Sample ID: <b>LCS-71777</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>71777</b>			RunNo: <b>93000</b>						
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>			SeqNo: <b>3348709</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	15	50.00	0	106	64.4	127			
Surr: DNOP	5.2		5.000		103	21	129			

Sample ID: <b>2211D92-021AMS</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>BS22-21 0.25'</b>	Batch ID: <b>71777</b>			RunNo: <b>93000</b>						
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>			SeqNo: <b>3348711</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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>2211D92-021AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-21 0.25'</b>	Batch ID: <b>71777</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3348711</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	14	46.13	0	121	36.1	154			
Surr: DNOP	5.4		4.613		117	21	129			

Sample ID: <b>2211D92-021AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-21 0.25'</b>	Batch ID: <b>71777</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3348712</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	15	49.46	0	98.7	36.1	154	13.8	33.9	
Surr: DNOP	4.9		4.946		98.4	21	129	0	0	

Sample ID: <b>MB-71768</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71768</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3348760</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	10		10.00		104	21	129			

Sample ID: <b>LCS-71768</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71768</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3348761</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	15	50.00	0	93.3	64.4	127			
Surr: DNOP	5.3		5.000		106	21	129			

Sample ID: <b>2211D92-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-01 0.5'</b>	Batch ID: <b>71768</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3348763</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	15	49.36	0	99.7	36.1	154			
Surr: DNOP	4.8		4.936		96.6	21	129			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of 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#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>2211D92-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-01 0.5'</b>	Batch ID: <b>71768</b>	RunNo: <b>93000</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3348764</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	14	45.75	0	96.8	36.1	154	10.6	33.9	
Surr: DNOP	4.7		4.575		102	21	129	0	0	

Sample ID: <b>MB-71804</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71804</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349661</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	9.1		10.00		91.0	21	129			

Sample ID: <b>LCS-71804</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71804</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349664</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	15	50.00	0	86.2	64.4	127			
Surr: DNOP	4.4		5.000		87.5	21	129			

Sample ID: <b>2211D92-051AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WS22-01 0-0.5'</b>	Batch ID: <b>71804</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349666</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	14	47.26	0	92.6	36.1	154			
Surr: DNOP	4.7		4.726		100	21	129			

Sample ID: <b>2211D92-051AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>WS22-01 0-0.5'</b>	Batch ID: <b>71804</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349667</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	15	50.10	0	95.6	36.1	154	8.99	33.9	
Surr: DNOP	5.2		5.010		104	21	129	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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>MB-71809</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71809</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/3/2022</b>	SeqNo: <b>3349706</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	11		10.00		105	21	129			

Sample ID: <b>LCS-71809</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71809</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/3/2022</b>	SeqNo: <b>3349707</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	15	50.00	0	95.5	64.4	127			
Surr: DNOP	5.0		5.000		99.1	21	129			

Sample ID: <b>2211D92-041AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-41 0.25'</b>	Batch ID: <b>71809</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/3/2022</b>	SeqNo: <b>3349709</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	14	47.66	0	116	36.1	154			
Surr: DNOP	5.6		4.766		117	21	129			

Sample ID: <b>2211D92-041AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BS22-41 0.25'</b>	Batch ID: <b>71809</b>	RunNo: <b>92982</b>								
Prep Date: <b>12/1/2022</b>	Analysis Date: <b>12/3/2022</b>	SeqNo: <b>3349710</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	14	45.87	0	103	36.1	154	16.3	33.9	
Surr: DNOP	5.1		4.587		112	21	129	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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>MB-71745</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345674</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	870		1000		87.5	37.7	212			

Sample ID: <b>lcs-71745</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345675</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	5.0	25.00	0	90.9	72.3	137			
Surr: BFB	1800		1000		184	37.7	212			

Sample ID: <b>2211d92-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS22-01 0.5'</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345677</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	5.0	24.98	0	91.4	70	130			
Surr: BFB	1800		999.0		182	37.7	212			

Sample ID: <b>2211d92-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS22-01 0.5'</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345678</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	5.0	24.88	0	96.7	70	130	5.26	20	
Surr: BFB	1900		995.0		188	37.7	212	0	0	

Sample ID: <b>lcs-71755</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347440</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	88.6	72.3	137			
Surr: BFB	2100		1000		208	37.7	212			

Sample ID: <b>mb-71755</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347441</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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>mb-71755</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347441</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	950		1000		94.6	37.7	212			

Sample ID: <b>2211D92-021ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS22-21 0.25'</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347443</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	4.9	24.39	0	90.2	70	130			
Surr: BFB	2100		975.6		212	37.7	212			

Sample ID: <b>2211D92-021amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BS22-21 0.25'</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347444</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	4.9	24.27	0	90.0	70	130	0.753	20	
Surr: BFB	2100		970.9		216	37.7	212	0	0	S

Sample ID: <b>lcs-71774</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71774</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347464</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	88.8	72.3	137			
Surr: BFB	2100		1000		205	37.7	212			

Sample ID: <b>mb-71774</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71774</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347465</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		93.4	37.7	212			

Sample ID: <b>lcs-71778</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71778</b>	RunNo: <b>93006</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349255</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#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>lcs-71778</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>71778</b>				RunNo: <b>93006</b>					
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>				SeqNo: <b>3349255</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	87.0	72.3	137			
Surr: BFB	2000		1000		204	37.7	212			

Sample ID: <b>mb-71778</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>71778</b>				RunNo: <b>93006</b>					
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>				SeqNo: <b>3349256</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	950		1000		95.0	37.7	212			

Sample ID: <b>2211D92-051ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>WS22-01 0-0.5'</b>	Batch ID: <b>71778</b>				RunNo: <b>93006</b>					
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>				SeqNo: <b>3349258</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	5.0	24.95	0	92.2	70	130			
Surr: BFB	2100		998.0		214	37.7	212			S

Sample ID: <b>2211D92-051amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>WS22-01 0-0.5'</b>	Batch ID: <b>71778</b>				RunNo: <b>93006</b>					
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>				SeqNo: <b>3349259</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	24.83	0	83.1	70	130	10.9	20	
Surr: BFB	2100		993.0		210	37.7	212	0	0	

**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#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>mb-71745</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345717</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	70	130			

Sample ID: <b>LCS-71745</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345718</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	87.0	80	120			
Toluene	0.88	0.050	1.000	0	88.2	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.5	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.6	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.5	70	130			

Sample ID: <b>2211d92-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS22-02 0.5'</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345721</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9416	0	94.3	68.8	120			
Toluene	0.93	0.047	0.9416	0	99.2	73.6	124			
Ethylbenzene	0.93	0.047	0.9416	0	98.7	72.7	129			
Xylenes, Total	2.8	0.094	2.825	0.01787	98.6	75.7	126			
Surr: 4-Bromofluorobenzene	0.85		0.9416		90.7	70	130			

Sample ID: <b>2211d92-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS22-02 0.5'</b>	Batch ID: <b>71745</b>	RunNo: <b>92922</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3345722</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	0.9506	0	96.5	68.8	120	3.29	20	
Toluene	0.93	0.048	0.9506	0	98.1	73.6	124	0.210	20	
Ethylbenzene	0.93	0.048	0.9506	0	98.2	72.7	129	0.418	20	
Xylenes, Total	2.8	0.095	2.852	0.01787	96.3	75.7	126	1.41	20	
Surr: 4-Bromofluorobenzene	0.87		0.9506		91.4	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of 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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>lcs-71755</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347510</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	86.5	80	120			
Toluene	0.87	0.050	1.000	0	86.6	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.8	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.8	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	70	130			

Sample ID: <b>mb-71755</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347511</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	0.93		1.000		93.1	70	130			

Sample ID: <b>2211D92-022ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS22-22 0.25'</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347514</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9560	0	95.7	68.8	120			
Toluene	0.92	0.048	0.9560	0	96.5	73.6	124			
Ethylbenzene	0.92	0.048	0.9560	0	96.3	72.7	129			
Xylenes, Total	2.8	0.096	2.868	0	96.1	75.7	126			
Surr: 4-Bromofluorobenzene	0.92		0.9560		96.6	70	130			

Sample ID: <b>2211D92-022amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BS22-22 0.25'</b>	Batch ID: <b>71755</b>	RunNo: <b>92967</b>								
Prep Date: <b>11/29/2022</b>	Analysis Date: <b>12/1/2022</b>	SeqNo: <b>3347515</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	0.9551	0	96.2	68.8	120	0.429	20	
Toluene	0.93	0.048	0.9551	0	97.5	73.6	124	0.882	20	
Ethylbenzene	0.93	0.048	0.9551	0	97.8	72.7	129	1.49	20	
Xylenes, Total	2.8	0.096	2.865	0	97.9	75.7	126	1.79	20	
Surr: 4-Bromofluorobenzene	0.93		0.9551		97.1	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of 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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>lcs-71778</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71778</b>	RunNo: <b>93006</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349352</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.1	80	120			
Toluene	0.97	0.050	1.000	0	96.6	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.6	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	70	130			

Sample ID: <b>mb-71778</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71778</b>	RunNo: <b>93006</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349353</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	0.93		1.000		93.4	70	130			

Sample ID: <b>2211D92-052ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WS22-02 0-0.5'</b>	Batch ID: <b>71778</b>	RunNo: <b>93006</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349356</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	0.9980	0	98.3	68.8	120			
Toluene	0.99	0.050	0.9980	0	99.0	73.6	124			
Ethylbenzene	0.98	0.050	0.9980	0	98.4	72.7	129			
Xylenes, Total	2.9	0.10	2.994	0	98.1	75.7	126			
Surr: 4-Bromofluorobenzene	0.92		0.9980		92.6	70	130			

Sample ID: <b>2211D92-052amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>WS22-02 0-0.5'</b>	Batch ID: <b>71778</b>	RunNo: <b>93006</b>								
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>	SeqNo: <b>3349357</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	0.9950	0	99.6	68.8	120	0.969	20	
Toluene	1.0	0.050	0.9950	0	100	73.6	124	0.787	20	
Ethylbenzene	0.99	0.050	0.9950	0	99.8	72.7	129	1.05	20	
Xylenes, Total	3.0	0.10	2.985	0	99.4	75.7	126	1.02	20	
Surr: 4-Bromofluorobenzene	0.93		0.9950		93.5	70	130	0	0	

**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  
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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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2211D92

07-Dec-22

**Client:** Vertex Resources Services, Inc.**Project:** Bola 7 Federal Com 003

Sample ID: <b>lcs-71774</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>71774</b>			RunNo: <b>93006</b>						
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>			SeqNo: <b>3349376</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	1.000	0	97.1	80	120			
Toluene	0.97	0.050	1.000	0	97.4	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.6	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.5	70	130			

Sample ID: <b>mb-71774</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>71774</b>			RunNo: <b>93006</b>						
Prep Date: <b>11/30/2022</b>	Analysis Date: <b>12/2/2022</b>			SeqNo: <b>3349377</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	0.97		1.000		97.3	70	130			

**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  
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B Analyte detected in the associated Method Blank  
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J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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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: **2211D92**

RcptNo: **1**

Received By: **Juan Rojas**

11/29/2022 7:21:00 AM

*Juan Rojas*

Completed By: **Tracy Casarrubias**

11/29/2022 8:27:06 AM

Reviewed By: *11-29-22*

### Chain of Custody

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

### Log In

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

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? \_\_\_\_\_

Checked by: *JR 11/29/22*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Yes			

## Chain-of-Custody Record

Client: Vertex

☒ Rush 5 days

Project Name:

Project Name: Bala7 Federal Con #003

Mailing Address:

\_\_\_\_\_

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)



**Accreditation:** ☐ Az Compliance

☐ NELAC      ☐ Other

□ EDD (Type)

Date	Time	Matrix	Sample Name
11/23/24	8:00	Soil	BS22-01 0.5'
	8:05		BS22-02 0.5'
	8:10		BS22-03 0.5'
	8:15		BS22-04 0.5'
	8:20		BS22-05 0.5'
	8:25		BS22-06 0.5'
	8:30		BS22-07 0.5'
	8:35		BS22-08 0.5'
	8:40		BS22-09 0.5'
	8:45		BS22-10 0.5'
	8:50		BS22-11 0.5'
	8:55		BS22-12 0.5'

Date:	Time:	Relinquished by:
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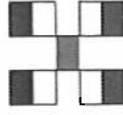
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Date:	Time:	Relinquished by:	

Date:	Time:	Relinquished by:
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11/28/90	Account
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if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

*Released to Imaging: 2/1/2023 2:27:41 PM*



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://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 <sup>-</sup> , F <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , PO <sub>4</sub> <sup>-</sup> , SO <sub>4</sub> <sup>-</sup>		
8260 (VOA)		
8270 (Semi-VOA)		
Total Coliform (Present/Absent)		

Remarks:

Received by:	Via:	Date	Time
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cleaning 11/28/2011

Received by: \_\_\_\_\_ Via: X Date \_\_\_\_\_ Time \_\_\_\_\_

11/29/22 7:12 PM tador

2019

## Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 day

Project Name:

Bola 7 Federal Com #003

Project #:

22E-03973

Project Manager:

Monica Peppin

Sampler:

MJP/M.W.On Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CFI): 9+4.1=20 (°C)

Container Type and #

4 02

Preservative Type

ice

HEAL No.

2211092013014015016017018019020021022023024025026027028029030031032033034035036037038039040041042043044045046047048049050051052053054055056057058059060061062063064065066067068069070071072073074075076077078079080081082083084085086087088089090091092093094095096097098099100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200201202203204205206207208209210211212213214215216217218219220221222223224225226227228229230231232233234235236237238239240241242243244245246247248249250251252253254255256257258259260261262263264265266267268269270271272273274275276277278279280281282283284285286287288289290291292293294295296297298299300301302303304305306307308309310311312313314



## Chain-of-Custody Record

Client: Ver tex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Project Manager:

Monica Peppin

Sampler:

MJP/M.Wir

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp (including CF): 19.4-21.5-2.0 (°C)

Container Type and #

402

Preservative Type

100

HEAL No.

2211642

Date

10:00

Sample Name

BS22-25 0.25

Date

10:05

Sample Name

BS22-26 0.25

Date

10:10

Sample Name

BS22-27 0.25

Date

10:15

Sample Name

BS22-28 0.25

Date

10:20

Sample Name

BS22-29 0.25

Date

10:25

Sample Name

BS22-30 0.25

Date

10:30

Sample Name

BS22-31 0.25

Date

10:35

Sample Name

BS22-32 0.25

Date

10:40

Sample Name

BS22-33 0.25

Date

10:45

Sample Name

BS22-34 0.25

Date

10:50

Sample Name

BS22-35 0.25

Date

10:55

Sample Name

BS22-36 0.25

Date

11:00

Relinquished by:

Relinquished by:

Date

Time

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## Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☒ Rush 5 Day

Project Name:

Bola 7 Federal Com #003

Project #:

22E-03973

Project Manager:

Monica Peppin

Sampler:

MJP/M. WierOn Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CFI): 1.9 to 0.1 = 2.0 (°C)

Container Type and #

4 oz

Preservative Type

ice

HEAL No.

2211592

Date

12:0012:0512:1012:1512:2012:2512:3012:3512:4012:4512:5012:55

Matrix

Soil

Sample Name

BS22-49 0-2.5BS22-50 0-2.5WS22-01 0-0.5WS22-02 0-0.5WS22-03 0-0.5WS22-04 0-0.5WS22-05 0.5-2WS22-06 0-2'WS22-07 0-0.5WS22-08 0-0.5WS22-09 0-0.5WS22-10 0-0.25

Date:

12/28/22

Relinquished by:

Wier

Date:

12/28/22

Relinquished by:

Wier

Received by:

Wier

Via:

11/28/22

Date

11/28/22

Received by:

Wier

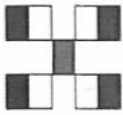
Via:

11/28/22

Date

11/28/22

Remarks:

11/28/22 7:25 AMpg 5/6
**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

MTBE / TMBs (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)

## 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

Project Name:

Bola 7 Federal Com #003

Project #:

22E-03973

Project Manager:

Monica Peppin

Sampler:

MJP / M.W.L.On Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): 1.9 + 0.1 = 2.0 (°C)

Date Time Matrix Sample Name

1/23/20 1:00 Soil WS22-11 0-0.251:05 WS22-12 0-0.251:10 WS22-13 0-0.251:15 WS22-14 0-0.251:20 WS22-15 0-0.251:25 WS22-16 0-0.25WS22WS22WS22WS22WS22WS22

Date: Time: Relinquished by:

Date: Time: Relinquished by:

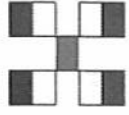
Received by: Via: Date Time

Monica Peppin 1/28/22 7:25 1100

Received by: Via: Date Time

Monica Peppin 1/28/22 7:25 1100

Remarks:

HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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## Analysis Request

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

☒ 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)

BTX / MTBE / TMB's (8021)

**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 175454

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 175454
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	2/1/2023