Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2107450435
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: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 8/26/2021

email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: Robert Hamlet Date: 1/7/2022

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

Closure Approved by: Robert Hamlet Date: 1/7/2022

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

VERTEX

June 9, 2021 Vertex Project #: 21E-01340-001

Spill Closure Report: RGA #3
Unit M, Section 14, Township 23 South, Range 28 East
County: Eddy
API: 30-015-26331
Tracking Number: nAPP2107450435

Prepared For: BTA Oil Producers, LLC
104 South Pecos St
Midland, TX 79701

New Mexico Oil Conservation Division – District 2 – Artesia
811 South First Street
Artesia, New Mexico 88210

BTA Oil Producers, LLC (BTA) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a spill that occurred on the pad from a well stuffing box failure with RGA #3, API 30-015-26331 (hereafter referred to as ("RGA"). BTA provided notification of the spill to New Mexico Oil Conservation Division (NMOCD) District 1, and Uffie Land Company, who owns the property, on March 15, 2021, via an initial C-141 Release Notification (Attachment 1). The NMOCD tracking number assigned to this incident is nAPP2107450435.

This letter provides a description of the spill assessment and remediation activities, and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release.

Incident Description

On March 15, 2021, a release occurred on the pad when a stuffing box failure occurred. This incident resulted in the release of 6 barrels (bbls) of oil and 10 bbls of produced water. The fluid sprayed into the adjacent field with most of the contamination within the boundaries of the engineered pad. No oil or produced water was released into undisturbed areas or waterways. A vacuum truck was dispatched to location and approximately 4 bbls of oil and 7 bbls of produced water were recovered.

Site Characterization

The release at RGA occurred on private land, N 32.30021, W -104.06409, approximately 2 miles northeast of Loving, New Mexico. The legal description for the site is Unit M, Section 14, Township 23 South, Range 28 East, Eddy County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 3.

RGA is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently

used for oil and gas production.

The surrounding landscape is associated with alluvial fans, fan remnants, and ridges at elevations of 1,100 to 5,300 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 7 and 15 inches. Historically, the plant community has been predominantly black grama, dropseeds, threeawns that include soaptree yucca, ephedra, fourwing saltgrass, and forbs such as broom snakeweed, prickly pear, croton, and desert marigold. Litter is small and movement is minimal (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted wellpad.

The Geological Map of New Mexico indicates the surface geology at RGA is comprised primarily of Qa – Alluvium from Holocene to upper Pleistoscene. (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resource Conservation Service Web Soil Survey characterizes the soil at the site as Reagan loam and Upton soils, characterized by loam to gravelly loam. It tends to be well-drained with low to medium runoff and very low to moderate available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is medium potential for karst geology to be present near RGA (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Pecos River located approximately 0.92 miles east of RGA (Google Earth Pro 2021). There are no continuously flowing 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.

The nearest active well to the site is a United States Geological Survey (USGS)-identified well from 2003, located approximately 0.64 miles to the south. Depth to groundwater at this well is 48 feet below ground surface (bgs). There are no active wells within the 0.5-mile radius of the site. Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 2) was completed to determine if the release was subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the release at RGA is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site are determined to be associated with the following constituent concentration limits.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
< 50 feet	Chloride	600 mg/kg
	TPH[1] (GRO + DRO + MRO)	100 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

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

[2]Benzene, toluene, ethylbenzene and xylenes (BTEX

Remedial Actions

An initial spill inspection, completed on April 23, 2021, identified and mapped the boundaries of the potential release area. The release area was determined to be approximately 25 feet long and 17 feet wide; the total affected area was determined to be approximately 504 square feet as shown in Figure 1 (Attachment 3). BTA previously scraped the release area and vertical and horizontal samples were collected throughout the area to determine the extents of the remaining contaminated area. The Daily Field Report (DFR) associated with the initial spill inspection is included in Attachment 4.

On April 26, 2021, Vertex provided 48-hour notification of confirmation sampling to NMOCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 5). Vertex was onsite at RGA on April 28, 2021, collected a total of six five-point composite confirmatory samples from the area. Base samples and sidewall samples were collected from within the area of excavation, samples were taken at the max depth of "2" ft bgs. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NMOCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Characterization sample field screen and analytical data and final confirmatory sample analytical data are summarized in Table 2 and Table 3, respectively (Attachment 6). Laboratory data reports and chain of custody forms are included in Attachment 7.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations are presented on Figure 2 (Attachment 3).

Closure Request

Vertex recommends no additional remediation action to address the release at RGA. Laboratory analyses of the confirmatory samples showed constituent of concern concentration levels below NMOCD Closure Criteria for areas where depth to groundwater is less than 50 feet bgs as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC

have been met. BTA certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the March 15, 2021 release at RGA.

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

Sincerely,

Monica Peppin
PROJECT MANAGER

Attachments

Attachment 1. NMOCD C-141 Report
Attachment 2. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 3. Initial and Confirmatory Site Schematics
Attachment 4. Daily Field Report(s) with Photographs
Attachment 5. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies
Attachment 6. Initial and Confirmatory Lab Data Tables
Attachment 7. Lab Reports and Chain of Custody's (COC's)

References

New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu

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

United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico

United States Department of the Interior, United States Geological Survey. (2020). *Groundwater for New Mexico: Water Levels*. Retrieved from https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

United States Fish and Wildlife. (2020). *National Wetlands Inventory*. Retrieved from https://www.fws.gov/wetlands/Data/Mapper.html

Limitations

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

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

ATTACHMENT 1

District I
1625 N. French Dr., Hobbs, NM 88240
District II
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	nAPP2107450435
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # *(assigned by OCD)*
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.30021 Longitude: -104.06409
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: RGA #3	Site Type: Well Site
Date Release Discovered: 3/15/2021	API# *(if applicable)* Nearest well: RGA #3 API #30-015-26331

Unit Letter	Section	Township	Range	County
M	14	23S	28E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: Uffie Land Company*)

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 6 BBL	Volume Recovered (bbls) 4 BBL
☒ Produced Water	Volume Released (bbls) 10 BBL	Volume Recovered (bbls) 7 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Stuffing Box Failure.
Spill onto pad immediately around the wellhead and off-pad toward a pipeline ROW. High winds also sprayed oil onto farmer's alfalfa field.

(See attached spill calculation spreadsheet.)

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2107450435
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ 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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 3/15/2021

email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2107450435
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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?	<50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ 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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

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Printed Name: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 8/26/2021

email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: Date:

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2107450435
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Closure

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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: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 8/26/2021

email: bhall@btaoil.com Telephone: 432-682-3753

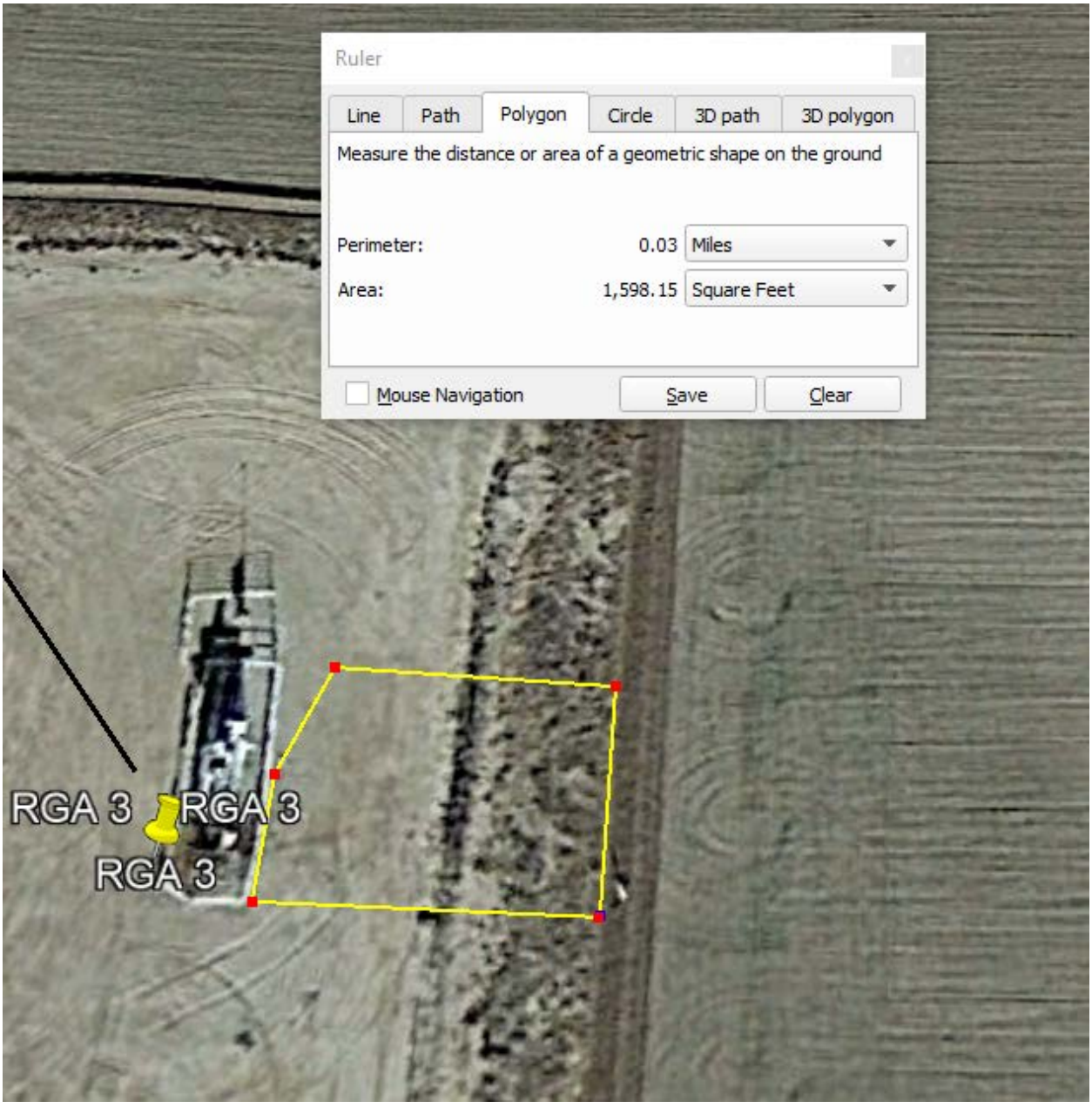
OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____


Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance or area of a geometric shape on the ground
Perimeter:
0.03
Miles
Area:
1,598.15
Square Feet
Mouse Navigation
Save
Clear
RGA 3
RGA 3
RGA 3

Location RGA #3
API #
Spill Date 3/15/2021

Spill Dimensions

ENTER - Length of Spill	40	**feet**
ENTER - Width of Spill	40	**feet**
ENTER - Saturation Depth of Spill	1.5	**inches**
ENTER - Porosity Factor	0.15	**decimal**

Oil Cut - Well Test / Vessel Throughput or Contents

Oil	6
Water	10
Calculated Oil Cut	0.375

Volume Recovered in Truck / Containment

ENTER - Recovered Oil		**BBL**
ENTER - Recovered Water	0	**BBL**

Calculated Values	*calculated*	
Release of Oil in Soil - Unrecovered	2	***BBL***
Release of Water in Soil - Unrecovered	3	***BBL***
Unrecovered Total Release	5	***BBL***

Calculated Values	*calculated*	
Total Release of Oil	2	***BBL***
Total Release of Water	3	***BBL***
Total Release	5	***BBL***

Types of Soil	Porosity Factor
Gravel	0.25
Sand	0.20
Clay/silt/sand Mix	0.15
Clay	0.05
Caliche	0.03
Unknown	0.25

$$\frac{\text{(Length X Width X Depth X 1 ft/12 in) X Porosity}}{5.615\ ft^3 / BBL} \times \text{Oil Cut (or Water Cut)}$$

ATTACHMENT 2

Closure Criteria Worksheet			
Site Name: RGA #3			
Spill Coordinates:		**X: 32.30021**	**Y: -104.06409**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**<50**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	4,831	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	10,548	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	1,156	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	1,156	feet
	ii) Within 1000 feet of any fresh water well or spring	1,156	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	5,010	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Reagan Loam and Upton Soils	
12	Ecological Classification	Shallow and Loamy	
13	Geology	Qa	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'

RGA #3

0.5 mile radius DTGW


RGA #3
Nearest Well: USGS 321728104040001
DTGW: 48 ft
Distance: 0.64 miles
Legend
RGA #3
RGA #3
321757104042101
321733104035001
321728104040001
S Donaldson Farm Rd
Casa Adobe Rd
728
387
Oak Rd
N
1000 ft
Google Earth
© 2021 Google

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the **NEW** USGS National Water Dashboard to access real-time data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

* IMPORTANT: Next Generation Station Page

Search Results -- 1 sites found

site_no list =

- 321728104040001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

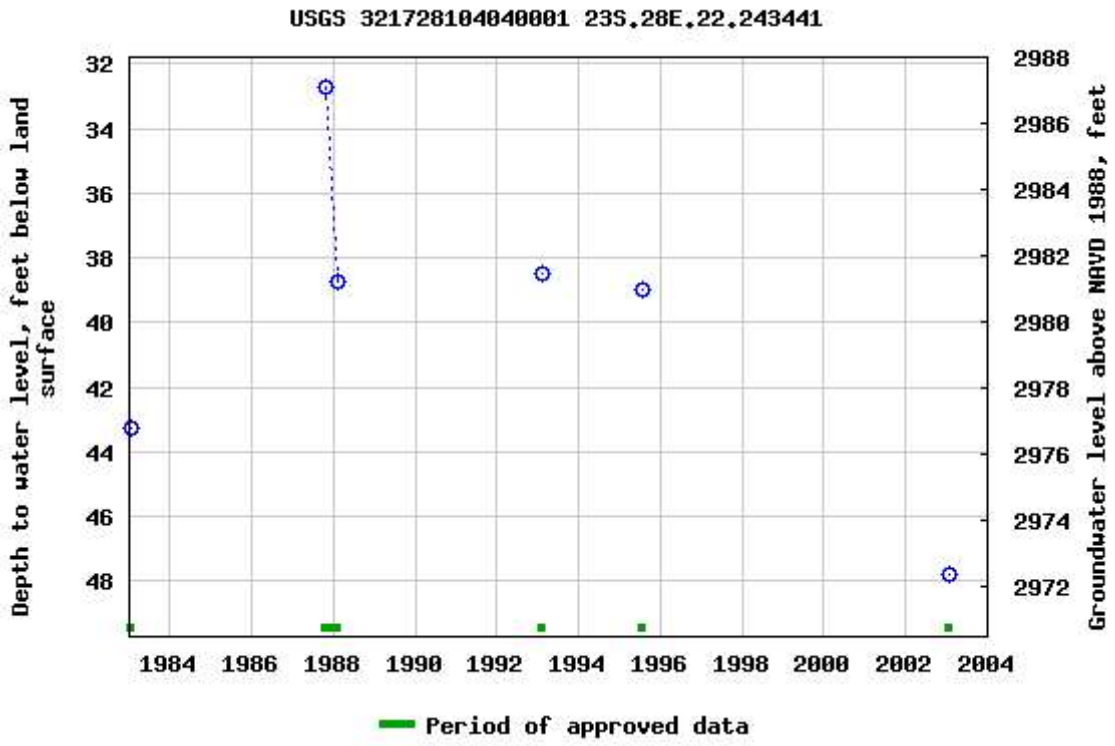
USGS 321728104040001 23S.28E.22.243441

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°17'28", Longitude 104°04'00" NAD27
Land-surface elevation 3,020 feet above NAVD88
The depth of the well is 220 feet below land surface.
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
Subscribe for system changes
News

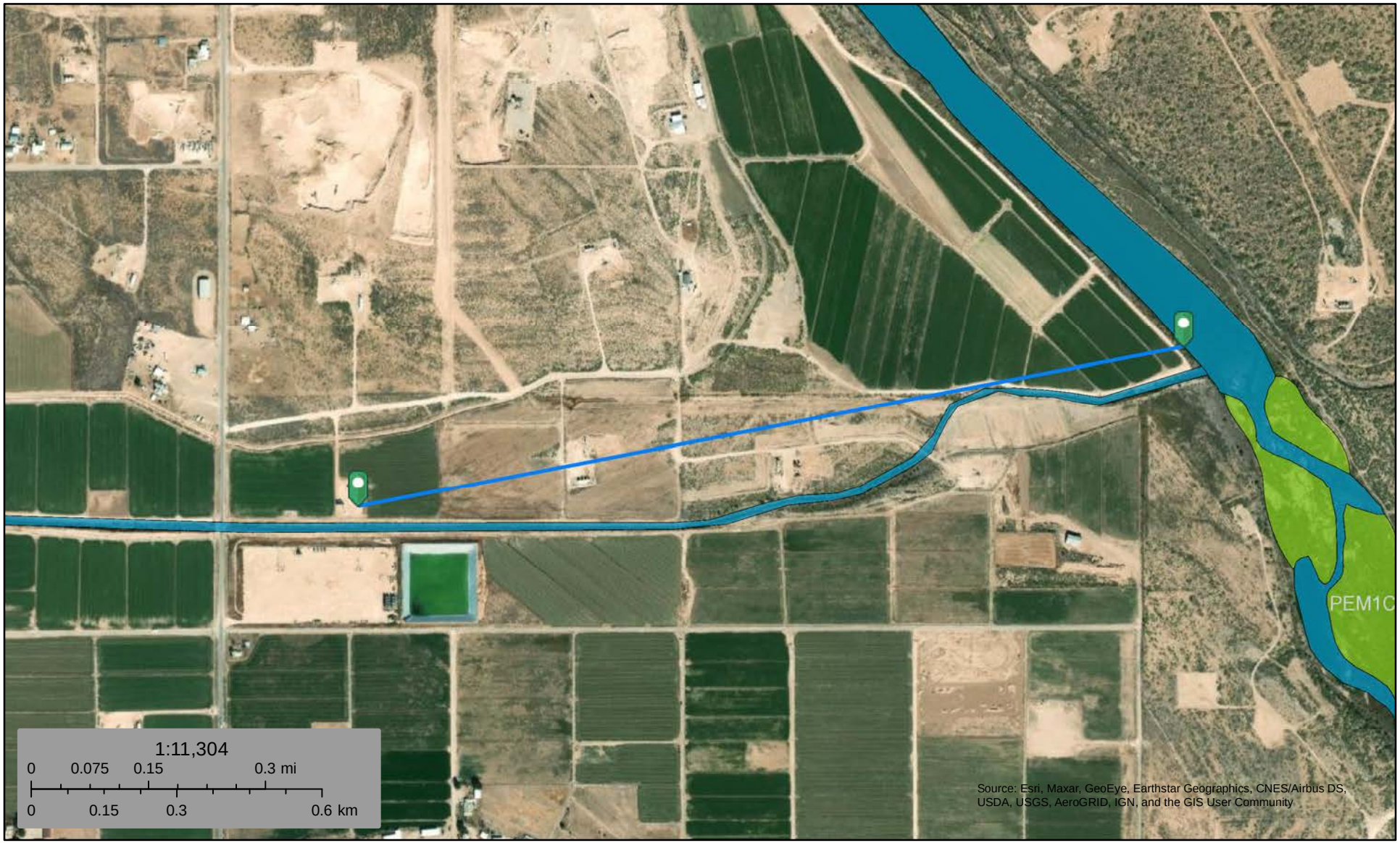
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2021-04-26 17:37:43 EDT
0.65 0.59 nadww01

U.S. Fish and Wildlife Service

National Wetlands Inventory

RGA #3



April 27, 2021

Wetlands

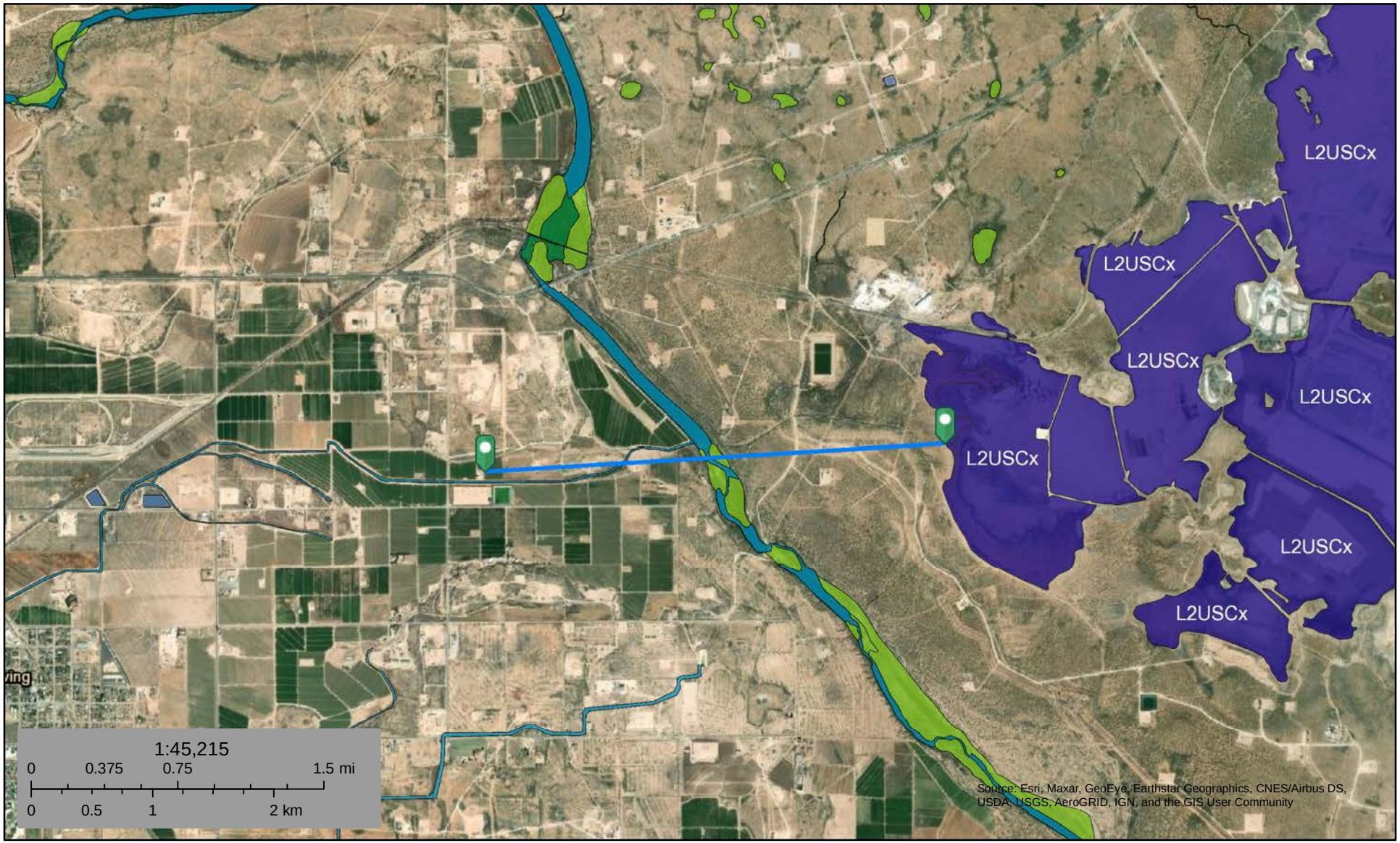
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

RGA #3



April 27, 2021

Wetlands

- Estuarine and Marine Deepwater
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- Freshwater Emergent Wetland
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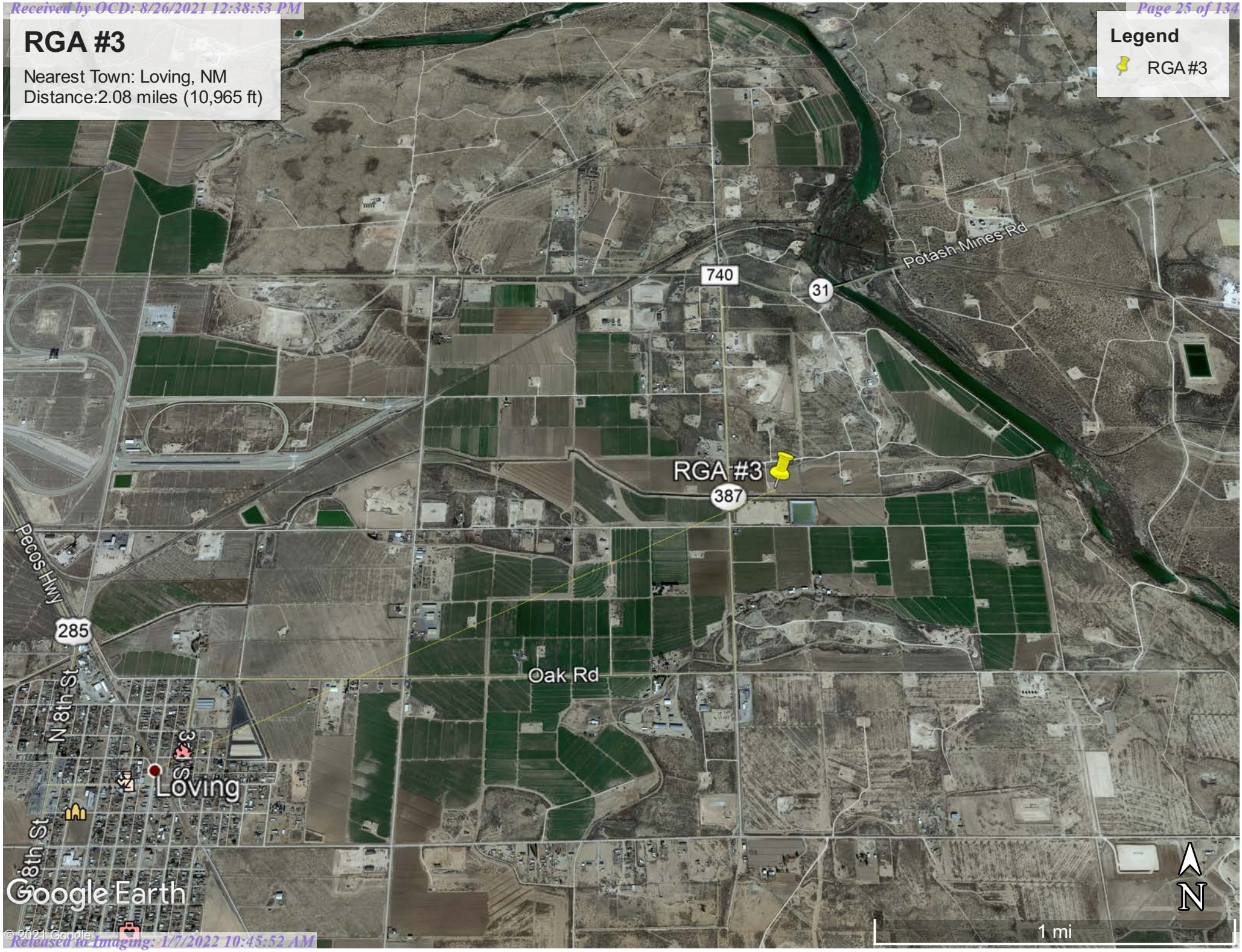
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

RGA #3

Nearest Residence: 0.22 miles (1,156 feet)

RGA #3

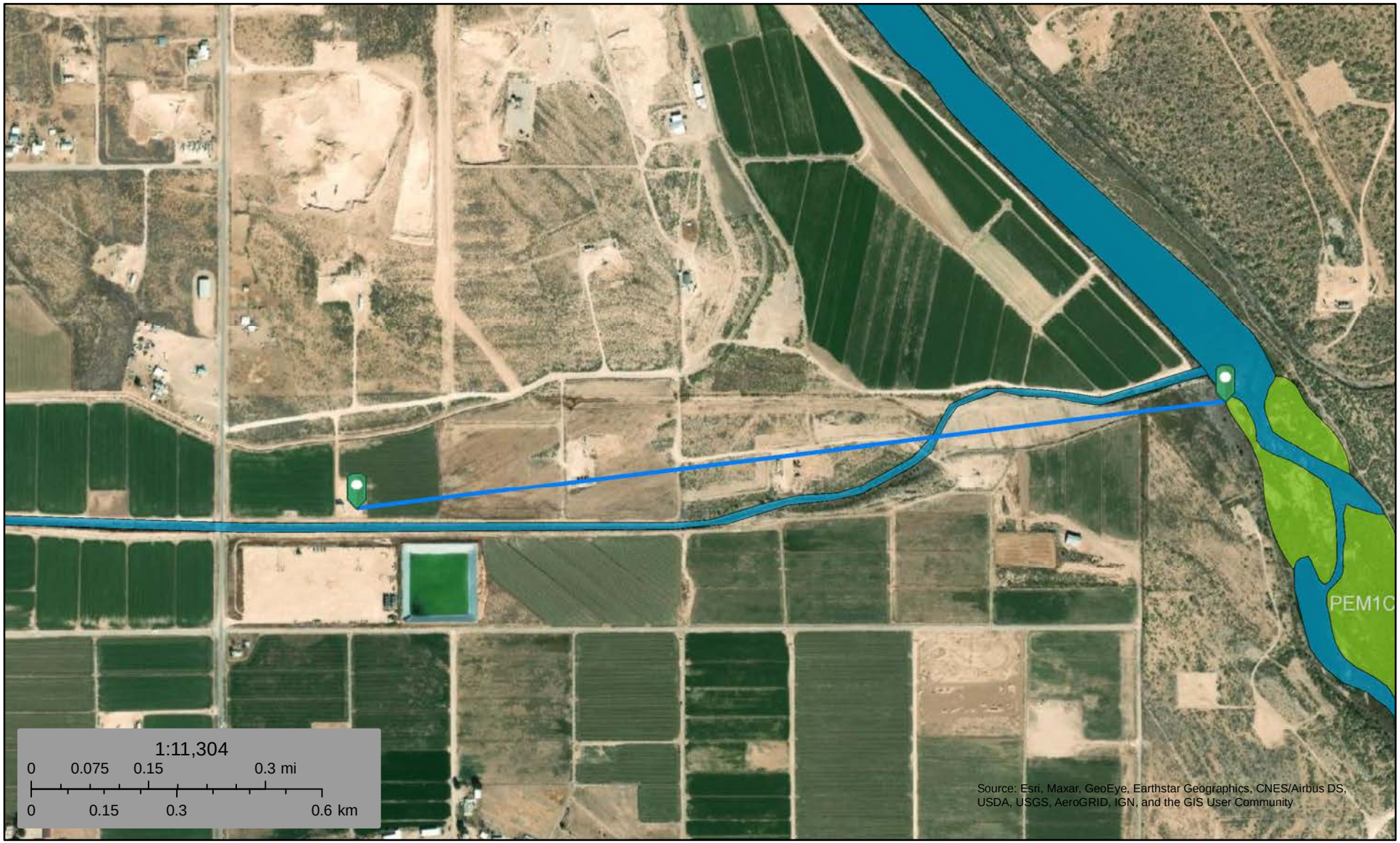
Nearest Town: Loving, NM
Distance:2.08 miles (10,965 ft)



U.S. Fish and Wildlife Service

National Wetlands Inventory

RGA #3



April 27, 2021

Wetlands

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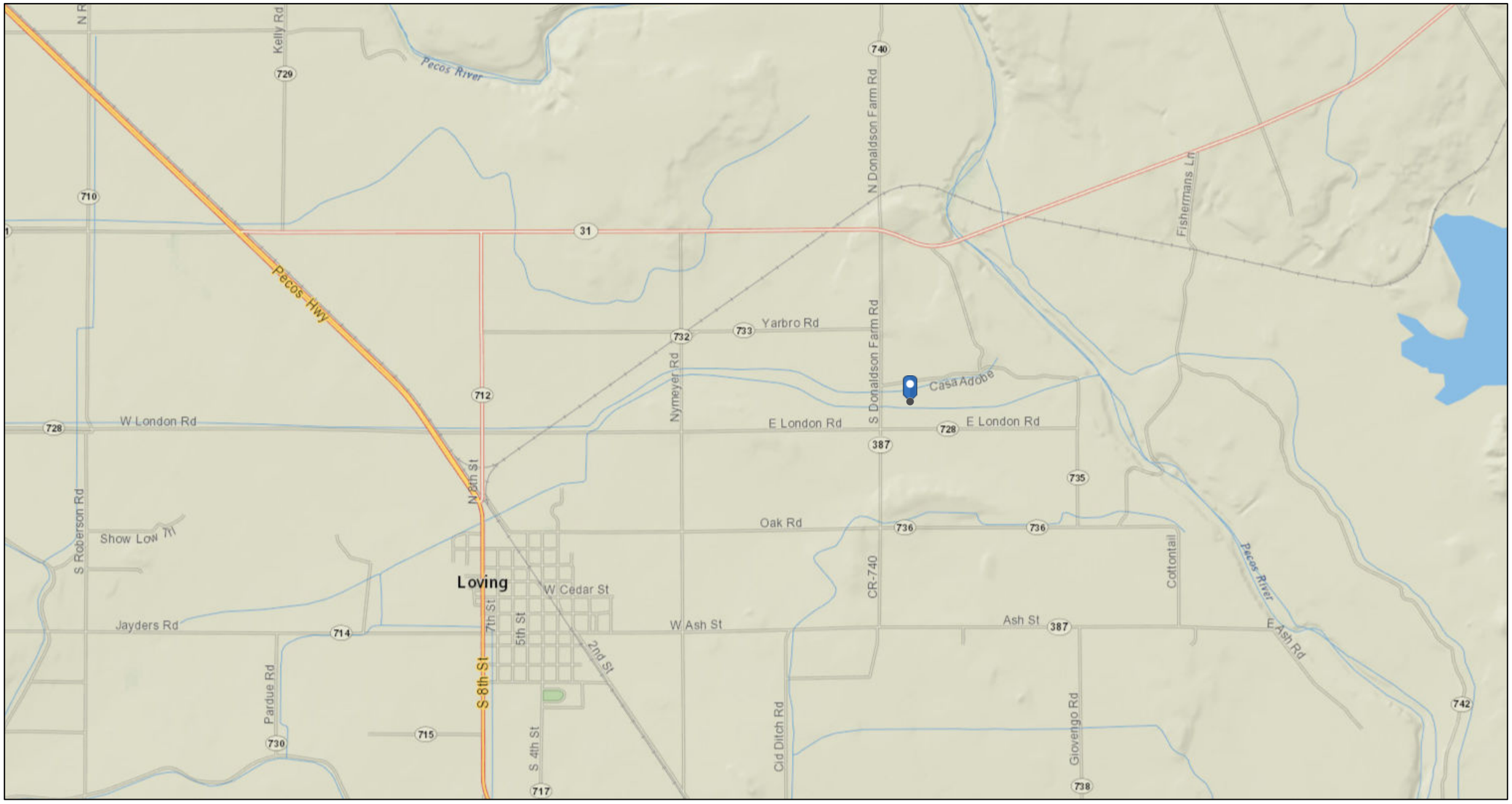
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

RGA #3



4/26/2021, 9:35:50 PM

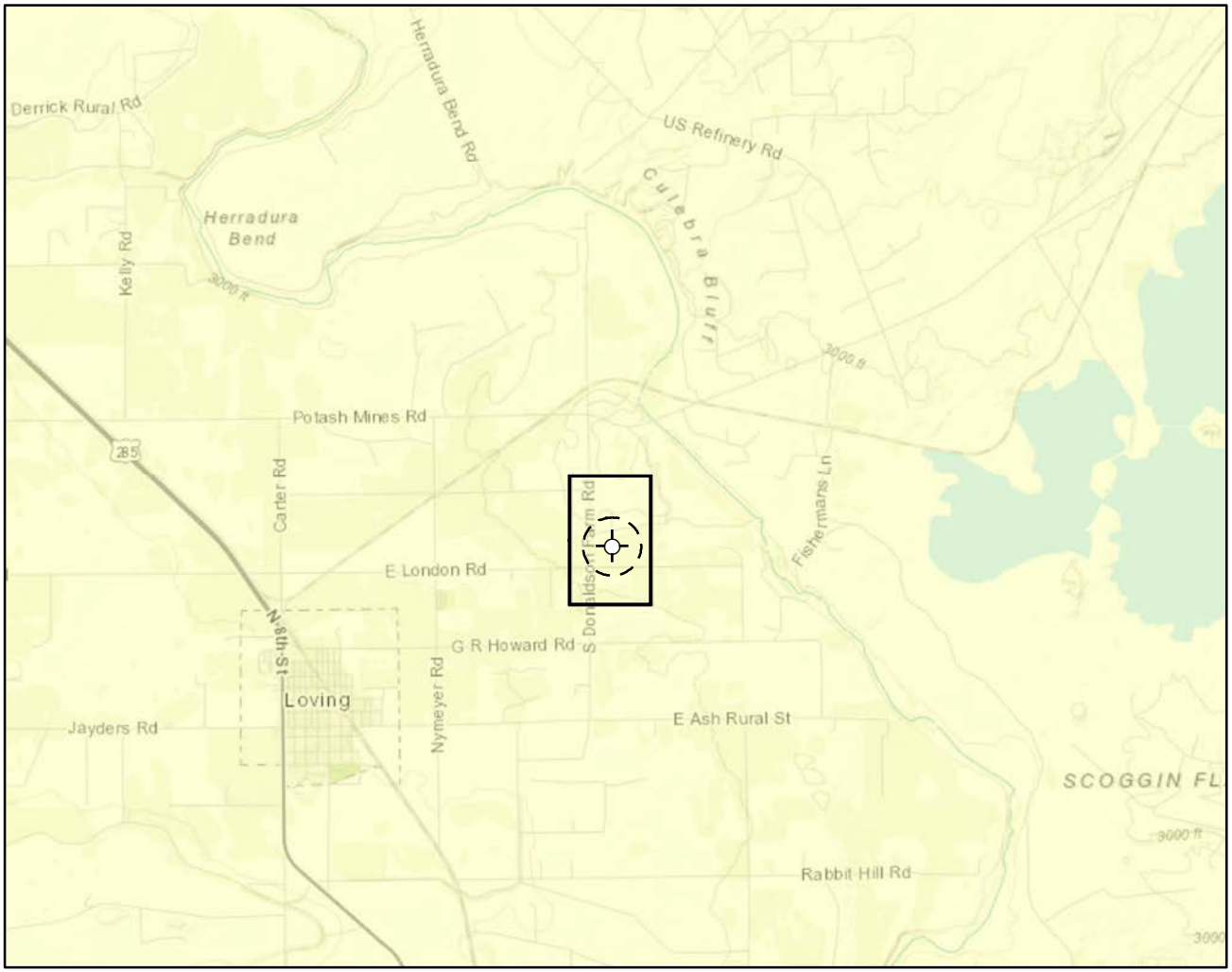
1:36,112

0 0.38 0.75 1.5 mi

0 0.5 1 2 km

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

EMNRD MMD GIS Coordinator
NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappbuilder/index.html?id=7ebfa3c432db42978d66c99a9cc8311a)



Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

Karst Potential

- Critical
- High
- Medium
- Low

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

VERTEX

Map Center:
Lat/Long: 32.300800, -104.064326

NAD 1983 UTM Zone 13N
Date: Apr 27/21

N

Karst Potential
RGA #3

FIGURE:
X

BTA

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 2020; Overview Map: ESRI World Topographic

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\BTA Oil Producers LLC\21E-01340\001 - RGA 3\Figure X Karst Characterization (RGA #3).mxd

National Flood Hazard Layer FIRMette

FEMA

104°4'9"W 32°18'16"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°3'32"W 32°17'46"N

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
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

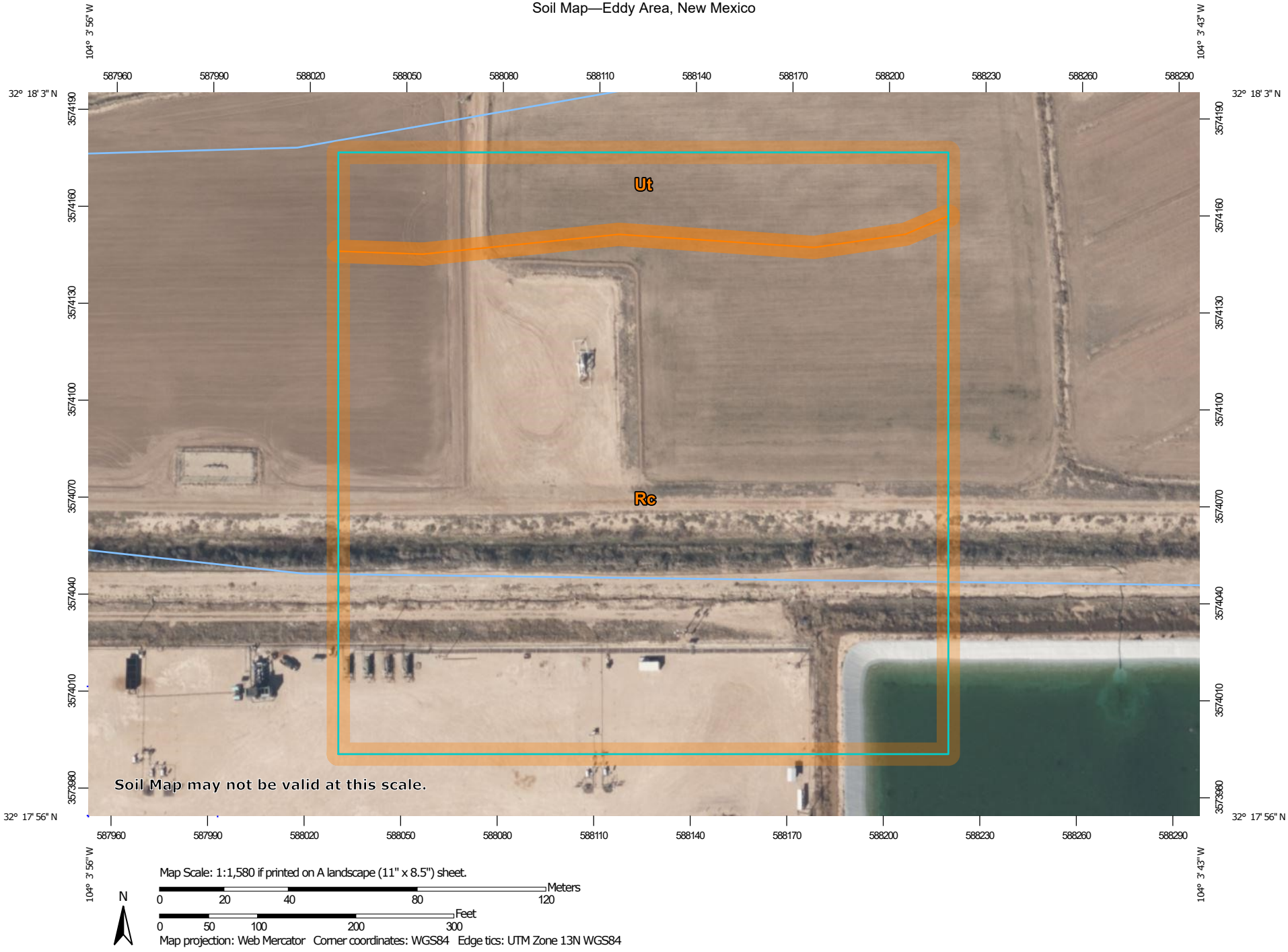
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 4/26/2021 at 11:18 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

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

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 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
Rc	Reagan loam, 0 to 1 percent slopes	7.4	85.0%
Ut	Upton soils, 1 to 3 percent slopes	1.3	15.0%
Totals for Area of Interest		**8.8**	**100.0%**

Eddy Area, New Mexico

Rc—Reagan loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w5l
Elevation: 1,100 to 5,300 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Alluvial fans, fan remnants
Landform position (three-dimensional): Rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 82 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R042XC007NM - Loamy

Hydric soil rating: No

Minor Components

Reagan
Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Upton
Percent of map unit: 1 percent
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Reeves
Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

Eddy Area, New Mexico

Ut—Upton soils, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w69
Elevation: 1,100 to 4,400 feet
Mean annual precipitation: 7 to 14 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Upton and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Upton

Setting

Landform: Fans, ridges
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 12 inches: gravelly loam
H3 - 12 to 21 inches: cemented
H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Minor Components

Upton
Percent of map unit: 1 percent
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Atoka
Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg,

Contact for lead author : 505-761-4488 **Reference site used? Yes/No** No

Date: 2/12/2010 **MLRA:** 42.3 **Ecological Site:** Loamy This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

1. Number and extent of rills There should not be any rills.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

2. Presence of water flow patterns: There can be evidence of sheet flow.

There can be a few flow patterns that should be short and discontinuous. There can be some sheet flow. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

3. Number and height of erosional pedestals or terracettes: Pedestals should be rare. Terracettes can occure and should be discontinuous

There can be a few pedestals that should be less than 1 inch high. Terracettes can be common and should be discontinuous. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can make up to 50% of the ground cover on this site according to the ESD. Bare patch size should be small.

5. Number of gullies and erosion associated with gullies:

Gullies and erosion associated with gullies should be rare are infrequent. Typically, gullies if present will only follow the micro topography. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

6. Extent of wind scoured, blowouts and/or depositional area

There should not be any wind scoured, blowouts and/or depositional areas. However there can be potential for depositional areas. Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

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

Litter should be small (less than “1 in diameter) and its movement should be minimal. This site has adequate vegetation to stop litter movement after short distances. Most of the litter movement on this site will be litter that has been transported onto the site from adjacent sites. Litter produced on this site stays on the site and only travels short distances.

8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :

This site can be susceptible to alluvial erosion. Stability values are estimated to be 1-2 in interspaces and 3-5 at bases of vegetation. This would l

9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :

The SOM content should be less than 1%. A--0 to 6 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky; surface 1/2 to 2 inches has weak thin to medium platy structure; common very fine and fine pores; common very fine, fine and medium roots; strongly calcareous; slightly alkaline (pH 7.6); clear smooth boundary. (4 to 8 inches thick)

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

Overall, infiltration rates should be slow for this site but can be higher around bases of grasses than in interspaces and around bases of shrubs. The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches. Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate.

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

There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>) , greater than (>) , and equal to (=) :

black grama >> tobosa > C 4 bunch grasses (dropseeds) > C4 midgrasses (threeawns) >= soaptree yucca, ephedra, fourwing saltbush >= forbs (croton, desert marigold, globemallow, > broom snakeweed, prickly pear, = other forbs.

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

Black grama and bunchgrasses can show decadence in centers of plants.

14. Average percent litter cover (_____ %) and depth (_____ inches).

Average 15% cover and 0.75 inch deep. (As per ESD)

15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):

(Low Production 650 lbs./ac.) (Average RV Production 925 lbs./ac.) (High Production 1200 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Tarbush, creosote and mesquite can be invaders to this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and tarbush and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and tarbush and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The C4 midgrasses should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

Photograph (s)

MLRA : **Date :**

Ecological Site :

Photo # 1

Comments :

Photo # 2

Comments :

Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg, Garth Grizzle

Contact for lead author : 505-761-4488 **Reference site used? Yes/No** No

Date: 2/17/2010 **MLRA:** 42.3 **Ecological Site:** Shallow This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

1. Number and extent of rills There should not be any rills on this site at 5% or less slope. Few on slopes from 5 to 15% After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

2. Presence of water flow patterns: Large storms can produce short, less than 1 meter flow patterns across the bare patches.

None or few on less than 5% slopes. Few to several on slopes ranging from 5% to 15%. Flow pattern length of 6 to 8 feet on steeper slopes. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

3. Number and height of erosional pedestals or terracettes: There should not be any pedestals and terracettes should be rare.

If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can range from 40 to 60% with bare patches less than 8 inches in size. Discontinuous. Cobble and stones up to 25%.

5. Number of gullies and erosion associated with gullies: There should not be any gullies or erosion associated with gullies on this site at slopes less than 8%.

Slopes over 8% may have limited gully erosion. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

6. Extent of wind scoured, blowouts and/or depositional area

Wind scoured , blowouts and/or depositional areas should be rare and associated with disturbances (e.g. small mammal burrows, resting areas). Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

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

The size of the litter (grass litter) should be small and its movement should be less than 1 meter across bare patches.

8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :

Stability values are estimated to be 5 to 6 in plant canopy at surface and subsurface. 4 to 5 valus will be in interspaces at surface and subsurface.

9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :

Surface layer is brown 0 to 3 " thick. Color is dark grey brown, brown and grey brown. Soil loss from human and high herbivor impact or extended drought will result in the loss of a portion of the surface horizon. Physical crust will occure on "baked" soils. Textures are loam and gravelly loam.

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

In a grassland with uniformly distributed grass patches on coarse-textured soils, runoff should be low to nil. Most water infiltrates at the plant bases as well as in the interspaces.

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction): There should not be any compaction layers on this site.

There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much

greater than (>>) , greater than (>) , and equal to (=) :

Dominants: Black grama > Subdominants: Short-lived perennial C4 bunchgrasses [blue grama and sideoats grama] > Long-lived perennial C4 midgrasses > shrubs > forbs

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

Short-lived perennial component can exhibit significant mortality in drought, black grama tends to exhibit mortality only when exposed to drought in addition to other stressors. Shrubs/yucca should exhibit low mortality rates.

14. Average percent litter cover (_____ %) and depth (_____ inches).

5 to 8% litter cover on this site. Well distributed. Depth of 1/2 inch.

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

(Low Production 251 lbs./ac.) (Average RV Production 525 lbs./ac.) (High Production 800 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Mesquite, whitethorn and creosotebush (where gravel content high) can be invaders of this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and whitethorn and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and whitethorn and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The dropseeds should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

Photograph (s)

MLRA : **Date :**

Ecological Site :

Photo # 1

Comments :

Photo # 2

Comments :

RGA #3

4/26/2021, 3:49:33 PM

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

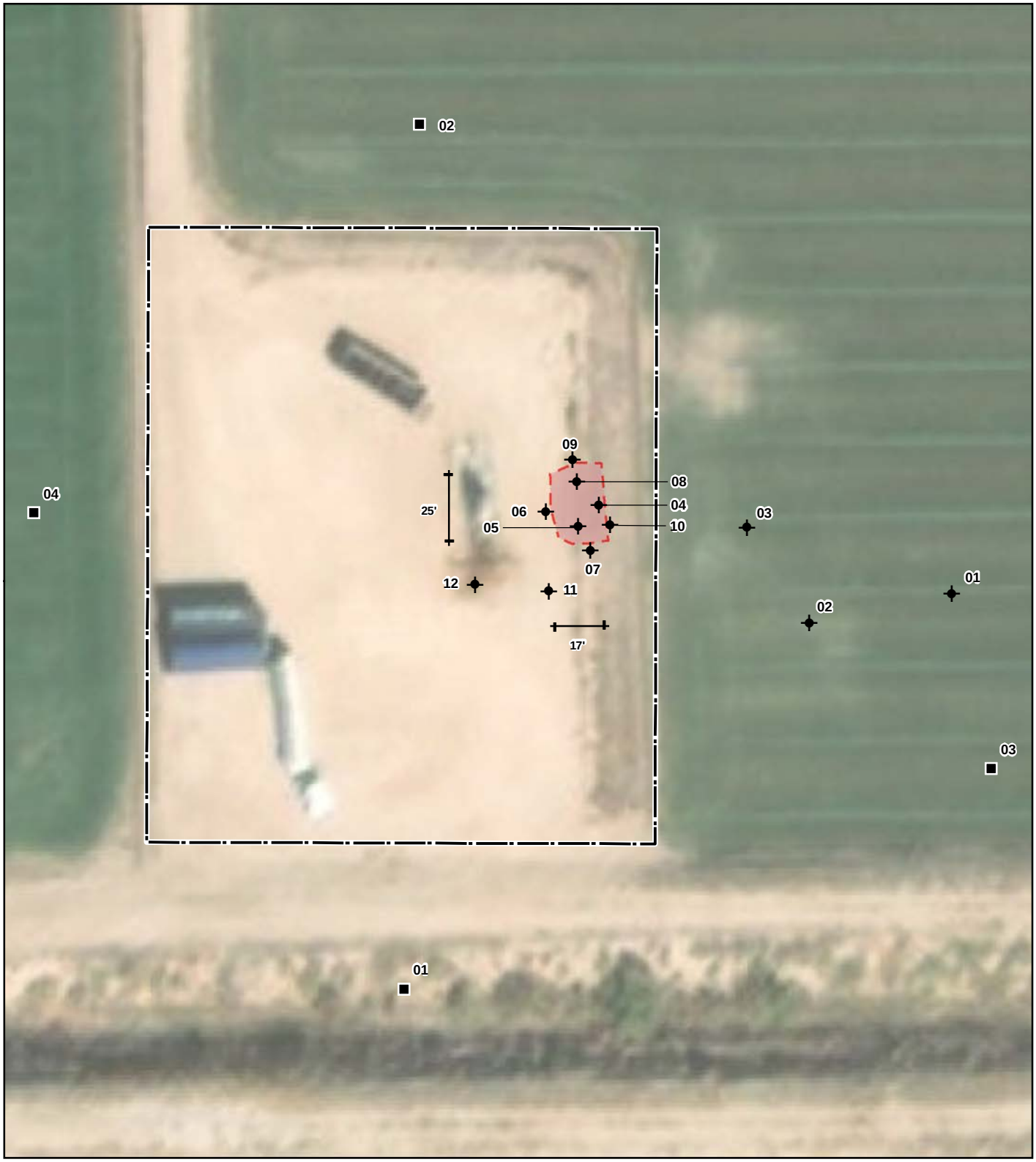
Faults

- Fault, Exposed
- Fault, Intermittent
- Fault, Concealed
- Shere Zone

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, NMBGMR

ArcGIS Web AppBuilder

ATTACHMENT 3



Background Sample (Prefixed by "BG21-")

Borehole Prefixed by ("BH21-")

Approximate Lease Boundary

Approximate Extent of Spill (~504 sq. ft.)

VERTEX

0 15 30 ft.

NAD 1983 UTM Zone 13N
Date: Apr 27/21

Map Center:
Lat: 32.300275,
Long:-104.064124

N

Initial Characterization
RGA #3

FIGURE:
1

BTA

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

Note: Background image from ESRI, 2020.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\BTA Oil Producers LLC\21E-01340\001 - RGA 3\Figure 1 Initial Characterization (RGA #3).mxd

● Base Sample (Prefixed by "BS21-") Area Excavated to 2 ft.

▲ Wall Sample (Prefixed by "WS21-") Area Excavated to 0.5 ft.

Approximate Lease Boundary

VERTEX

0 5 10 20 ft.

NAD 1983 UTM Zone 13N
Date: May 07/21

Map Center:
Lat: 32.300339,
Long:-104.064308

N

Confirmatory Schematic
RGA #3

FIGURE: **2**

BTA

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, 2020.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\BTA Oil Producers LLC\21E-01340\001 - RGA 3\Figure 2 Confirmatory Schematic RGA 3.mxd

ATTACHMENT 4

Daily Site Visit Report

Client:	BTA Oil Producers LLC	Inspection Date:	4/23/2021
Site Location Name:		Report Run Date:	4/23/2021 11:55 PM
Client Contact Name:	Bob Hall	API #:	
Client Contact Phone #:	432-312-2203		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/23/2021 9:10 AM
Departed Site	4/23/2021 4:37 PM

Field Notes

10:34 Arrived on site to assess characterization of the spill that happened from the pumping unit at RGA #3.

10:35 Spill came from the well head and travelled east of the pumping unit and had some overspray that travelled east of the pad 30-40 yards.

10:36 The spill has been scraped before my arrival. About 0.5-1ft down on the pad.

10:38 I will begin taking samples and mark them at the depth at which the surface is now. (Scraped area 1ft down will be marked at 0 etc.)

16:20 Collected sample BH1, BH2, BH3, and BH4 from pasture area. All clean on chlorides and TPH

16:21 BH5-12 are on the pad. BH5-8 are collected as bases within the scraped area.

16:21 BH5 and BH8 were the only samples high on TPH at the surface. BH5 ran 120 and BH8 over 1000.

16:22 BH5 cleaned up at 0.5ft on TPH while BH8 didn't clean up until 2ft. Both sample points are close to each other.

16:23 Marking separate polygon for BH5 and BH8 for having to go deeper. Then another polygon for the scraped area.

Next Steps & Recommendations

1 No recommendations at this time.

Daily Site Visit Report

Site Photos

Viewing Direction: East

Scraped area

Viewing Direction: North

Scraped area

Viewing Direction: East

Overspray area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Chance Dixon

Signature: _____
Signature

Spill Response and Sampling

VERTEX

Client:	BTA Oil Producers
Date:	4/23/21
Site Name:	BGA #3
Site Location:	
Client Contact:	B. Hall
Project Manager:	M. Peppin
Project #:	21E-01340
API:	
Site Wide Picture	Yes/No Circle

Initial Spill Information - Record on First Visit	
Spill Date:	3/15/21
Spill Volume:	22
Spill Cause:	stuffing box failure
Spill Product:	Oil / PW / Cond.
Recovered Spill Volume:	
Recovery Method:	
On Lease/Off Lease:	Both
Site Placard Picture:	Yes/No Circle

Sampling

		Field Screening							'Data Collection (Check for Yes)	
		Hydrocarbon		Chloride						
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	EC Reading (dS/cm)	Temp (°C)	Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Picture	Marked on Site Sketch
SS/TP/BH - Year - Number Ex. BH18-01	Ex. '2ft	400.0	200.0	0.006	25	0		BTEX TPH None		
BG21-01	0	0.3	—				170			
BG21-01	2	—	—				325			
BG21-02	0	0.8	—				207			
BG21-02	2	—	—				3430			
BG21-03	0	0.5	-				180			
BG21-03	2	—	-				250			
BG21-04	0	1.0	-				757			
BG21-04	1	—	-				595			
BG21-04	2	—	-				750			
BH21-01	0-0.5	0.6	82				315			
BH21-02	0-0.5	0.7	34				225			
BH21-03	0-0.5	0.6	22				232			
BH21-04	0	3.8	118				357			
BH21-05	0	5.6	158				257			
BH21-05	0.5	1.2	47				317			
BH21-06	0-0.5	0.5	27				297			
BH21-07	0-0.5	0.7	90				205			
BH21-08	0	29.5	1101				296			
BH21-08	0.5	5.0	427				-			
BH21-08	1	1.1	116				-			
BH21-08	1.5	0.6	118				430			
BH21-08	2	[illegible]	98				780			

Spill Response and Sampling

VERTEX

Client: BTA Oil Producers	Initial Spill Information - Record on First Visit
Date: 4/23/21	Spill Date: 3/15/21
Site Name: RGA #3	Spill Volume: 22
Site Location:	Spill Cause: stuffing box failure
Client Contact: B. Hall	Spill Product: oil / PW / Cond.
Project Manager: M. Peppin	Recovered Spill Volume:
Project #: 21E-01340	Recovery Method:
API:	On Lease/Off Lease: Both
Site Wide Picture Yes/No Circle	Site Placard Picture: Yes/No Circle

Sampling

		Field Screening								
		Hydrocarbon		Chloride					'Data Collection (Check for Yes)	
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	EC Reading (dS/cm)	Temp (°C)	Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Picture	Marked on Site Sketch
SS/TP/BH - Year - Number Ex. BH18-01	Ex. '2ft	400.0	200.0	0.006	25	0		BTEX TPH None		
BH21-09	0-0.5	0.6	29				360			
BH21-10	0-0.5	0.7	48				375			
BH21-11	0	0.6	95				427			
BH21-12	0	0.5	60				297			

Daily Site Visit Report

Client:	BTA Oil Producers LLC	Inspection Date:	4/28/2021
Site Location Name:	RGA #3	Report Run Date:	4/28/2021 7:26 PM
Client Contact Name:	Bob Hall	API #:	30-015-26331
Client Contact Phone #:	432-312-2203		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/28/2021 8:10 AM
Departed Site	4/28/2021 12:35 PM

Field Notes

8:17 Arrived on site, began dfr and filled out safety paperwork

12:21 Collected a total of 6 confirmation samples. 2 BS and 4 WS. All samples have been field screened and jarred for labs.

12:23 Approximately 32 yards excavated.

Next Steps & Recommendations

1 Submit samples to lab and wait for results

Daily Site Visit Report

Site Photos

Viewing Direction: South

Excavation of area, going from 2’ to 6”.
Working from left to right

Viewing Direction: East

Excavation area, working left to right. 2’ to 6”

Viewing Direction: East

Excavation

Viewing Direction: South

Excavation area

Daily Site Visit Report

Viewing Direction: North

Fencing around excavation

Daily Site Visit Report

Daily Site Visit Signature

Inspector: John Ramirez

Signature:

Spill Response and Sampling

VERTEX

Client: BTA
Date: 4-28-21
Site Name: RGA #3
Site Location: 32.3002539 -104.0042572
Client Contact: Bob Hall
Project Manager: Monica Peppin
Project #: 21E-01340
API:
Site Wide Picture: Yes/No Circle

Initial Spill Information - Record on First Visit
Spill Date: 3-15-21
Spill Volume: 22
Spill Cause: Stuffing box failure
Spill Product: Oil/Pw/Cond
Recovered Spill Volume: 0
Recovery Method: N/A
On Lease/Off Lease: Both
Site Placard Picture: Yes/No Circle

		Sampling								
		Field Screening							Data Collection (Check for Yes)	
		Hydrocarbon		Chloride						
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	EC Reading (dS/cm)	Temp (°C)	Chloride (ppm)	Chloride Titration (ppm)	Lab Analysis	Picture	Marked on Site Sketch
SS/TP/BH - Year Number Ex. BH18-01	Ex. '2ft	400.0	200.0	0.006	25	0		BTEX TPH None		
BS21-01	2		32				435	lab		
BS21-02	0.5'		80				312	lab		
WS21-01	0-2		56				477	lab		
WS21-02	0-2		58				215	lab		
WS21-03	0-0.5		18				287	lab		
WS21-04	0-2		13				275	lab		

ATTACHMENT 5

Monica Peppin

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Monday, April 26, 2021 10:52 AM
To: Enviro, OCD, EMNRD
Cc: John Hurt; Monica Peppin; BHall@btaoil.com
Subject: nAPP2107450435 48 HR Notification RGA 3

All,

Please accept this email as 48-hour notification that Vertex Resource Services has scheduled confirmatory sampled to be conducted at RGA #3 for the following release:

nAPP2107450435 DOR: March 15, 2021

On Wednesday, April 28, 2021 at approximately 8:00 AM, Monica Peppin will be onsite to conduct confirmatory sampling after excavation has been completed. She can be reached at 575-361-9880, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 575-361-9880.

Thank you,
Monica

Monica Peppin
Project Manager

Vertex Resource Group Ltd.
3101 Boyd Drive,
Carlsbad, NM 88220

P 575.725.5001 Ext. 711
C 575.361.9880
F

www.vertex.ca

ATTACHMENT 6

Client Name: BTA Oil Producers, LLC
Site Name: RGA #3
Project #: 21E-01340-001
Lab Report: 2104B59, 2104B06

Table 2. Release Characterization Sampling <50 ft

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Quantab - High/Low)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH21-01	0-0.5	4/23/2021	0.6	82	315	-	-	-	-	-	-	-	-
BH21-02	0-0.5	4/23/2021	0.7	34	225	-	-	-	-	-	-	-	-
BH21-03	0-0.5	4/23/2021	0.6	22	232	-	-	-	-	-	-	-	-
BH21-04	0	4/23/2021	3.8	118	357	-	-	-	-	-	-	-	-
BH21-05	0	4/23/2021	5.6	158	257	<0.024	<0.215	<4.8	33	<48	38	86	110
BH21-05	0.5	4/23/2021	1.2	47	317	<0.024	<0.217	<4.8	<9.9	<49	<14.7	<63.7	100
BH21-06	0	4/23/2021	0.5	27	297	<0.024	<0.217	<4.8	<9.5	<48	<14.3	<62.3	110
BH21-07	0	4/23/2021	0.7	90	205	<0.023	<0.208	<4.6	24	<48	29	77	160
BH21-08	0	4/23/2021	29.5	1,101	296	<0.024	<0.212	<4.7	1,900	1,500	1,905	**3,405**	170
BH21-08	0.5	4/23/2021	5.0	427	-	-	-	-	-	-	-	-	-
BH21-08	1	4/23/2021	1.1	116	-	-	-	-	-	-	-	-	-
BH21-08	1.5	4/23/2021	0.6	118	430	-	-	-	-	-	-	-	-
BH21-08	2	4/23/2021	-	98	780	<0.025	<0.225	<5.0	<9.8	<49	<14.8	<63.8	84
BH21-09	0-0.5	4/23/2021	-	24	360	<0.023	<0.21	<4.7	<9.5	<47	<14.2	<61.2	330
BH21-10	0-0.5	4/23/2021	-	48	375	<0.024	<0.219	<4.9	<9.9	<49	<14.8	<63.8	150
BH21-11	0	4/23/2021	-	95	427	-	-	-	-	-	-	-	-
BH21-12	0	4/23/2021	0.5	60	297	-	-	-	-	-	-	-	-
BG21-01	0	4/23/2021	0.3	-	170	-	-	-	-	-	-	-	-
BG21-01	2	4/23/2021	-	-	325	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	1,900
BG21-02	0	4/23/2021	0.8	-	207	-	-	-	-	-	-	-	-
BG21-02	2	4/23/2021	-	-	3,430	<0.025	<0.224	<5.0	<9.7	<48	<14.7	<62.7	160
BG21-03	0	4/23/2021	0.5	-	180	-	-	-	-	-	-	-	-
BG21-03	2	4/23/2021	-	-	250	<0.025	<0.222	<4.9	<9.5	<47	<14.4	<61.4	140
BG21-04	0	4/23/2021	1	-	757	-	-	-	-	-	-	-	-
BG21-04	1	4/23/2021	-	-	595	-	-	-	-	-	-	-	-
BG21-04	2	4/23/2021	-	-	750	<0.024	<0.215	<4.8	<9.6	<48	<14.4	<62.4	410

"-" Indicates not analyzed/assessed
Bold and shaded indicates exceedance outside of applied action level

Client Name: BTA Oil Producers, LLC
Site Name: RGA # 3
NM OCD Incident Tracking #: nAPP2107450435
Project #: 21E-01340-001
Lab Report: 2104D06

Table 3. Confirmatory Sampling Laboratory Data Results - Depth to Groundwater > 50 feet

Sample Description			Petroleum Hydrocarbons							Inorganic
			Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS21-01	2	April 28, 2021	ND	ND	ND	ND	ND	ND	ND	160
BS21-02	0.5	April 28, 2021	ND	ND	ND	39	49	39	88	160
WS21-01	0-2	April 28, 2021	ND	ND	ND	ND	ND	ND	ND	240
WS21-02	0-2	April 28, 2021	ND	ND	ND	ND	ND	ND	ND	100
WS21-03	0-0.5	April 28, 2021	ND	ND	ND	ND	ND	ND	ND	150
WS21-04	0-2	April 28, 2021	ND	ND	ND	ND	ND	ND	ND	140

Bold and shaded indicates exceedance outside of NM OCD Closure Criteria

ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 30, 2021

Monica Peppin

Vertex Resource Group Ltd.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: RGA 3 OrderNo.: 2104B06

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/27/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2104B06**
Date Reported: **4/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BG21-01 2'
Project: RGA 3 **Collection Date:** 4/26/2021 10:20:00 AM
Lab ID: 2104B06-001 **Matrix:** SOIL **Received Date:** 4/27/2021 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/28/2021 3:09:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2021 3:09:44 PM
Surr: DNOP	122	70-130		%Rec	1	4/28/2021 3:09:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	1900	60		mg/Kg	20	4/29/2021 4:55:10 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/28/2021 11:25:29 PM
Toluene	ND	0.048		mg/Kg	1	4/28/2021 11:25:29 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/28/2021 11:25:29 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/28/2021 11:25:29 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	4/28/2021 11:25:29 PM
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	4/28/2021 11:25:29 PM
Surr: Dibromofluoromethane	108	70-130		%Rec	1	4/28/2021 11:25:29 PM
Surr: Toluene-d8	102	70-130		%Rec	1	4/28/2021 11:25:29 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/28/2021 11:25:29 PM
Surr: BFB	95.9	70-130		%Rec	1	4/28/2021 11:25:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B06**
Date Reported: **4/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BG21-02 2'
Project: RGA 3 **Collection Date:** 4/26/2021 10:25:00 AM
Lab ID: 2104B06-002 **Matrix:** SOIL **Received Date:** 4/27/2021 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/28/2021 3:19:27 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2021 3:19:27 PM
Surr: DNOP	106	70-130		%Rec	1	4/28/2021 3:19:27 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	160	60		mg/Kg	20	4/29/2021 11:01:30 AM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	4/28/2021 11:52:32 PM
Toluene	ND	0.050		mg/Kg	1	4/28/2021 11:52:32 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/28/2021 11:52:32 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/28/2021 11:52:32 PM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	4/28/2021 11:52:32 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/28/2021 11:52:32 PM
Surr: Dibromofluoromethane	108	70-130		%Rec	1	4/28/2021 11:52:32 PM
Surr: Toluene-d8	99.7	70-130		%Rec	1	4/28/2021 11:52:32 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2021 11:52:32 PM
Surr: BFB	92.0	70-130		%Rec	1	4/28/2021 11:52:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B06**
Date Reported: **4/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BG21-03 2'
Project: RGA 3 **Collection Date:** 4/26/2021 10:30:00 AM
Lab ID: 2104B06-003 **Matrix:** SOIL **Received Date:** 4/27/2021 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/28/2021 3:57:16 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/28/2021 3:57:16 PM
Surr: DNOP	123	70-130		%Rec	1	4/28/2021 3:57:16 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	140	60		mg/Kg	20	4/29/2021 11:38:33 AM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **BRM**
Benzene	ND	0.025		mg/Kg	1	4/29/2021 12:19:36 AM
Toluene	ND	0.049		mg/Kg	1	4/29/2021 12:19:36 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/29/2021 12:19:36 AM
Xylenes, Total	ND	0.099		mg/Kg	1	4/29/2021 12:19:36 AM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	4/29/2021 12:19:36 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	4/29/2021 12:19:36 AM
Surr: Dibromofluoromethane	110	70-130		%Rec	1	4/29/2021 12:19:36 AM
Surr: Toluene-d8	100	70-130		%Rec	1	4/29/2021 12:19:36 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/29/2021 12:19:36 AM
Surr: BFB	93.5	70-130		%Rec	1	4/29/2021 12:19:36 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B06**
Date Reported: **4/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BG21-04 2'
Project: RGA 3 **Collection Date:** 4/26/2021 10:35:00 AM
Lab ID: 2104B06-004 **Matrix:** SOIL **Received Date:** 4/27/2021 7:39:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/28/2021 4:06:57 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2021 4:06:57 PM
Surr: DNOP	107	70-130		%Rec	1	4/28/2021 4:06:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	410	60		mg/Kg	20	4/29/2021 12:15:35 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **BRM**
Benzene	ND	0.024		mg/Kg	1	4/29/2021 12:46:40 AM
Toluene	ND	0.048		mg/Kg	1	4/29/2021 12:46:40 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/29/2021 12:46:40 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/29/2021 12:46:40 AM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	4/29/2021 12:46:40 AM
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	4/29/2021 12:46:40 AM
Surr: Dibromofluoromethane	111	70-130		%Rec	1	4/29/2021 12:46:40 AM
Surr: Toluene-d8	98.9	70-130		%Rec	1	4/29/2021 12:46:40 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **BRM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/29/2021 12:46:40 AM
Surr: BFB	94.9	70-130		%Rec	1	4/29/2021 12:46:40 AM

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B06**
30-Apr-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **MB-59700**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **59700**	RunNo: **77029**							
Prep Date: **4/29/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731376**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-59700**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **59700**	RunNo: **77029**							
Prep Date: **4/29/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731377**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.5	90	110			

Sample ID: **MB-59704**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **59704**	RunNo: **77042**							
Prep Date: **4/29/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731644**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-59704**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **59704**	RunNo: **77042**							
Prep Date: **4/29/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731645**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B06**
30-Apr-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **MB-59659**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **59659**	RunNo: **77011**
Prep Date: **4/27/2021**	Analysis Date: **4/28/2021**	SeqNo: **2730655** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Sample ID: **LCS-59659**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **59659**	RunNo: **77011**
Prep Date: **4/27/2021**	Analysis Date: **4/28/2021**	SeqNo: **2730657** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	10	50.00	0	119	68.9	141			
Surr: DNOP	5.9		5.000		119	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B06**
30-Apr-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **lcs-59658** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS** Batch ID: **59658** RunNo: **77007**
Prep Date: **4/27/2021** Analysis Date: **4/28/2021** SeqNo: **2730200** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	70	130			
Toluene	0.99	0.050	1.000	0	98.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID: **mb-59658** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **59658** RunNo: **77007**
Prep Date: **4/27/2021** Analysis Date: **4/28/2021** SeqNo: **2730201** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		111	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		113	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B06**
30-Apr-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **lcs-59658**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **59658**	RunNo: **77007**
Prep Date: **4/27/2021**	Analysis Date: **4/28/2021**	SeqNo: **2730182** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.0	70	130			
Surr: BFB	460		500.0		92.1	70	130			

Sample ID: **mb-59658**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **59658**	RunNo: **77007**
Prep Date: **4/27/2021**	Analysis Date: **4/28/2021**	SeqNo: **2730183** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.5	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Vertex Resource Group Ltd.** Work Order Number: **2104B06** RcptNo: **1**

Received By: **Cheyenne Cason** **4/27/2021 7:39:00 AM** CM

Completed By: **Cheyenne Cason** **4/27/2021 8:16:38 AM** CM

Reviewed By: ENH 4/27/21

Chain of Custody

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

Log In

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

10 4/27/21

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by:

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good				
2	0.3	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5-day
☑ Standard ☐ Rush

Project Name: RGA #3

Project #: 21E-01340

Project Manager: Monica Peppin

Sampler: JR

On Ice: ☑ Yes ☐ No

# of Coolers: 2 (0.7 - 0.1 = 0.6)

Cooler Temp (including CF): 0.4 - 0.1 = 0.3 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2104806	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4-26	10:20	soil	BG21-01 2'	4oz	1 cool	001	✓	✓					✓			
✓	10:25	✓	BG21-02 2'	✓	✓	002										
✓	10:30	✓	BG21-03 2'	✓	✓	003										
4-26	10:35	✓	BG21-04 2'	✓	✓	004	✓	✓					✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
4/26	1300					
4/26/21	1900			courier	4/27/21	0734

Remarks: cc: M. Peppin

BTA Oil

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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 04, 2021

Monica Peppin

Vertex Resource Group Ltd.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: RGA 3 OrderNo.: 2104B59

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/28/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-06 0-0.5'
Project: RGA 3 **Collection Date:** 4/23/2021 10:25:00 AM
Lab ID: 2104B59-001 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/30/2021 5:11:11 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2021 5:11:11 PM
Surr: DNOP	0.190	70-130	S	%Rec	1	4/30/2021 5:11:11 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	110	60		mg/Kg	20	4/30/2021 3:57:24 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.024		mg/Kg	1	4/30/2021 4:43:42 AM
Toluene	ND	0.048		mg/Kg	1	4/30/2021 4:43:42 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/30/2021 4:43:42 AM
Xylenes, Total	ND	0.097		mg/Kg	1	4/30/2021 4:43:42 AM
Surr: 1,2-Dichloroethane-d4	85.8	70-130		%Rec	1	4/30/2021 4:43:42 AM
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	4/30/2021 4:43:42 AM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	4/30/2021 4:43:42 AM
Surr: Toluene-d8	92.0	70-130		%Rec	1	4/30/2021 4:43:42 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/30/2021 4:43:42 AM
Surr: BFB	111	70-130		%Rec	1	4/30/2021 4:43:42 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Client Sample ID: BH21-07 0-0.5'
Project: RGA 3
Collection Date: 4/23/2021 10:30:00 AM
Lab ID: 2104B59-002 **Matrix:** SOIL
Received Date: 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	24	9.7		mg/Kg	1	4/30/2021 5:20:49 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2021 5:20:49 PM
Surr: DNOP	6.21	70-130	S	%Rec	1	4/30/2021 5:20:49 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	160	60		mg/Kg	20	4/30/2021 4:09:48 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.023		mg/Kg	1	4/30/2021 5:12:16 AM
Toluene	ND	0.046		mg/Kg	1	4/30/2021 5:12:16 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/30/2021 5:12:16 AM
Xylenes, Total	ND	0.093		mg/Kg	1	4/30/2021 5:12:16 AM
Surr: 1,2-Dichloroethane-d4	87.9	70-130		%Rec	1	4/30/2021 5:12:16 AM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	4/30/2021 5:12:16 AM
Surr: Dibromofluoromethane	98.3	70-130		%Rec	1	4/30/2021 5:12:16 AM
Surr: Toluene-d8	95.6	70-130		%Rec	1	4/30/2021 5:12:16 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/30/2021 5:12:16 AM
Surr: BFB	108	70-130		%Rec	1	4/30/2021 5:12:16 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-09 0-0.5'
Project: RGA 3 **Collection Date:** 4/23/2021 11:05:00 AM
Lab ID: 2104B59-003 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/30/2021 5:30:25 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/30/2021 5:30:25 PM
Surr: DNOP	0.780	70-130	S	%Rec	1	4/30/2021 5:30:25 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	330	61		mg/Kg	20	5/3/2021 11:40:14 AM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.023		mg/Kg	1	4/30/2021 5:40:49 AM
Toluene	ND	0.047		mg/Kg	1	4/30/2021 5:40:49 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/30/2021 5:40:49 AM
Xylenes, Total	ND	0.093		mg/Kg	1	4/30/2021 5:40:49 AM
Surr: 1,2-Dichloroethane-d4	85.7	70-130		%Rec	1	4/30/2021 5:40:49 AM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	4/30/2021 5:40:49 AM
Surr: Dibromofluoromethane	100	70-130		%Rec	1	4/30/2021 5:40:49 AM
Surr: Toluene-d8	97.1	70-130		%Rec	1	4/30/2021 5:40:49 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/30/2021 5:40:49 AM
Surr: BFB	110	70-130		%Rec	1	4/30/2021 5:40:49 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-10 0-0.5'
Project: RGA 3 **Collection Date:** 4/23/2021 11:10:00 AM
Lab ID: 2104B59-004 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/30/2021 5:40:06 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/30/2021 5:40:06 PM
Surr: DNOP	1.15	70-130	S	%Rec	1	4/30/2021 5:40:06 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	150	59		mg/Kg	20	5/3/2021 11:52:38 AM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.024		mg/Kg	1	4/30/2021 6:09:24 AM
Toluene	ND	0.049		mg/Kg	1	4/30/2021 6:09:24 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/30/2021 6:09:24 AM
Xylenes, Total	ND	0.097		mg/Kg	1	4/30/2021 6:09:24 AM
Surr: 1,2-Dichloroethane-d4	89.5	70-130		%Rec	1	4/30/2021 6:09:24 AM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	4/30/2021 6:09:24 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	4/30/2021 6:09:24 AM
Surr: Toluene-d8	95.0	70-130		%Rec	1	4/30/2021 6:09:24 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/30/2021 6:09:24 AM
Surr: BFB	110	70-130		%Rec	1	4/30/2021 6:09:24 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-05 0'
Project: RGA 3 **Collection Date:** 4/23/2021 10:20:00 AM
Lab ID: 2104B59-005 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	33	9.6		mg/Kg	1	4/30/2021 5:49:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/30/2021 5:49:53 PM
Surr: DNOP	2.21	70-130	S	%Rec	1	4/30/2021 5:49:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	110	60		mg/Kg	20	5/3/2021 12:05:02 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.024		mg/Kg	1	4/30/2021 6:38:01 AM
Toluene	ND	0.048		mg/Kg	1	4/30/2021 6:38:01 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/30/2021 6:38:01 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/30/2021 6:38:01 AM
Surr: 1,2-Dichloroethane-d4	89.0	70-130		%Rec	1	4/30/2021 6:38:01 AM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	4/30/2021 6:38:01 AM
Surr: Dibromofluoromethane	102	70-130		%Rec	1	4/30/2021 6:38:01 AM
Surr: Toluene-d8	97.3	70-130		%Rec	1	4/30/2021 6:38:01 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/30/2021 6:38:01 AM
Surr: BFB	113	70-130		%Rec	1	4/30/2021 6:38:01 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-05 0.5'
Project: RGA 3 **Collection Date:** 4/23/2021 10:40:00 AM
Lab ID: 2104B59-006 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/30/2021 5:59:42 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/30/2021 5:59:42 PM
Surr: DNOP	1.53	70-130	S	%Rec	1	4/30/2021 5:59:42 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	100	60		mg/Kg	20	5/3/2021 12:17:26 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.024		mg/Kg	1	4/30/2021 7:06:33 AM
Toluene	ND	0.048		mg/Kg	1	4/30/2021 7:06:33 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/30/2021 7:06:33 AM
Xylenes, Total	ND	0.097		mg/Kg	1	4/30/2021 7:06:33 AM
Surr: 1,2-Dichloroethane-d4	84.0	70-130		%Rec	1	4/30/2021 7:06:33 AM
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	1	4/30/2021 7:06:33 AM
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	4/30/2021 7:06:33 AM
Surr: Toluene-d8	98.6	70-130		%Rec	1	4/30/2021 7:06:33 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/30/2021 7:06:33 AM
Surr: BFB	110	70-130		%Rec	1	4/30/2021 7:06:33 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-08 0'
Project: RGA 3 **Collection Date:** 4/23/2021 10:35:00 AM
Lab ID: 2104B59-007 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	1900	93		mg/Kg	10	4/30/2021 7:18:51 PM
Motor Oil Range Organics (MRO)	1500	460		mg/Kg	10	4/30/2021 7:18:51 PM
Surr: DNOP	0	70-130	S	%Rec	10	4/30/2021 7:18:51 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	170	60		mg/Kg	20	5/3/2021 12:29:51 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.024		mg/Kg	1	4/30/2021 7:35:07 AM
Toluene	ND	0.047		mg/Kg	1	4/30/2021 7:35:07 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/30/2021 7:35:07 AM
Xylenes, Total	ND	0.094		mg/Kg	1	4/30/2021 7:35:07 AM
Surr: 1,2-Dichloroethane-d4	87.6	70-130		%Rec	1	4/30/2021 7:35:07 AM
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	4/30/2021 7:35:07 AM
Surr: Dibromofluoromethane	104	70-130		%Rec	1	4/30/2021 7:35:07 AM
Surr: Toluene-d8	93.8	70-130		%Rec	1	4/30/2021 7:35:07 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/30/2021 7:35:07 AM
Surr: BFB	109	70-130		%Rec	1	4/30/2021 7:35:07 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2104B59**
Date Reported: **5/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH21-08 2'
Project: RGA 3 **Collection Date:** 4/23/2021 11:00:00 AM
Lab ID: 2104B59-008 **Matrix:** SOIL **Received Date:** 4/28/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/30/2021 6:09:32 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/30/2021 6:09:32 PM
Surr: DNOP	1.16	70-130	S	%Rec	1	4/30/2021 6:09:32 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	84	60		mg/Kg	20	5/3/2021 12:42:15 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**
Benzene	ND	0.025		mg/Kg	1	4/30/2021 8:03:46 AM
Toluene	ND	0.050		mg/Kg	1	4/30/2021 8:03:46 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/30/2021 8:03:46 AM
Xylenes, Total	ND	0.10		mg/Kg	1	4/30/2021 8:03:46 AM
Surr: 1,2-Dichloroethane-d4	84.5	70-130		%Rec	1	4/30/2021 8:03:46 AM
Surr: 4-Bromofluorobenzene	93.9	70-130		%Rec	1	4/30/2021 8:03:46 AM
Surr: Dibromofluoromethane	101	70-130		%Rec	1	4/30/2021 8:03:46 AM
Surr: Toluene-d8	97.7	70-130		%Rec	1	4/30/2021 8:03:46 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/30/2021 8:03:46 AM
Surr: BFB	110	70-130		%Rec	1	4/30/2021 8:03:46 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B59**

04-May-21

Client: Vertex Resource Group Ltd.

Project: RGA 3

Sample ID: **MB-59736** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **59736** RunNo: **77066**

Prep Date: **4/30/2021** Analysis Date: **4/30/2021** SeqNo: **2732225** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-59736** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **59736** RunNo: **77066**

Prep Date: **4/30/2021** Analysis Date: **4/30/2021** SeqNo: **2732226** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.0	90	110			

Sample ID: **LCS-59759** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **59759** RunNo: **77110**

Prep Date: **5/3/2021** Analysis Date: **5/3/2021** SeqNo: **2733792** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Sample ID: **MB-59759** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **59759** RunNo: **77110**

Prep Date: **5/3/2021** Analysis Date: **5/3/2021** SeqNo: **2733793** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B59**
04-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **MB-59723**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **59723**	RunNo: **77092**
Prep Date: **4/29/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733162** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Sample ID: **LCS-59723**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **59723**	RunNo: **77092**
Prep Date: **4/29/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733163** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	10	50.00	0	122	68.9	141			
Surr: DNOP	5.9		5.000		117	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B59**
04-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **lcs-59695** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **59695** RunNo: **77056**
Prep Date: **4/28/2021** Analysis Date: **4/29/2021** SeqNo: **2731350** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	0.95	0.050	1.000	0	94.6	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.2	80	120			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.4	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		93.3	70	130			

Sample ID: **mb-59695** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **59695** RunNo: **77056**
Prep Date: **4/28/2021** Analysis Date: **4/29/2021** SeqNo: **2731351** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		86.1	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.8	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.4	70	130			
Surr: Toluene-d8	0.46		0.5000		91.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104B59**
04-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **lcs-59695**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **59695**	RunNo: **77056**
Prep Date: **4/28/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731467** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	70	130			
Surr: BFB	560		500.0		111	70	130			

Sample ID: **mb-59695**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **59695**	RunNo: **77056**
Prep Date: **4/28/2021**	Analysis Date: **4/29/2021**	SeqNo: **2731469** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	540		500.0		108	70	130			

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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Vertex Resource Group Ltd.** Work Order Number: **2104B59** RcptNo: 1

Received By: **Cheyenne Cason** **4/28/2021 8:00:00 AM**

Completed By: **Cheyenne Cason** **4/28/2021 9:12:56 AM**

Reviewed By: SGL 4/28/21

Chain of Custody

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

Log In

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

IO 4/28/21

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by:

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day
☑ Standard ☐ Rush

Project Name: RGA #3

Project #: 21E-01340

Project Manager: Monica Peppin

Sampler: CD

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 4.1 - 0.2 = 3.9 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No 2104359	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/23	10:25	Soil	BH21-06 0-0.5'	4oz	ice	001	✓	✓					✓			
	10:30		BH21-07 0-0.5'			002										
	11:05		BH21-09 0-0.5'			003										
	11:10		BH21-10 0-0.5'			004										
	10:20		BH21-05 0'			005										
	10:40		BH21-05 0.5'			006										
	10:35		BH21-08 0'			007										
	11:00		BH21-08 2'			008										
~~4/23~~	~~11:25~~	~~Soil~~	~~BH21-08 2.5~~	~~4oz~~	~~ice~~		✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/26/21	1150				4/27/21	1150
4/29/21	1900				4/28/21	0800

Remarks: CC: M. Peppin

BTA Oil

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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 05, 2021

Monica Peppin

Vertex Resource Group Ltd.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: RGA 3 OrderNo.: 2104D06

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/30/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Client Sample ID: BS21-01 2'
Project: RGA 3
Collection Date: 4/28/2021 10:05:00 AM
Lab ID: 2104D06-001 **Matrix:** SOIL
Received Date: 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	5/4/2021 7:29:39 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/4/2021 7:29:39 PM
Surr: DNOP	96.0	70-130		%Rec	1	5/4/2021 7:29:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/3/2021 9:52:19 PM
Surr: BFB	91.4	70-130		%Rec	1	5/3/2021 9:52:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/3/2021 9:52:19 PM
Toluene	ND	0.050		mg/Kg	1	5/3/2021 9:52:19 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/3/2021 9:52:19 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/3/2021 9:52:19 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	5/3/2021 9:52:19 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	160	60		mg/Kg	20	5/4/2021 2:50:40 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Client Sample ID: BS21-02 0.5'
Project: RGA 3
Collection Date: 4/28/2021 10:10:00 AM
Lab ID: 2104D06-002 **Matrix:** SOIL **Received Date:** 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	39	8.7		mg/Kg	1	5/4/2021 7:39:40 PM
Motor Oil Range Organics (MRO)	49	44		mg/Kg	1	5/4/2021 7:39:40 PM
Surr: DNOP	112	70-130		%Rec	1	5/4/2021 7:39:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/3/2021 10:15:53 PM
Surr: BFB	89.7	70-130		%Rec	1	5/3/2021 10:15:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/3/2021 10:15:53 PM
Toluene	ND	0.048		mg/Kg	1	5/3/2021 10:15:53 PM
Ethylbenzene	ND	0.048		mg/Kg	1	5/3/2021 10:15:53 PM
Xylenes, Total	ND	0.096		mg/Kg	1	5/3/2021 10:15:53 PM
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	5/3/2021 10:15:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	160	60		mg/Kg	20	5/4/2021 3:03:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Client Sample ID: WS21-01 0-2'
Project: RGA 3
Collection Date: 4/28/2021 10:20:00 AM
Lab ID: 2104D06-003 **Matrix:** SOIL
Received Date: 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	5/4/2021 7:59:29 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	5/4/2021 7:59:29 PM
Surr: DNOP	91.5	70-130		%Rec	1	5/4/2021 7:59:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/3/2021 10:39:23 PM
Surr: BFB	89.4	70-130		%Rec	1	5/3/2021 10:39:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/3/2021 10:39:23 PM
Toluene	ND	0.050		mg/Kg	1	5/3/2021 10:39:23 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/3/2021 10:39:23 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/3/2021 10:39:23 PM
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	5/3/2021 10:39:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	240	60		mg/Kg	20	5/4/2021 3:15:29 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** WS21-02 0-2'
Project: RGA 3 **Collection Date:** 4/28/2021 10:25:00 AM
Lab ID: 2104D06-004 **Matrix:** SOIL **Received Date:** 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/4/2021 8:09:31 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/4/2021 8:09:31 PM
Surr: DNOP	101	70-130		%Rec	1	5/4/2021 8:09:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/3/2021 11:02:50 PM
Surr: BFB	90.1	70-130		%Rec	1	5/3/2021 11:02:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/3/2021 11:02:50 PM
Toluene	ND	0.049		mg/Kg	1	5/3/2021 11:02:50 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/3/2021 11:02:50 PM
Xylenes, Total	ND	0.097		mg/Kg	1	5/3/2021 11:02:50 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/3/2021 11:02:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	100	59		mg/Kg	20	5/4/2021 3:27:53 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** WS21-03 0-0.5'
Project: RGA 3 **Collection Date:** 4/28/2021 10:30:00 AM
Lab ID: 2104D06-005 **Matrix:** SOIL **Received Date:** 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/4/2021 8:19:26 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/4/2021 8:19:26 PM
Surr: DNOP	92.8	70-130		%Rec	1	5/4/2021 8:19:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/3/2021 11:26:29 PM
Surr: BFB	90.7	70-130		%Rec	1	5/3/2021 11:26:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	5/3/2021 11:26:29 PM
Toluene	ND	0.050		mg/Kg	1	5/3/2021 11:26:29 PM
Ethylbenzene	ND	0.050		mg/Kg	1	5/3/2021 11:26:29 PM
Xylenes, Total	ND	0.099		mg/Kg	1	5/3/2021 11:26:29 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/3/2021 11:26:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	150	60		mg/Kg	20	5/4/2021 3:40:18 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2104D06**
Date Reported: **5/5/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** WS21-04 0-2'
Project: RGA 3 **Collection Date:** 4/28/2021 10:35:00 AM
Lab ID: 2104D06-006 **Matrix:** SOIL **Received Date:** 4/30/2021 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	7.8		mg/Kg	1	5/4/2021 8:29:24 PM
Motor Oil Range Organics (MRO)	ND	39		mg/Kg	1	5/4/2021 8:29:24 PM
Surr: DNOP	95.4	70-130		%Rec	1	5/4/2021 8:29:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/3/2021 11:50:08 PM
Surr: BFB	90.7	70-130		%Rec	1	5/3/2021 11:50:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	5/3/2021 11:50:08 PM
Toluene	ND	0.049		mg/Kg	1	5/3/2021 11:50:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/3/2021 11:50:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/3/2021 11:50:08 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	5/3/2021 11:50:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **VP**
Chloride	140	59		mg/Kg	20	5/4/2021 3:52:42 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104D06**
05-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **MB-59801**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **59801**	RunNo: **77141**							
Prep Date: **5/4/2021**	Analysis Date: **5/4/2021**	SeqNo: **2735343**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-59801**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **59801**	RunNo: **77141**							
Prep Date: **5/4/2021**	Analysis Date: **5/4/2021**	SeqNo: **2735344**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104D06**
05-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **MB-59808**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **59808**	RunNo: **77124**
Prep Date: **5/4/2021**	Analysis Date: **5/4/2021**	SeqNo: **2735768** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.8	70	130			

Sample ID: **LCS-59808**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **59808**	RunNo: **77124**
Prep Date: **5/4/2021**	Analysis Date: **5/4/2021**	SeqNo: **2735769** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.8	68.9	141			
Surr: DNOP	4.7		5.000		93.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104D06**
05-May-21

Client: Vertex Resource Group Ltd.
Project: RGA 3

Sample ID: **mb-59749**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **59749**	RunNo: **77102**
Prep Date: **4/30/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733595** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.9	70	130			

Sample ID: **lcs-59749**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **59749**	RunNo: **77102**
Prep Date: **4/30/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733601** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.0	78.6	131			
Surr: BFB	1000		1000		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104D06**

05-May-21

Client: Vertex Resource Group Ltd.

Project: RGA 3

Sample ID: **mb-59749**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **59749**	RunNo: **77102**
Prep Date: **4/30/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: **LCS-59749**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **59749**	RunNo: **77102**
Prep Date: **4/30/2021**	Analysis Date: **5/3/2021**	SeqNo: **2733713** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.5	80	120			
Toluene	0.98	0.050	1.000	0	98.4	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	70	130			

Qualifiers:

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

ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resource Group Ltd.

Work Order Number: 2104D06

RcptNo: 1

Received By: Juan Rojas 4/30/2021 7:35:00 AM

Completed By: Cheyenne Cason 4/30/2021 8:04:07 AM

Reviewed By: ENM 4/30/21

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑

TO

# of preserved bottles checked for pH: 4/30/21 (<2 or >12 unless noted)

Adjusted?

Checked by:

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 ☐

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.4	Good				

Chain-of-Custody Record

Client: Vertex

Mailing Address: On File

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day
☒ Standard ☐ Rush

Project Name: RGA #3

Project #: 21E-01340

Project Manager: Monica Peppin

Sampler: JR

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.4-0=0.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2104006	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/28	10:05	soil	BS21-01 2'	4/07	ice	001										
	10:10		BS21-02 0.5'			002										
	10:20		WS21-01 0-2			003										
	10:25		WS21-02 0-2			004										
	10:30		WS21-03 0-0.5			005										
	10:35		WS21-04 0-2			006										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					4/29/21	1145
Date: 4/29/21	Time: 1400	Relinquished by:	Received by:	Via: courier	Date 4/30/21	Time 7:35

Remarks: CC: Monica Peppin

BTA

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.

ATTACHMENT 8


SP4
SP5
SP10
SP11
SP3
SP6
SP9
SP12
SP1
SP2
SP7
SP8
SP13
32.300213 -104.064087

NAME OF Location & Release date RGA #3 3/15/2021
OCD TRACKING #: nAPP2107450435

Location	GPS Coordinates	Sample Date	Sample Depth (feet BGS)	Field Screening		Laboratory Results										
				PID Result (PPM)	Titration Result (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	TPH GRO + DRO (mg/kg)	BTEX (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH Ext DRO (mg/kg)
SP 1	32.300307 -104.064139	3/26/21	Surface	>15,000	7,147	6,960	23,686	19,716	7.33	<0.050	0.376	1.02	5.93	316	19,400	3,970
SP 1		4/16/21	1	-	-	640	66.7	66.7	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	66.7	<10.0
SP 2	32.300296 -104.064110	3/26/21	Surface	>15,000	1,574	1,260	6,109	5,059.30	0.699	<0.050	<0.050	0.079	0.62	59.3	5,000	1,050
SP 2		4/16/21	1	-	-	944	70	70	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	70	<10.0
SP 3	32.300326 -104.064111	3/26/21	Surface	>15,000	249	128	18,134	15,544	30	<0.100	2.07	4.63	23.3	844	14,700	2,590
SP 3		4/16/21	1	-	-	1,220	46.7	46.7	<0.300	<0.050	<0.050	>0.050	<0.150	<10.0	46.7	<10.0
SP 4	32.300359 -104.064112	3/26/21	Surface	50	799	688	<62.4	<51.3	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	41.3	11.1
SP 4		4/16/21	1	-	-	960	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 5	32.300370 -104.064060	3/26/21	Surface	7	824	560	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 6	32.300328 -104.064064	3/26/21	Surface	78.4	1,999	1,840	<13,190	<10,850	<0.300	<0.050	<0.050	<0.050	<0.150	<50.0	10,800	2,340
SP 6		4/16/21	Surface	-	-	1,880	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 7	32.300291 -104.064062	3/26/21	Surface	16.8	3,374	352	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 8	32.300293 104.063995	3/26/21	Surface	6.7	524	368	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 8		4/16/21	Surface	-	-	1,550	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 9	32.300327 -104.063994	3/26/21	Surface	7.7	374	336	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 10	32.300366 -104.063993	3/26/21	Surface	3.9	699	512	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 10		4/16/21	Surface	-	-	1,640	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 11	32.300366 -104.063923	3/26/21	Surface	2.4	449	320	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 12	32.300330 -104.063920	3/26/21	Surface	2.9	249	208	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 13	32.300292 -104.063917	3/26/21	Surface	3.2	249	208	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0
SP 13		4/16/21	Surface	-	-	1,720	<30.0	<20.0	<0.300	<0.050	<0.050	<0.050	<0.150	<10.0	<10.0	<10.0

NMOCD Table 1 - Closure Criteria for Soils Impacted by a Release (19.15.29.12)
Minimum Depth to GW less than 10,000 mg/l TDS

<= 50'	600	100	-	50	10
51' - 100'	10,000	2,500	1,000	50	10
>100'	20,000	2,500	1,000	50	10

Reporting Limits:
Chloride: 16.0 mg/kg
Benzene, Toluene, Ethylbenzene: 0.050 mg/kg for each analyte
Total Xylenes: 0.150 mg/kg
Total BTEX: 0.300 mg/kg
GRO (C6 - C10), DRO (>C10 - C28), Ext DRO (>C28 - C36): 10.0 mg/kg for each analyte

CARDINAL Laboratories

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

March 30, 2021

MICHAEL ALVES

BTA Oil Producers

103 South Pecos

Midland, TX 79701

RE: RGA #3

Enclosed are the results of analyses for samples received by the laboratory on 03/29/21 8:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 1 @ SURFACE (H210769-01)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	**0.376**	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	**1.02**	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	**5.93**	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	**7.33**	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *184 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6960**	16.0	03/30/2021	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**316**	50.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	**19400**	50.0	03/29/2021	ND	223	111	200	3.27	QM-07, QR-03
EXT DRO >C28-C36	**3970**	50.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *141 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *608 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 2 @ SURFACE (H210769-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	**0.079**	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	**0.620**	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	**0.699**	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *122 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1260**	16.0	03/30/2021	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**59.3**	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	**5000**	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	**1050**	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *117 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *205 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 3 @ SURFACE (H210769-03)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	**2.07**	0.100	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	**4.63**	0.100	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	**23.3**	0.300	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	**30.0**	0.600	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *229 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	03/30/2021	ND	416	104	400	3.92	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**844**	50.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	**14700**	50.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	**2590**	50.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *189 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *396 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 4 @ SURFACE (H210769-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**688**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	**41.3**	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	**11.1**	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *75.5 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *74.5 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 5 @ SURFACE (H210769-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *74.8 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *71.3 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 6 @ SURFACE (H210769-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1840**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	**10800**	50.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	**2340**	50.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *91.5 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *366 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 7 @ SURFACE (H210769-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *72.2 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *70.0 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 8 @ SURFACE (H210769-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**368**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *75.3 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *72.2 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 9 @ SURFACE (H210769-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**336**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *73.2 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *70.3 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 10 @ SURFACE (H210769-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**512**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *79.8 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *78.6 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 11 @ SURFACE (H210769-11)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.11	105	2.00	5.69	
Toluene*	<0.050	0.050	03/29/2021	ND	2.06	103	2.00	5.67	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.99	99.6	2.00	5.31	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.88	98.0	6.00	4.87	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *75.6 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *73.2 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 12 @ SURFACE (H210769-12)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.14	107	2.00	4.56	
Toluene*	<0.050	0.050	03/29/2021	ND	2.08	104	2.00	4.82	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.98	98.9	2.00	4.56	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.78	96.4	6.00	4.03	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *76.3 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *72.0 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
MICHAEL ALVES
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	03/29/2021	Sampling Date:	03/26/2021
Reported:	03/30/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 13 @ SURFACE (H210769-13)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2021	ND	2.14	107	2.00	4.56	
Toluene*	<0.050	0.050	03/29/2021	ND	2.08	104	2.00	4.82	
Ethylbenzene*	<0.050	0.050	03/29/2021	ND	1.98	98.9	2.00	4.56	
Total Xylenes*	<0.150	0.150	03/29/2021	ND	5.78	96.4	6.00	4.03	
Total BTEX	<0.300	0.300	03/29/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: GM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	03/30/2021	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/29/2021	ND	217	108	200	2.61	
DRO >C10-C28*	<10.0	10.0	03/29/2021	ND	223	111	200	3.27	
EXT DRO >C28-C36	<10.0	10.0	03/29/2021	ND					

Surrogate: 1-Chlorooctane *75.3 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *73.4 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	BTA oil producer
Project Manager:	
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	
Project Location:	RGA #3
Sampler Name:	Miguel Gomez

BILL TO

P.O. #:	
Company:	BTA
Attn:	Bob Hall
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	CL	TPH	BTEX
H210769																	
1	SP1@Surf	G	1			X					X		3-26-21	11:58	X	X	X
2	SP2@Surf	G	1			X					X			12:00	X	X	X
3	SP3@Surf	G	1			X					X			12:01	X	X	X
4	SP4@Surf	G	1			X					X			12:03	X	X	X
5	SP5@Surf	G	1			X					X			12:05	X	X	X
6	SP6@Surf	G	1			X					X			12:07	X	X	X
7	SP7@Surf	G	1			X					X			12:09	X	X	X
8	SP8@Surf	G	1			X					X			12:12	X	X	X
9	SP9@Surf	G	1			X					X			12:15	X	X	X
10	SP10@Surf	G	1			X					X		3-26-21	12:17	X	X	X

Relinquished By:	Date: 3-29-21	Received By:	
	Time: 0830		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -4.3 #113

Sample Condition: Cool ☑ Yes ☐ No; Intact ☐ Yes ☐ No
CHECKED BY: (Initials) T.O.

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

Michael@expeteenvironservice.com

Rush! added 3/30 @ 0804 T.O.

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: BTA oil producer		**BILL TO**	
Project Manager:		P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location: RGA #3		Phone #:	
Sampler Name: Miguel Sosa		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	CL	TPH	BTEX
H210769																	
11	Spl1@ surf	G	1			X					X		3-26-21	12:19	X	X	X
12	Spl2@surf	G	1			X					X		3-26-21	12:22	X	X	X
13	Spl3@surf	G	1			X					X		3-26-21	12:25	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 3-29-21 Time: 0830	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: -4.3 #113	Sample Condition Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials) T.B.	REMARKS: Michael@expertenviroservice.com Rush! added 3/30 @0804 T.B.

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

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

April 19, 2021

BOB HALL

BTA Oil Producers

103 South Pecos

Midland, TX 79701

RE: RGA #3

Enclosed are the results of analyses for samples received by the laboratory on 04/16/21 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 1 @ 1 (H210986-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**640**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	**66.7**	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *106 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *117 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 2 @ 1 (H210986-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**944**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	**70.0**	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *107 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *118 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 3 @ 1 (H210986-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1220**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	**46.7**	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *104 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *116 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 4 @ 1 (H210986-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**960**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	<10.0	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *109 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *115 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 6 @ SURFACE (H210986-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1880**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	<10.0	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *112 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *118 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 8 @ SURFACE (H210986-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1550**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	<10.0	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *111 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *118 %* *42.2-156*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 10 @ SURFACE (H210986-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1640**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	<10.0	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *112 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *118 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

BTA Oil Producers
BOB HALL
103 South Pecos
Midland TX, 79701
Fax To: (432) 683-0312

Received:	04/16/2021	Sampling Date:	04/16/2021
Reported:	04/19/2021	Sampling Type:	Soil
Project Name:	RGA #3	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: SP 13 @ SURFACE (H210986-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/16/2021	ND	2.21	111	2.00	5.37	
Toluene*	<0.050	0.050	04/16/2021	ND	2.10	105	2.00	5.83	
Ethylbenzene*	<0.050	0.050	04/16/2021	ND	2.09	104	2.00	5.17	
Total Xylenes*	<0.150	0.150	04/16/2021	ND	6.18	103	6.00	5.30	
Total BTEX	<0.300	0.300	04/16/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1720**	16.0	04/19/2021	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2021	ND	188	94.1	200	1.02	
DRO >C10-C28*	<10.0	10.0	04/16/2021	ND	192	95.9	200	2.90	
EXT DRO >C28-C36	<10.0	10.0	04/16/2021	ND					

Surrogate: 1-Chlorooctane *105 %* *44.3-144*

Surrogate: 1-Chlorooctadecane *111 %* *42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: BTA oil Producer	**BILL TO**
Project Manager:	P.O. #:
Address:	Company: BTA
City: State: Zip:	Attn: Bob Hall
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: RGA #3	Phone #:
Sampler Name: Miguel Gomez	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Cl	TPH	BTEX
H210986																	
1	SP1@1	G				X							4-16-21	8:23	X	X	X
2	SP2@1	G				X								8:25	X	X	X
3	SP3@1	G				X								8:27	X	X	X
4	SP4@1	G				X								8:29	X	X	X
5	SP6@Surf	G				X								8:33	X	X	X
6	SP8@Surf	G				X								8:40	X	X	X
7	SP10@Surf	G				X								8:45	X	X	X
8	SP13@Surf	G				X							4-16-21	8:50	X	X	X

Relinquished By:	Date: 4-16-21 Time: 1440	Received By: Tamara Oldaker	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 2.6c #113	Sample Condition Cool: ☒ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials) TO.	REMARKS: michael@expertenviroservices.com Bush!

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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 44666

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 44666
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2107450435 RGA 3, thank you. This closure is approved.	1/7/2022