



January 25, 2021

Vertex Project #: 20E-00239-002

Spill Closure Report: Rodney Robinson 101H Lease Road
Unit L, Section 6, Township 24 South, Range 32 East
County: Lea
API: 30-025-46278
NM OCD Incident Tracking Number: NRM2003757362

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

New Mexico Oil Conservation Division – District 1 – Hobbs

1625 North French Drive
Hobbs, New Mexico 88240

Matador Production Company (Matador) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water release that occurred at Rodney Robinson 101H Lease Road, API 30-025-46278 (hereafter referred to as “Rodney Lease Road”). Vertex provided immediate notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 1, and Bureau of Land Management (BLM), who owns the property, on January 24, 2020, via email. The initial C-141 Release Notification (Attachment 1) was submitted on February 5, 2020. The NM OCD tracking number assigned to this incident is NRM2003757362.

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 NM OCD for closure of this release.

Incident Description

On January 24, 2020, a release occurred at Matador’s Rodney Lease Road site when a third-party contractor working on grading the lease road pulled off to the edge of the road to let traffic pass and nicked the produced water poly line with the machine’s blade. This incident resulted in the release of approximately 41 barrels (bbls) of produced water onto the lease road, where it traveled downgrade along the compacted lease road. The produced water poly line was pinched off on both sides to stop the release, and the poly line was repaired. No produced water was recovered from the site. A small section of BLM land bordering the road at the western end of the release footprint was affected.

Site Characterization

The release at Rodney Lease Road occurred on federally-owned land, N 32.244466, W 103.719877, approximately 22 miles west of Loving, New Mexico. The legal description for the site is Unit L, Section 6, Township 24 South, Range 32 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has

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historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included on Figure 1 (Attachment 2).

Rodney Lease Road is typical of oil and gas exploration and production lease roads in the western portion of the Permian Basin, and is currently used by heavy equipment and transport trucks to access the Rodney Robinson 101H wellpad. The following sections specifically describe the release area along the lease road leading to the wellpad.

The surrounding landscape is associated with sandy plains, interdunes and dunes at elevations of 2,700 to 5,500 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 8 and 14 inches. Historically, the plant community was dominated by grasses, which stabilized the potentially erosive sandy soils; however, more recent conditions, resulting from fire suppression and extensive grazing, show increased woody plant abundance. The dominant grass species are black grama, dropseeds and bluestems, with scattered shinnery oak and sand sage. Litter and, to a lesser extent, bare ground are a significant proportion of ground cover while grasses compose the remainder (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted lease road.

The Geological Map of New Mexico indicates the surface geology at Rodney Lease Road is comprised primarily of Qep – interlayered eolian sands and piedmont-slope deposits from the Holocene to middle Pleistocene ages (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resources Conservation Service (NRCS) Web Soil Survey characterizes the soil at the site as Pyote and Maljamar fine sands, characterized by deep, fine sandy and loamy fine sandy soil. It tends to be well-drained with very low-to-negligible runoff and 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 erosional karst geology to be present near Rodney Lease Road (United States Department of the Interior, United States Geological Survey, 2020a).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is located approximately 2 miles east of the site (United States Fish and Wildlife, 2020). At Rodney Lease Road, 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 Rodney Lease Road is a United States Geologic Survey (USGS)-identified well from 2013, located approximately 1.5 miles to the northeast. Depth to groundwater at this well is 380 feet below ground surface (bgs; United States Department of the Interior, United States Geological Survey, 2020b). 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 3) 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 Rodney Lease Road is not

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subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC. As the nearest groundwater well is farther than 0.5-miles from the release site, the depth to groundwater at Rodney Robinson cannot be accurately determined 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

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

²Benzene, toluene, ethylbenzene and xylenes (BTEX)

Remedial Actions

An initial spill inspection, completed on January 24, 2020, identified and mapped the boundaries of the release area. The release area was determined to be approximately 94 feet long and 70 feet wide; the total affected area was determined to be 3,291 square feet. The Daily Field Report (DFR) associated with the initial spill inspection is included in Attachment 4.

On February 3, 2020, Vertex provided 48-hour notification of remediation and confirmation sampling to NM OCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 5). On February 6, 2020, Vertex was on-site to oversee remediation efforts involving the removal of contaminated soil from the impacted roadway and adjacent BLM land. A two-inch scrape of potentially impacted soil along the roadway was conducted with the use of a bulldozer; two additional areas immediately adjacent to the lease road surface were excavated to a depth of six inches. Four composite confirmatory samples were collected, placed into laboratory-provided containers, preserved on ice and submitted to a National Environmental Laboratory Accreditation Program (NELAP)-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. Initial confirmatory sampling analytical data are summarized in Table 2 (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 was used to map the approximate center of each of the initial confirmatory samples and the locations are presented on Figure 2 (Attachment 2).

Closure Request Denial and Additional Activities

On March 12, 2020, Matador requested closure for the release at Rodney Lease Road, at Vertex's recommendation.

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On June 8, 2020, the NM OCD denied closure for this incident based on the following:

- Insufficient samples were tested for TPH, BTEX, and Benzene.
- The entire spill is considered off-site and requires remediation to the <50' depth to groundwater criteria as shown in Table 1.

On December 18, 2020, Vertex provided 48-hour notification of additional remediation and confirmation sampling to NM OCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 5). On December 22, 2020, Vertex was onsite to oversee additional remediation of the lease road, using field screening methods to guide excavation and verify that the release was remediated to the extent required.

Following the completion of excavation activities, Vertex collected a total of 72 five-point composite confirmatory samples from the base and sidewalls of the new excavation, at depths ranging between ground surface and one-foot 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 NM OCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a NELAP-approved laboratory for chemical analysis.

Laboratory analysis included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. The new confirmatory sampling analytical data are summarized in Table 3 (Attachment 6). Laboratory data reports and chain of custody forms are included in Attachment 7.

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

Closure Request

Vertex does not recommend any further action to address the release at Rodney Lease Road. Laboratory analyses of the re-collected confirmatory samples show constituent of concern concentration levels below the most stringent NM OCD Closure Criteria for areas where depth to groundwater is less than 50 feet bgs, or where the release occurred off-lease, as presented in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

The areas of excavation have been backfilled with non-waste containing, uncontaminated, earthen material, sourced locally, and the lease road and adjacent remediation areas have been returned to near-original grade.

Vertex requests that this incident (NRM2003757362) be closed as the original closure request denial (Attachment 8) reasons have been addressed and closure requirements set forth in Subsection E of 19.15.29.12 NMAC and restoration requirements set forth in 19.15.29.13 NMAC have been met. Matador 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 NM OCD requirements to obtain closure on the January 24, 2020, release at Rodney Lease Road.

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Should you have any questions or concerns, please do not hesitate to contact the undersigned at 505.506.0040 or ngordon@vertex.ca.

Sincerely,



Natalie Gordon
PROJECT MANAGER

Attachments

- Attachment 1. NM OCD C-141 Report
- Attachment 2. Figures
- Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 4. Daily Field Report(s) with Photographs
- Attachment 5. Required 48-hr Notifications of Confirmation Sampling to Regulatory Agencies
- Attachment 6. Tables
- Attachment 7. Laboratory Data Reports/Chain of Custody Forms
- Attachment 8. NM OCD Original Closure Denial

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References

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- New Mexico Oil Conservation Division. (2018). *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, United States Geological Survey. (2020a). *Caves and Karst in the U.S. National Park Service, AGI Karst Map of the U.S.* Retrieved from <https://www.arcgis.com/home/webmap/viewer.html?webmap=14675403c37948129acb758138f2dd1e>
- United States Department of the Interior, United States Geological Survey. (2020b). *Groundwater for New Mexico: Water Levels*. Retrieved from <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>.
- United States Environmental Protection Agency. (2002). *Guidance on Choosing a Sampling Design for Environmental Data Collection*. Retrieved from <https://www.epa.gov/quality/guidance-choosing-sampling-design-environmental-data-collection-use-developing-quality>.
- United States Fish and Wildlife. (2020). *National Wetlands Inventory*. Retrieved from <https://www.fws.gov/wetlands/Data/Mapper.html>.

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Limitations

This report has been prepared for the sole benefit of Matador Production Company (Matador). 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 Matador. 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.

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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	NRM2003757362
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Matador Production Company	OGRID: 228937
Contact Name: John Hurt	Contact Telephone: 972-371-5200
Contact email: JHurt@matadorresources.com	Incident # (assigned by OCD)
Contact mailing address: 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	

Location of Release Source

Latitude 32.244466 Longitude -103.719877
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Rodney Robinson Federal 101H Lease Road	Site Type: Oil Well Lease Road
Date Release Discovered: 01/24/2020	API# (if applicable) 30-025-46278

Unit Letter	Section	Township	Range	County
L	6	24S	32E	Lea

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 41 bbls	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/>	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

A third-party contractor working on grading the lease road pulled off to edge of road to let traffic pass and nicked produced water poly line with the machine's blade.

All fluid traveled downgrade along the lease road.

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? > 25 bbls
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, Natalie Gordon of Vertex notified NM OCD District 1 and BLM of release on 1/24/2020 via email.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>John Hurt</u>	Title: <u>RES Specialist</u>
Signature: <u></u>	Date: <u>2/24/20</u>
email: <u>JHurt@matadorresources.com</u>	Telephone: <u>972- 371-5200</u>
<u>OCD Only</u> Received by: _____ Date: _____	

Form C-141

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

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

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

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

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

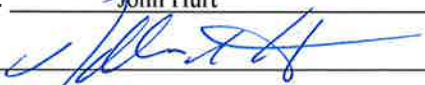
Form C-141

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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: John Hurt Title: RES Specialist
Signature:  Date: 1/25/21
email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: _____ Date: _____

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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: John Hurt Title: RES Specialist
Signature:  Date: 1/25/21
email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

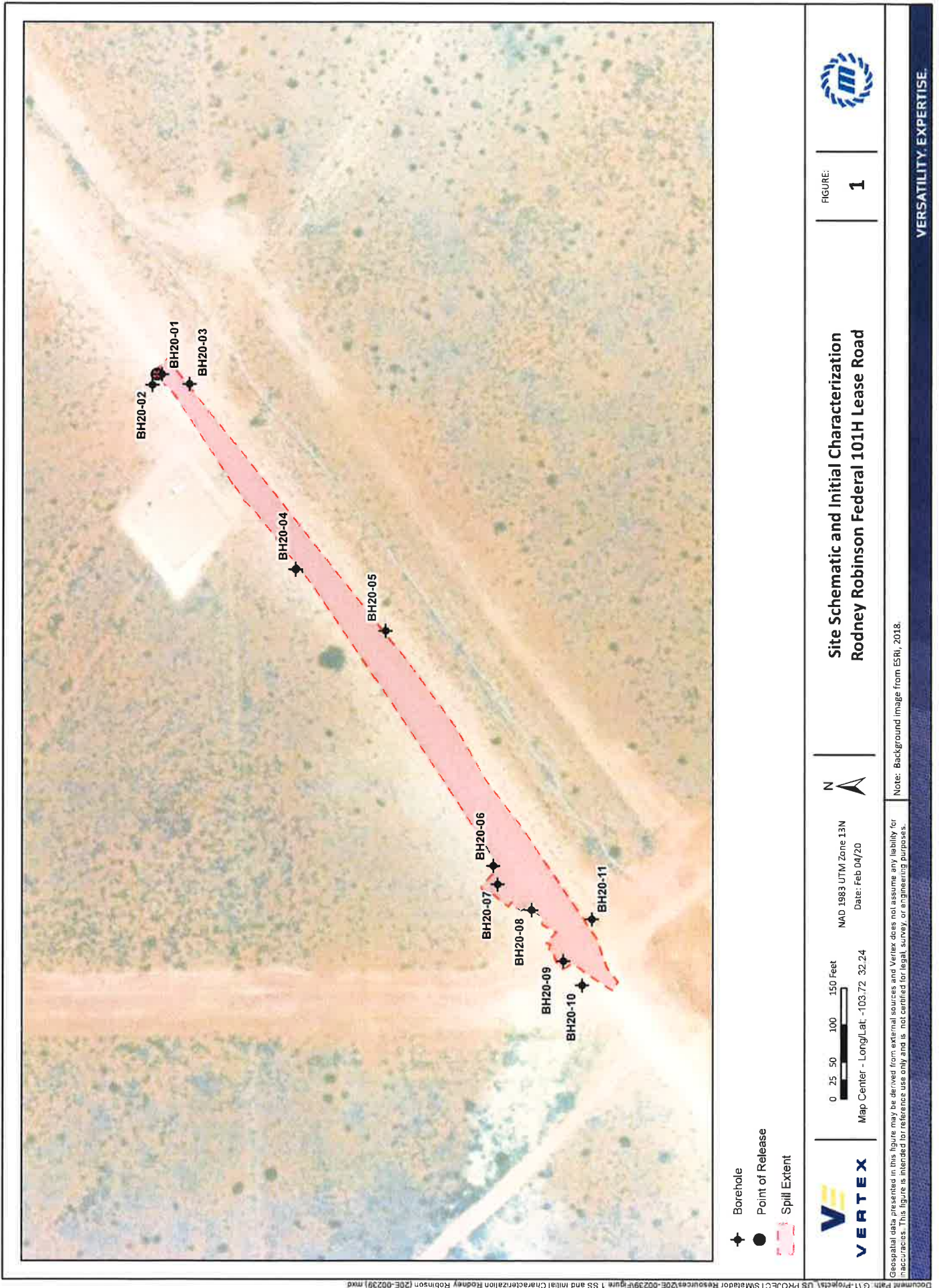
Received by: _____ Date: _____

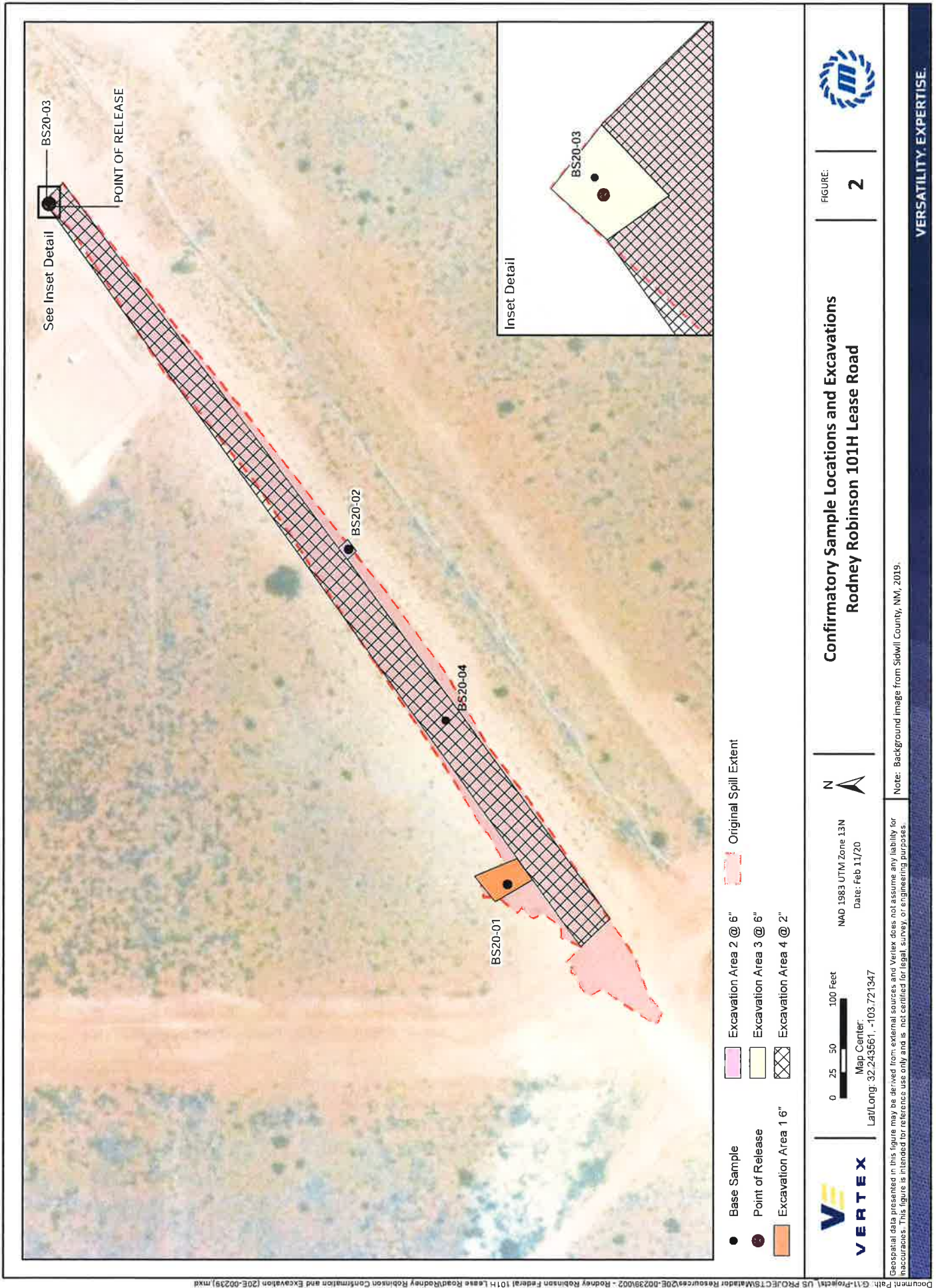
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

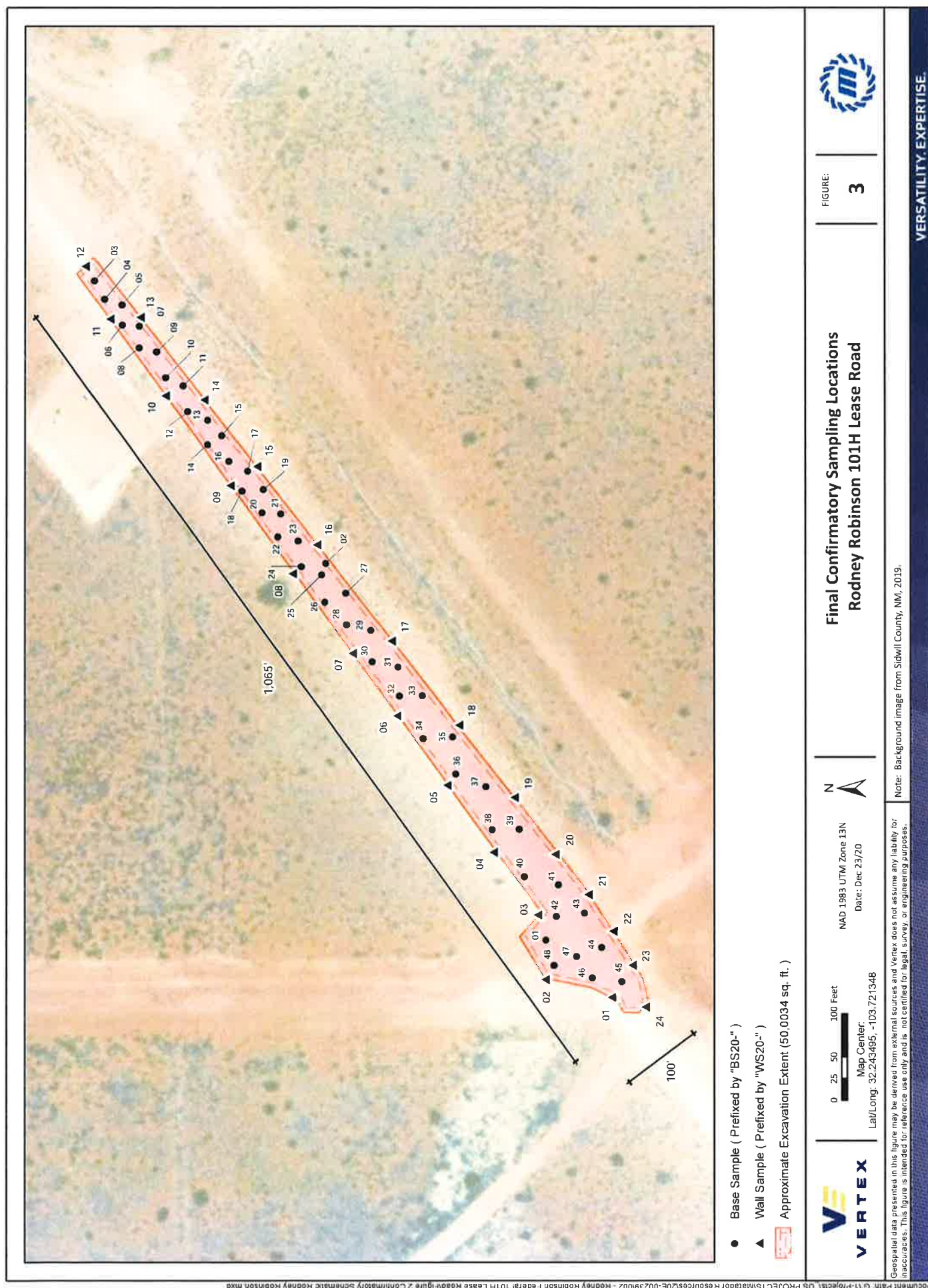
Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ATTACHMENT 2



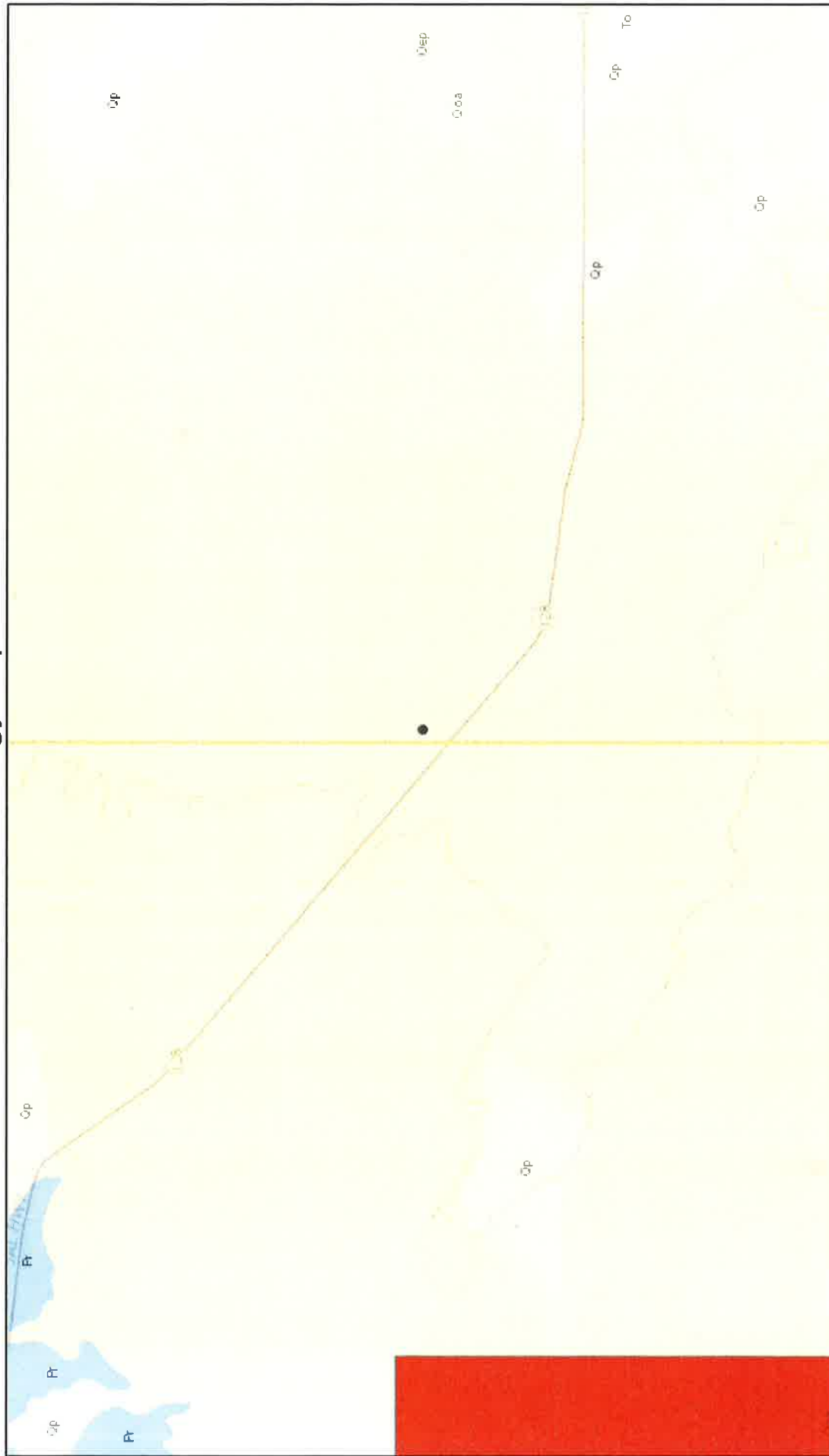




ATTACHMENT 3

Closure Criteria Worksheet			
Site Name: Rodney Robinson 101H Lease Road			
Spill Coordinates:		X: 32.244466	Y: -103.719877
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	380	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	81,681	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	6,283	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	117,057	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	28,406	feet
	ii) Within 1000 feet of any fresh water well or spring	28,406	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	6,283	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	>100	year
11	Soil Type	Eolian sands	
12	Ecological Classification	Well drained, Low runoff	
13	Geology	Eolian and Piedmont deposits	
NMAC 19.15.29.12 E (Table 1) Closure Criteria		< 50'	<50' 51-100' >100'

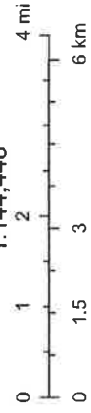
Geology Map



1/28/2020, 12:43:54 PM

- Faults
 - Fault, Exposed
 - Fault, Intermittent
 - Fault, Concealed
- Shore Zone
 - ~ Shore Zone
- Dikes
 - ++++ Dike intruding fault
- Volcanic Vents
 - * Volcanic Vents
- STATEMAP (1993 to Present) [Publications]
 - Mapping in Complete

1:144,448



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

USA Karst

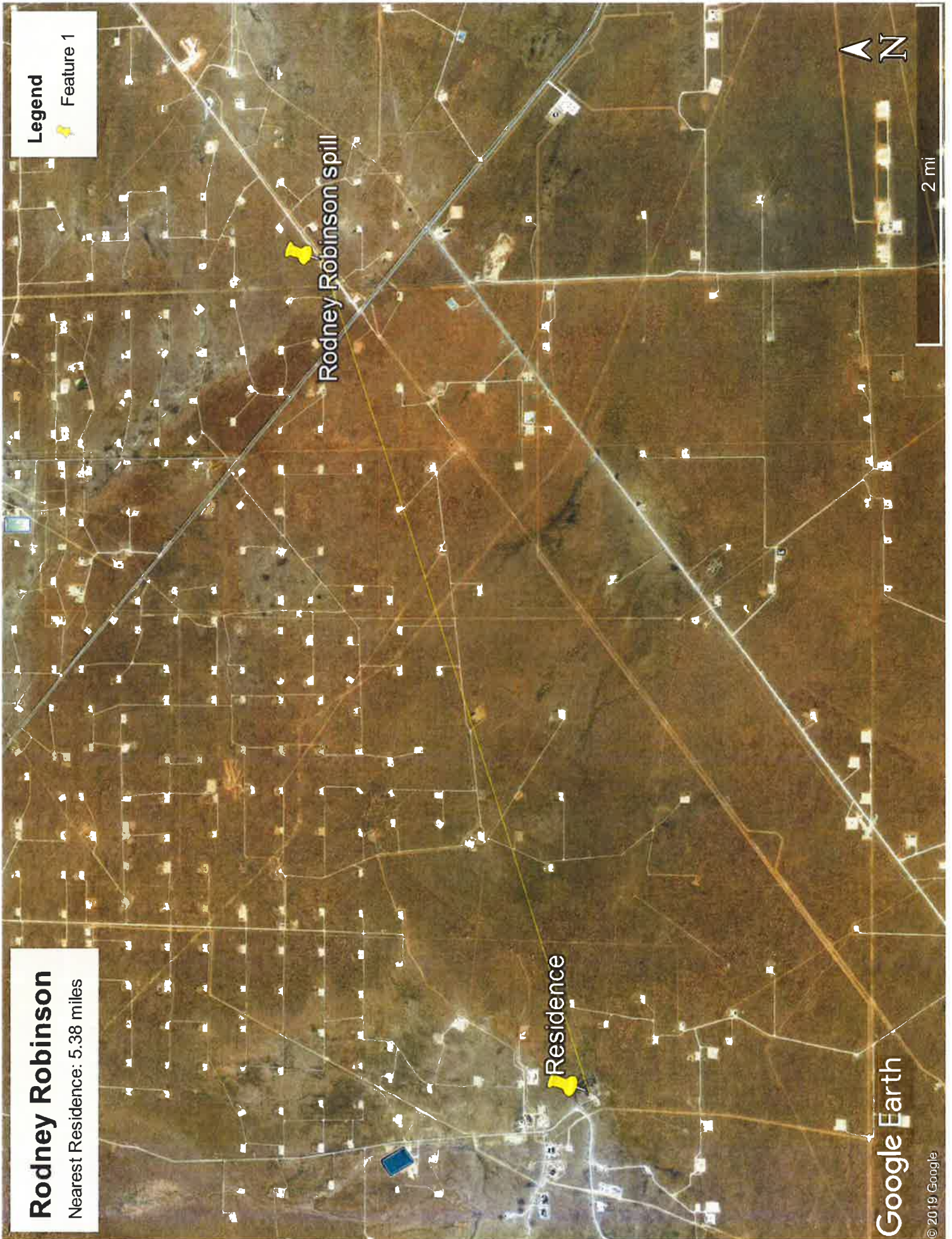
1/28/2020

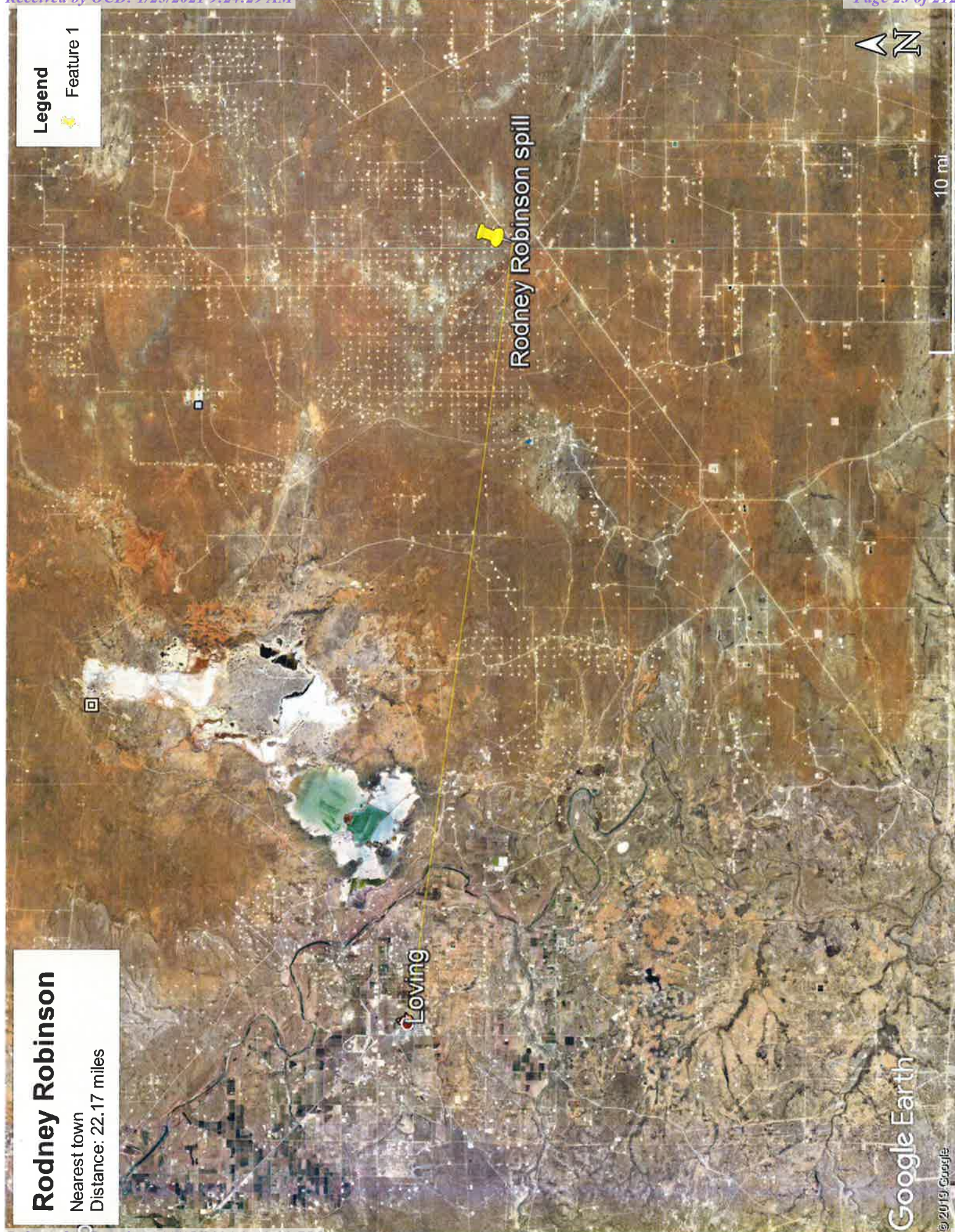
USA Karst



A map showing karst areas in the United States based on the U.S. Geological Survey Open-File Report 2004-1352

U.S. Geological Survey Open-File Report 2004-1352, Caves and Karst in the U.S. National Park Service, AGI Karst Map of the US. | U.S. Geological Survey
Open-File Report 2004-1352 | Earthstar Geographics





Rodney Robinson

Nearest town

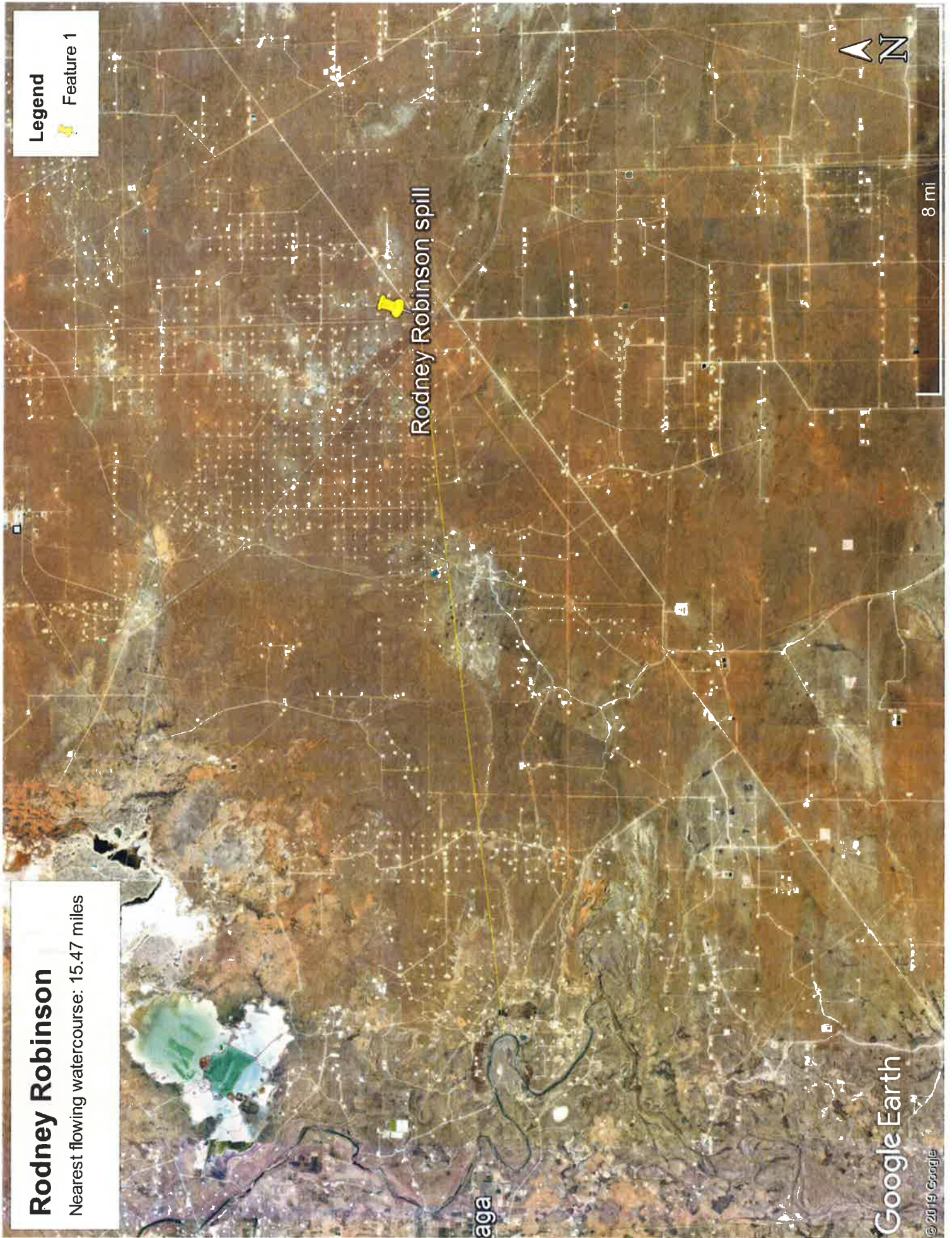
Distance: 22.17 miles

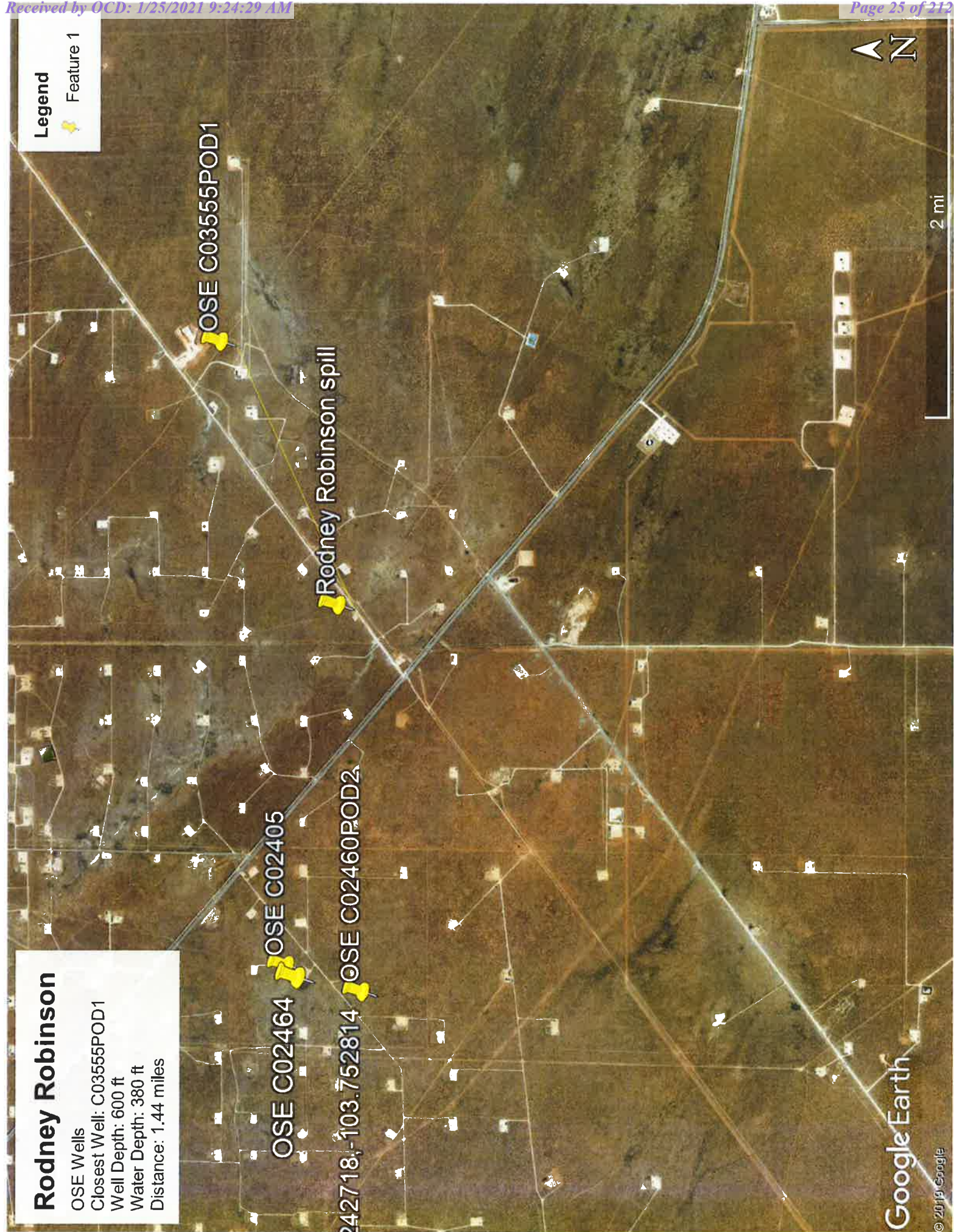
Legend

Feature 1

Google Earth

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OSE Wells
Closest Well: C035555POD1
Well Depth: 600 ft
Water Depth: 380 ft
Distance: 1.44 miles

OSE C02464

OSE C02405

C02718, -103.752814

OSE C02460POD2

OSE C035555POD1

Rodney Robinson spill

Google Earth

© 2019 Google



New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

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

(NAD83 UTM in meters)

(in feet)

POD Number	Code	Subbasin	County	Source	64	16	4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C-03555-POD1	C		LE	Shallow	2	2	1	05	24S	32E	622709	3569231	2328	10/20/2013	10/21/2013	11/07/2013	600	380	JOHN SIRMAN	1654
C-02405		CUB	ED	Shallow	4	1	02	24S	31E		617690	3568631*	2930	09/29/1994	09/30/1994	12/05/1994	275	160	COLLIS, ROBERT E.	1184
C-02404	C		ED	Shallow	3	4	1	02	24S	31E	617589	3568530*	3019	08/24/1995	08/24/1995	09/07/1995	320	205	GLENN, CLARK A "CORKY" (LD)	421
C-02400	C		ED	Shallow	3	02		24S	31E		617496	3568022*	3108	08/21/1995	08/21/1995	09/07/1995	320		GLENN, CLARK A "CORKY" (LD)	421
C-02400-POD2	C		ED	Shallow	3	02		24S	31E		617496	3568022*	3108	08/25/1995	08/25/1995	09/07/1995	320		GLENN, CLARK A "CORKY" (LD)	421

Record Count: 5

UTMSAD83 Radius Search (in meters):

Easting (X): 620595.76

Nothing (Y): 3568252.96

Radius: 3500

*UTM location was derived from PLSS - see Help

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

1/29/20 11:49 AM

WELLS WITH WELL LOG INFORMATION



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag POD Number Q64 Q16 Q4 Sec Tws Rng X Y
 C 02405 4 1 02 24S 31E 617690 3568631*

Driller License: 1184 Driller Company: WEST TEXAS WATER WELL SERVICE

Driller Name: COLLIS, ROBERT E.

Drill Start Date: 09/29/1994

Drill Finish Date: 09/30/1994

Plug Date:

Log File Date: 12/05/1994

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 75 GPM

Casing Size: 6.63

Depth Well: 275 feet

Depth Water: 160 feet

Water Bearing Stratifications:

Top Bottom Description

210 270 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

235 275

Meter Number: 5381

Meter Make: ROCKWELL

Meter Serial Number: 37125202

Meter Multiplier: 10.0000

Number of Dials: 6

Meter Type: Diversion

Unit of Measure: Gallons

Return Flow Percent:

Usage Multiplier:

Reading Frequency: Quarterly

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount
03/27/2002	2002	14202	A	RPT		0
04/05/2002	2002	0	A	RPT		0
10/06/2002	2002	2	A	RPT		2.160
01/01/2003	2002	4	A	RPT		2.016
03/01/2003	2003	5	A	RPT		0.574
03/20/2003	2003	5	A	RPT		0.263
03/20/2003	2003	184139	A	RPT		0
06/01/2003	2003	255705	A	ab		2.196
12/01/2003	2003	406731	A	RPT		4.635
01/01/2004	2003	476606	A	TW		2.144
05/03/2004	2004	501326	A	TW		0.759
08/11/2004	2004	547915	A	RPT		1.430
04/27/2005	2005	704459	A	RPT		4.804
12/29/2005	2005	23476	R	TW	Meter Rollover	9.790

*UTM location was derived from PLSS - see Help

1/28/20 12:04 PM

Page 1 of 2

POD SUMMARY - C 02405

**YTD Meter Amounts:	Year	Amount
	2002	4.176
	2003	9.812
	2004	2.189
	2005	14.594

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

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POD SUMMARY - C 02405



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
C 02460	POD2	3	02	24S	31E	617496	3568022*

Driller License: 421	Driller Company: GLENN'S WATER WELL SERVICE		
Driller Name: GLENN, CLARK A."CORKY" (LD)			
Drill Start Date: 08/25/1995	Drill Finish Date: 08/25/1995	Plug Date:	
Log File Date: 09/07/1995	PCW Rcv Date:	Source: Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield: 7 GPM	
Casing Size:	Depth Well: 320 feet	Depth Water:	

Water Bearing Stratifications:	Top	Bottom	Description
	260	280	Shale/Mudstone/Siltstone

*UTM location was derived from PLSS - see Help

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POD SUMMARY - C 02460 POD2



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02464	3	4	1	02	24S	31E	617589	3568530*

Driller License: 421	Driller Company: GLENN'S WATER WELL SERVICE
Driller Name: GLENN, CLARK A."CORKY" (LD)	
Drill Start Date: 08/24/1995	Drill Finish Date: 08/24/1995
Log File Date: 09/07/1995	PCW Rcv Date:
Pump Type:	Estimated Yield: 12 GPM
Casing Size: 6.63	Depth Well: 320 feet
	Depth Water: 205 feet

Water Bearing Stratifications:	Top	Bottom	Description
	220	230	Sandstone/Gravel/Conglomerate
	230	245	Shale/Mudstone/Siltstone
	250	282	Shale/Mudstone/Siltstone

Casing Perforations:	Top	Bottom
	208	320

*UTM location was derived from PLSS - see Help

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1/28/20 12:05 PM

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POD SUMMARY - C 02464



New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	03555 POD1	2	2	1	05	24S	32E	622709	3569231

Driller License: 1654	Driller Company: NOT WORKING FOR HIRE--SIRMAN DRILLING AND CONSTRUC
Driller Name: JOHN SIRMAN	
Drill Start Date: 10/20/2013	Drill Finish Date: 10/21/2013
Log File Date: 11/07/2013	PCW Rcv Date:
Pump Type:	Pipe Discharge Size:
Casing Size: 6.00	Depth Well: 600 feet
	Plug Date:
	Source: Shallow
	Estimated Yield: 5 GPM
	Depth Water: 380 feet

Water Bearing Stratifications:	Top	Bottom	Description
	475	550	Sandstone/Gravel/Conglomerate

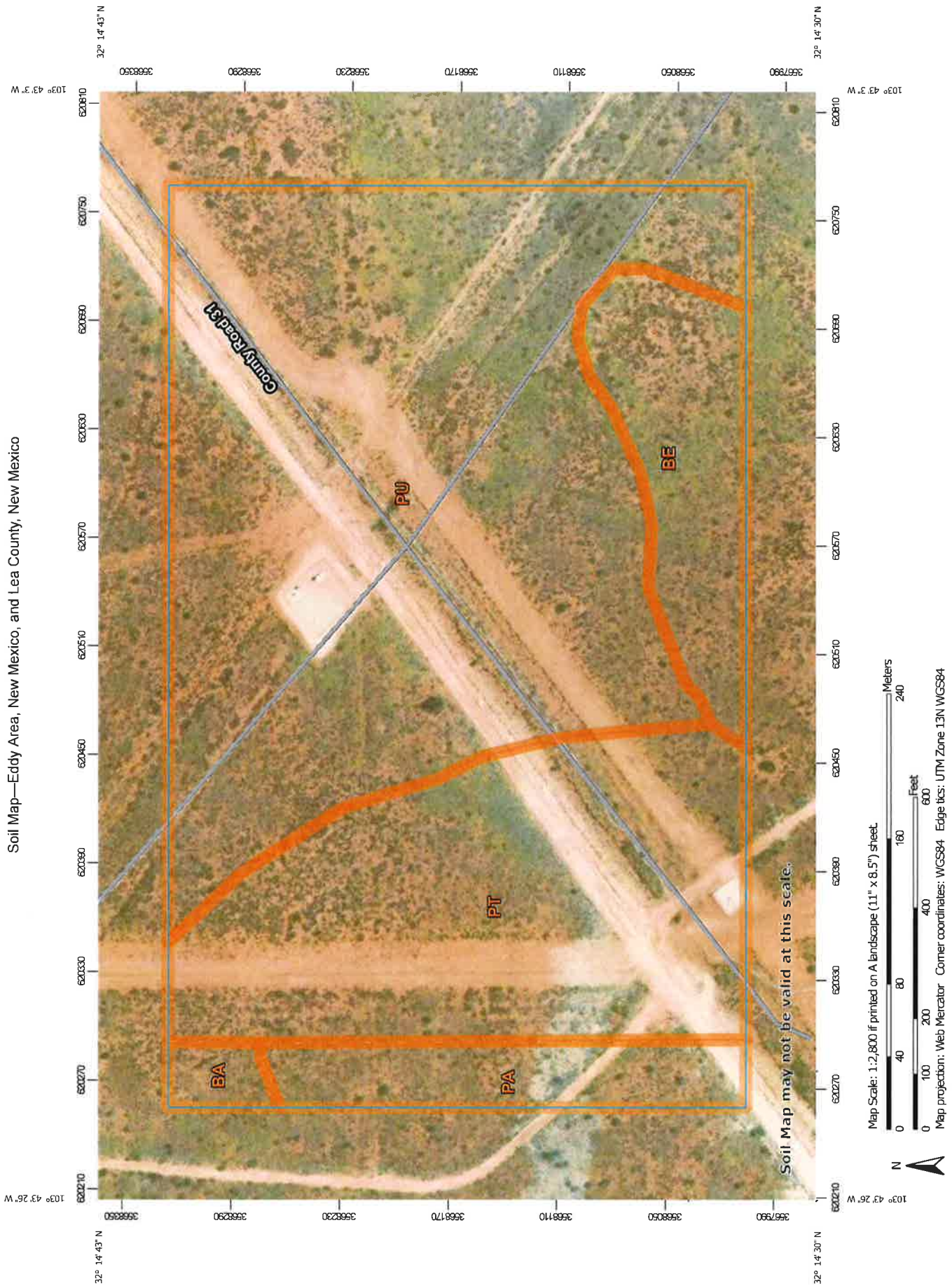
Casing Perforations:	Top	Bottom
	460	520

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

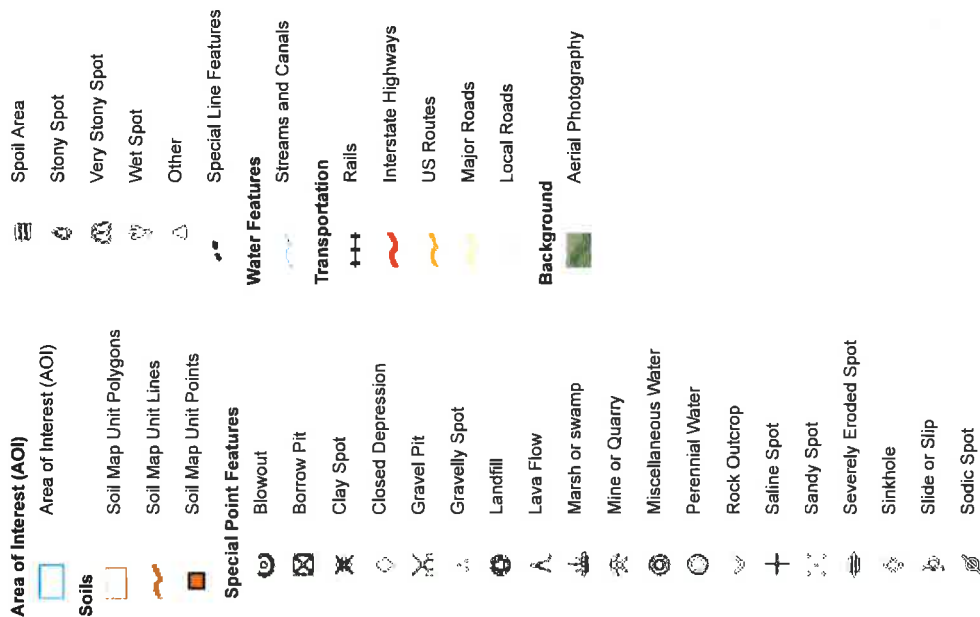
1/28/20 12:02 PM

Page 1 of 1

POD SUMMARY - C 03555 POD1



Soil Map—Eddy Area, New Mexico, and Lea County, New Mexico

MAP LEGEND**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 15, Sep 15, 2019
 Soil Survey Area: Lea County, New Mexico
 Survey Area Data: Version 16, Sep 15, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 17, 2017

Soil Map—Eddy Area, New Mexico, and Lea County, New Mexico

MAP LEGEND

MAP INFORMATION

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

Soil Map—Eddy Area, New Mexico, and Lea County, New Mexico

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BA	Berino loamy fine sand, 0 to 3 percent slopes	0.5	1.2%
PA	Pajarito loamy fine sand, 0 to 3 percent slopes, eroded	2.4	5.9%
Subtotals for Soil Survey Area		2.9	7.2%
Totals for Area of Interest		40.4	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BE	Berino-Cacique loamy fine sands association	3.7	9.1%
PT	Pyote loamy fine sand	11.1	27.4%
PU	Pyote and maljamar fine sands	22.7	56.3%
Subtotals for Soil Survey Area		37.5	92.8%
Totals for Area of Interest		40.4	100.0%



Map Unit Description: Pajarito loamy fine sand, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico, and Lea County, New Mexico

Eddy Area, New Mexico

PA—Pajarito loamy fine sand, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w54
 Elevation: 2,700 to 5,500 feet
 Mean annual precipitation: 5 to 15 inches
 Mean annual air temperature: 57 to 70 degrees F
 Frost-free period: 180 to 250 days
 Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Pajarito

Setting

Landform: Dunes, interdunes, plains
 Landform position (three-dimensional): Side slope
 Down-slope shape: Convex, linear
 Across-slope shape: Convex, linear
 Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 13 inches: loamy fine sand
 H2 - 13 to 36 inches: fine sandy loam
 H3 - 36 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
 Depth to restrictive feature: More than 80 inches
 Natural drainage class: Well drained
 Runoff class: Very low
 Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
 Depth to water table: More than 80 inches
 Frequency of flooding: None
 Frequency of ponding: None
 Calcium carbonate, maximum in profile: 15 percent
 Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
 Sodium adsorption ratio, maximum in profile: 1.0
 Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
 Land capability classification (nonirrigated): 7e
 Hydrologic Soil Group: A



Map Unit Description: Pajarito loamy fine sand, 0 to 3 percent slopes, eroded—Eddy Area,
New Mexico, and Lea County, New Mexico

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Minor Components

Wink

Percent of map unit: 1 percent

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Berino

Percent of map unit: 1 percent

Ecological site: Loamy Sand (R042XC003NM)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 15, Sep 15, 2019

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 16, Sep 15, 2019



Map Unit Description: Pyote loamy fine sand---Eddy Area, New Mexico, and Lea County, New Mexico

Lea County, New Mexico

PT—Pyote loamy fine sand

Map Unit Setting

National map unit symbol: dmqp
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pyote and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 25 inches: loamy fine sand
Bt - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s



Map Unit Description: Pyote loamy fine sand---Eddy Area, New Mexico, and Lea County, New Mexico

Hydrologic Soil Group: A
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components

Maljamar

Percent of map unit: 8 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Palomas

Percent of map unit: 7 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 16, Sep 15, 2019



Map Unit Description: Pyote and maljamar fine sands---Eddy Area, New Mexico, and Lea County, New Mexico

Lea County, New Mexico

PU—Pyote and maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Maljamar and similar soils: 45 percent
Pyote and similar soils: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maljamar

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand
Bt - 24 to 50 inches: sandy clay loam
Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.6 inches)



Map Unit Description: Pyote and maljamar fine sands---Eddy Area, New Mexico, and Lea County, New Mexico

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Description of Pyote**Setting**

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 30 inches: fine sand
Bt - 30 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components**Kermit**

Percent of map unit: 10 percent
Ecological site: Sandhills (R042XC022NM)

Map Unit Description: Pyote and maljamar fine sands---Eddy Area, New Mexico, and Lea County, New Mexico

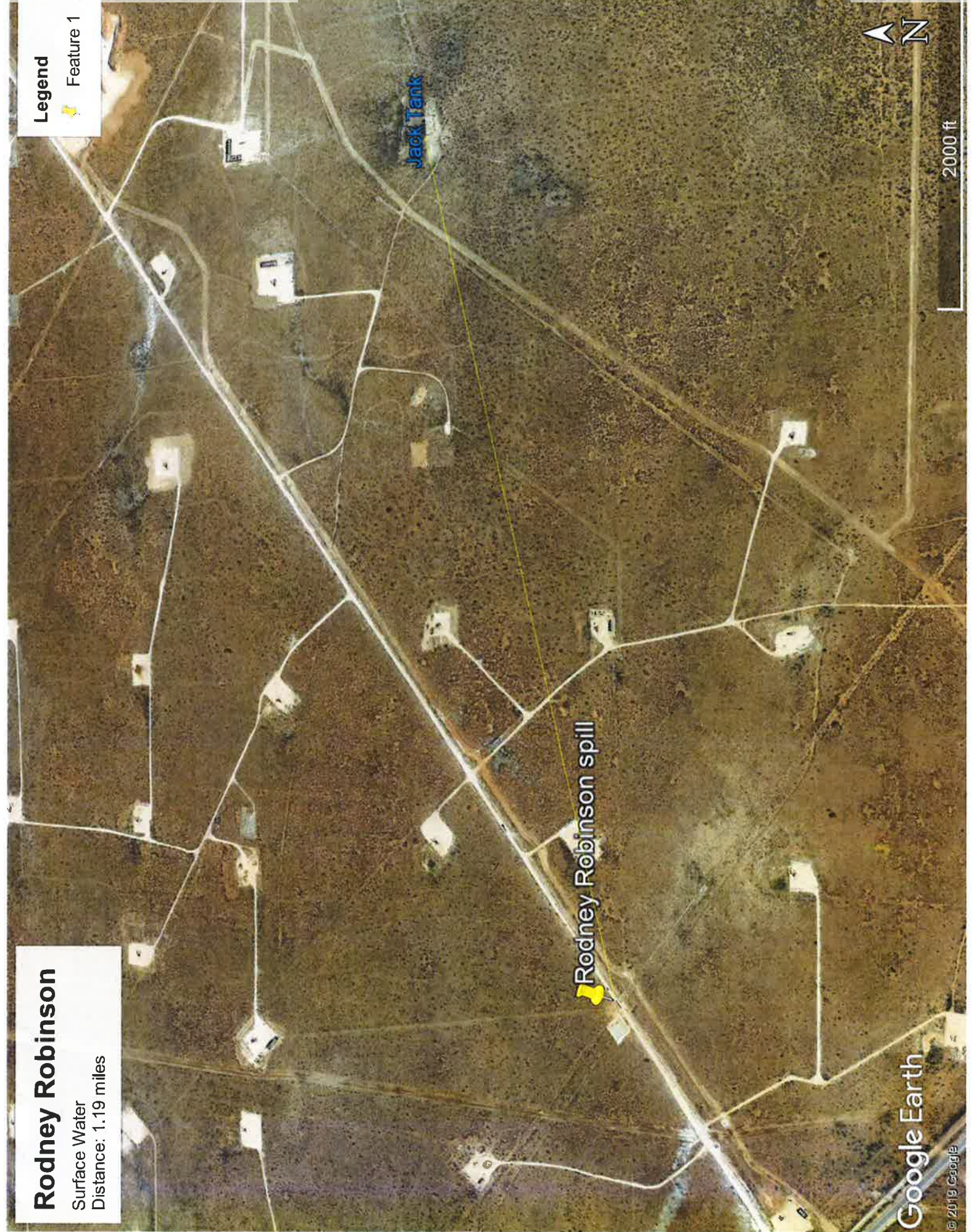
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 16, Sep 15, 2019





Rodney Robinson

Surface Water
Distance: 1.19 miles

Legend

Feature 1

Google Earth

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2000 ft



Rodney Robinson spill

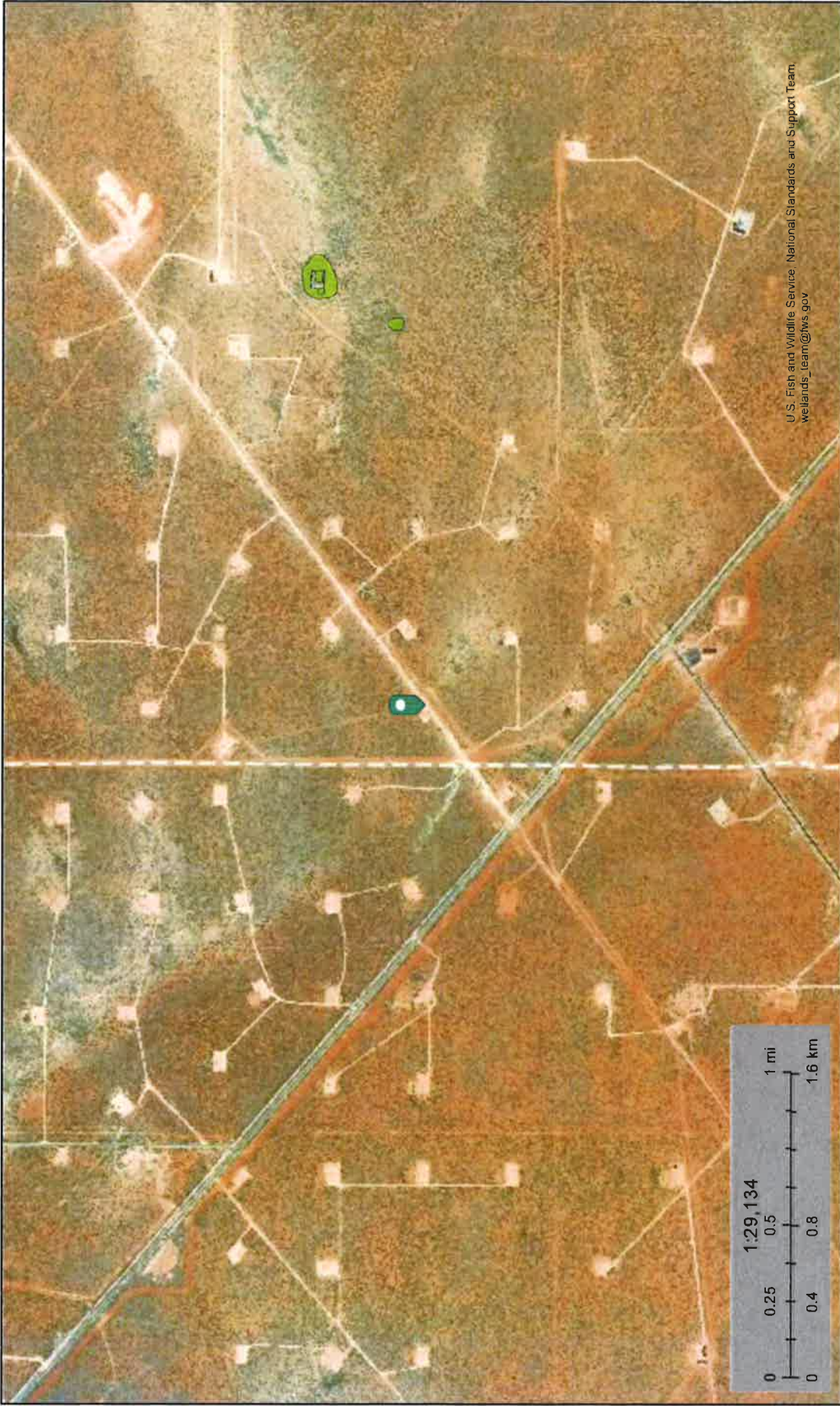
Jack Tank



U.S. Fish and Wildlife Service

National Wetlands Inventory

Rodney Robinson Surface water



U.S. Fish and Wildlife Service National Standards and Support Team
wetlands_team@fws.gov

January 28, 2020

Wetlands

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

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

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

USGS 321312103395601 24S.32E.10.344333

1/28/2020



National Water Information System: Web Interface

USGS Water Resources

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Data Category: **Site Information** Geographic Area: **United States** **GO**

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- [Full News](#)

USGS 321312103395601 24S.32E.10.344333

Available data for this site **SUMMARY OF ALL AVAILABLE DATA** **GO**

Well Site

DESCRIPTION:

Latitude 32°13'30.4", Longitude 103°39'52.7" NAD83
Lea County, New Mexico , Hydrologic Unit 13070007
Well depth: 60 feet
Land surface altitude: 3,589.00 feet above NGVD29.
Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits" (110AVMB) local aquifer

AVAILABLE DATA:

Data Type		Begin Date	End Date	Count
Field groundwater-level measurements		1950-04-13	2010-12-16	10
Revisions		Unavailable (site:0) (timeseries:0)		
Additional Data Sources				
Annual Water-Data Report (pdf) **offsite**		2011	2011	1

1/28/2020

USGS 321312103395601 24S.32E.10.344333

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center
Email questions about this site to [New Mexico Water Science Center Water-Data Inquiries](#)

[Questions about sites/data?](#)[Feedback on this web site](#)[Automated retrievals](#)[Help](#)[Data Tips](#)[Explanation of terms](#)[Subscribe for system changes](#)[News](#)[Accessibility](#)[Plug-Ins](#)[FOIA](#)[Privacy](#)[Policies and Notices](#)[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)**Title: NWIS Site Information for USA: Site Inventory****URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321312103395601**Page Contact Information: [New Mexico Water Data Support Team](#)

Page Last Modified: 2020-01-28 13:51:01 EST

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1/28/2020

USGS 321421103464901 24S.31E.04.433422



National Water Information System: Web Interface

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USGS 321421103464901 24S.31E.04.433422

Available data for this site **SUMMARY OF ALL AVAILABLE DATA** **GO**

Well Site

DESCRIPTION:

Latitude 32°14'23.7", Longitude 103°46'47.8" NAD83
Eddy County, New Mexico , Hydrologic Unit 13060011
Well depth: 627 feet
Land surface altitude: 3,419.00 feet above NGVD29.
Well completed in "Rustler Formation" (312RSLR) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1959-03-13	2013-01-16	2
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

1/28/2020

USGS 321421103464901 24S.31E.04.433422

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Title: NWIS Site Information for USA: Site Inventory

URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321421103464901

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

Page Last Modified: 2020-01-28 13:53:47 EST

0.4 0.39 caww02



1/28/2020

USGS 321423103464501 24S.31E.04.43 ENGLE



National Water Information System: Web Interface

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USGS 321423103464501 24S.31E.04.43 ENGLE

Available data for this site **SUMMARY OF ALL AVAILABLE DATA** **GO**

Well Site

DESCRIPTION:

Latitude 32°14'22.93", Longitude 103°46'45.25" NAD83
Eddy County, New Mexico , Hydrologic Unit 13060011
Well depth: not determined.
Land surface altitude: 3,422 feet above NAVD88.

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center
Email questions about this site to [New Mexico Water Science Center Water-Data Inquiries](#)

USGS 321423103464501 24S.31E.04.43 ENGLE

1/28/2020

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Page Last Modified: 2020-01-28 13:52:48 EST

0.42 0.39 caww02



1/28/2020

USGS 321428103395801 24S.32E.03.32124



National Water Information System: Web Interface

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Data Category: **Site Information** Geographic Area: **United States**

GO

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USGS 321428103395801 24S.32E.03.32124

Available data for this site **SUMMARY OF ALL AVAILABLE DATA** GO

Well Site

DESCRIPTION:

Latitude 32°14'28", Longitude 103°39'58" NAD27
Lea County, New Mexico , Hydrologic Unit 13060011
Well depth: 550 feet
Land surface altitude: 3,653 feet above NAVD88.
Well completed in "Sunrise Formation" (231SNRS) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1976-01-22	1976-01-22	1
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321428103395801

1/28/2020

USGS 321428103395801 24S.32E.03.32124

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Title: NWIS Site Information for USA: Site Inventory

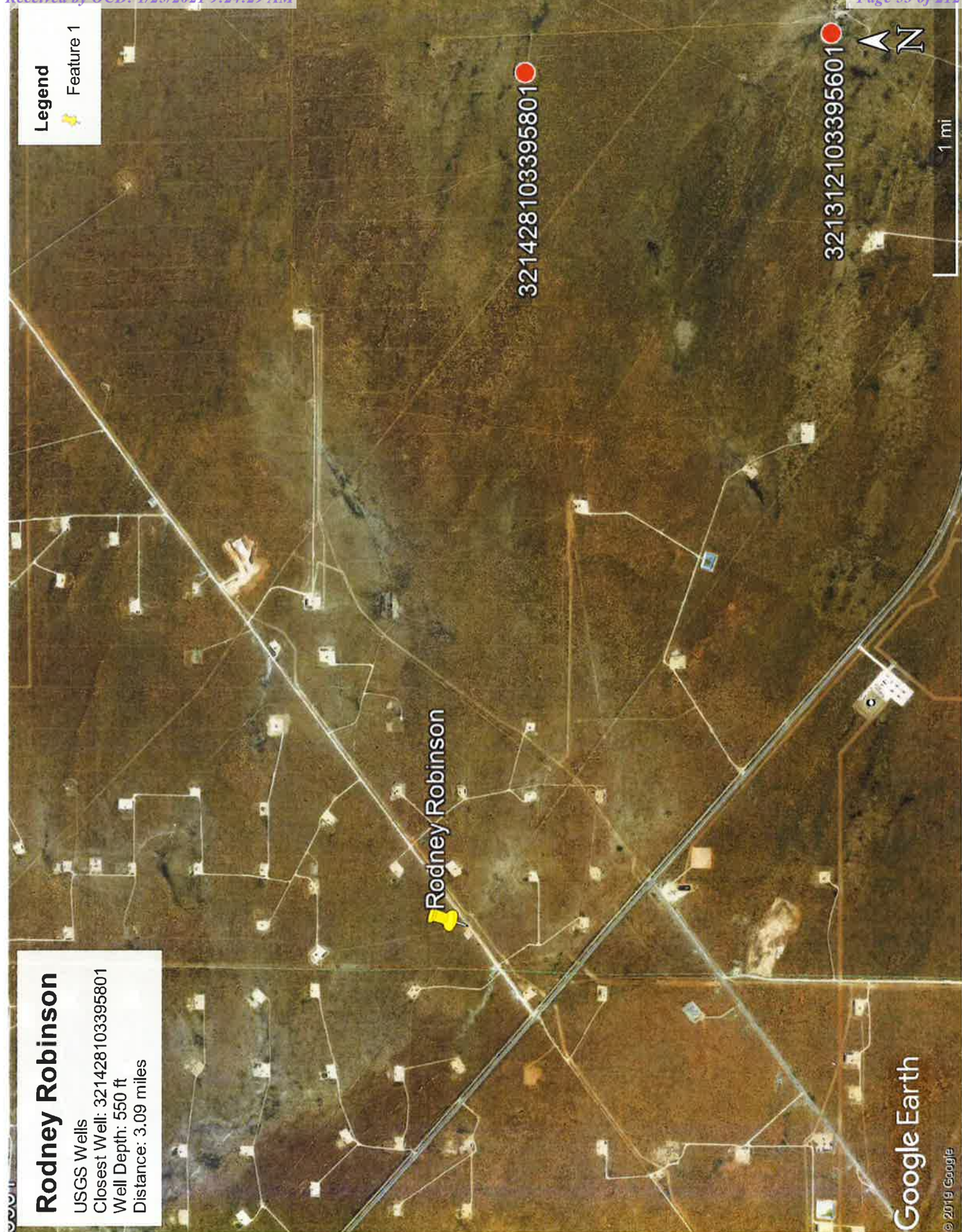
URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321428103395801

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

Page Last Modified: 2020-01-28 13:37:56 EST

0.29 0.28 cawww01





Rodney Robinson

USGS Wells
Closest Well: 321428103395801
Well Depth: 550 ft
Distance: 3.09 miles

Rodney Robinson

321428103395801

321312103395601

Google Earth

© 2019 Google

ATTACHMENT 4

Spill Response and Sampling



Client: **Mateador**
 Date: **12/22/20**
 Site Name: **Rodney Robinson**
 Site Location:
 Project Owner:
 Project Manager:
 Project #:

Initial Spill Information - Record on First Visit

Spill Date:
 Spill Volume:
 Spill Cause:
 Spill Product:
 Recovered Spill Volume:
 Recovery Method:

Sampling

Sample ID	Depth (ft)	Field Screening			Data Collection (Check for Yes)			
		VOC (PID)	Petroleum TPH (ppm)	Quantab (High/Low) Count	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
CS/TP/WH - Year Number Ex. RH03-01	Ex. 2ft	Ex. 400 ppm	200 ppm	Ex. High +	Ex. Hydrocarbon Chloride			
BS 1	0-1			0.18/16.2				
2				0.27/17.0				
3				0.24/16.9				
4				0.40/15.7				
5				0.16/16.9				
6				0.18/16.4				
7				0.27/17.0				
8				0.23/16.8				
9				0.33/15.2				
10				0.22/14.0				
11				0.13/16.2				
12				0.22/15.0				
13				0.27/15.2				
14				0.28/16.1				
15				0.22/16.1				
16				0.14/16.9				
17				0.23/16.2				
18				0.35/16.0				
19				0.18/16.2				
20				0.39/16.1				
21				0.16/16.8				
22				0.27/17.2				



VERSITY EXP

Spill Response and Sampling

Client: Matador Date: 12/22 Site Name: Rodney Site Location: Project Owner: Project Manager: Project #:					Initial Spill Information - Record on First Visit Spill Date: Spill Volume: Spill Cause: Spill Product: Recovered Spill Volume: Recovery Method:			
Sampling								
Sample ID	Depth (ft)	Field Screening			Data Collection (Check for Yes)			
		VOC (ppm)	Petroleum TPH (ppm)	Quantals (High/Low) ± 0.1	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
VS/TP/BH - Year Number Ex. BH18-01	Ex. 200	Ex. 400 ppm	200 ppm	Ex. High +	Ex. Hydrocarbon Chloride			
23				0.30/16.6				
24				0.30/15.1				
25				0.34/16.8				
26				0.27/17.4				
27				0.15/15.2				
28				0.13/16.0				
29				0.14/16.4				
30				0.13/16.6				
31				0.12/16.9				
32				0.14/16.8				
33				0.15/16.0				
34				0.16/17.0				
35				0.37/17.1				
36				0.14/17.3				
37				0.12/17.2				
38				0.27/16.8				
39				0.26/16.8				
40				0.12/16.3				
41				0.24/17.5				
42				0.32/16.5				
43				0.32/16.0				
44				0.30/16.6				

VERSITY EXPERTISE.



VERTEX

Spill Response and Sampling

Client: Mataador Date: 12/22/20 Site Name: Rodney Site Location: Project Owner: Project Manager: Project #:					Initial Spill Information - Record on First Visit Spill Date: Spill Volume: Spill Cause: Spill Product: Recovered Spill Volume: Recovery Method:			
Sampling								
		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (ppb)	Petrolog TPH (ppm)	Quantab (High/Low) +/-	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
US/TP/BRE - Year Number Ex. BH13-01 45 46 47 48 WS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Ex. 2ft	Ex. 200 ppb	200 ppm	Ex. High + 0.12/16.3 0.12/17.7 0.13/17.8 0.28/17.7 0.28/17.7 0.12/16.9 0.13/17.7 0.26/17.7 0.34/17.6 0.15/18.1 0.13/18.4 0.30/17.7 0.16/18.0 0.36/17.0 0.20/17.9 0.20/18.6 0.17/17.5 0.16/17.6 0.32/18.5 0.23/18.3 0.21/19.5 0.28/17.5	Ex. Hydrocarbon Chloride			

VERSATILITY. EXPERTISE.



VERTEX

Spill Response and Sampling

Client: Date: Site Name: Site Location: Project Owner: Project Manager: Project #:					Initial Spill Information - Record on First Visit Spill Date: Spill Volume: Spill Cause: Spill Product: Recovered Spill Volume: Recovery Method:			
Sampling								
		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	Petrollog TPH (ppm)	Quantab (High/Low) Count	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
S/TP/BH - Yes/ Number Ex. BH18 01	Ex. 20	Ex. 400 ppm	200 ppm	Ex. High	Ex. Hydrocarbon Chloride			
WS 19	0-1			0.16/19.0				
20				0.32/18.0				
21				0.20/18.4				
22				0.21/18.0				
23				0.36/17.1				
WS 24	0-1			0.28/17.6				

VERSATILITY. EXPERTISE.



Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	1/24/2020
Site Location Name:	Rodney Robinson Federal 101H - Lease Road	Report Run Date:	1/25/2020 1:50 AM
Project Owner:		File (Project) #:	
Project Manager:		API #:	30-0025-46278
Client Contact Name:	John Hurt	Reference	
Client Contact Phone #:			

Summary of Times

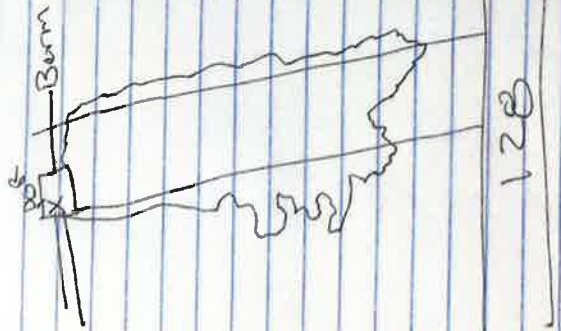
Left Office	1/24/2020 2:00 PM
Arrived at Site	1/24/2020 4:00 PM
Departed Site	1/24/2020 4:45 PM
Returned to Office	

Daily Site Visit Report



Site Sketch

Motorcade Roadway Spill.
Line strike on road right off Hwy 128
at MM19.
Crew built berm around line that was hit
to contain fluid that was still leaking
from the line.
An oxy rep was on site. The spill
followed the road down towards the
entrance off 128.





Daily Site Visit Report



Summary of Daily Operations	
17:14	Arrive on location Complete safety paperwork Talk to operator on site Map area of spill Take photos of area
Next Steps & Recommendations	

1

Daily Site Visit Report



Site Photos

<p>Viewing Direction: Northeast</p>  <p>Geotitles Photo Viewing Direction: Northeast Date: 1/25/2020 1:50 PM Location: Spill area Operator: [redacted]</p>	<p>Spill area</p>
<p>Viewing Direction: West</p>  <p>Geotitles Photo Viewing Direction: West Date: 1/25/2020 1:50 PM Location: Spill area Operator: [redacted]</p>	<p>Spill area</p>

<p>Viewing Direction: Southwest</p>  <p>Geotitles Photo Viewing Direction: Southwest Date: 1/25/2020 1:50 PM Location: Spill area Operator: [redacted]</p>	<p>Bermed area around point of release</p>
<p>Viewing Direction: East</p>  <p>Geotitles Photo Viewing Direction: East Date: 1/25/2020 1:50 PM Location: Spill area Operator: [redacted]</p>	<p>Spill area</p>



Daily Site Visit Report



Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

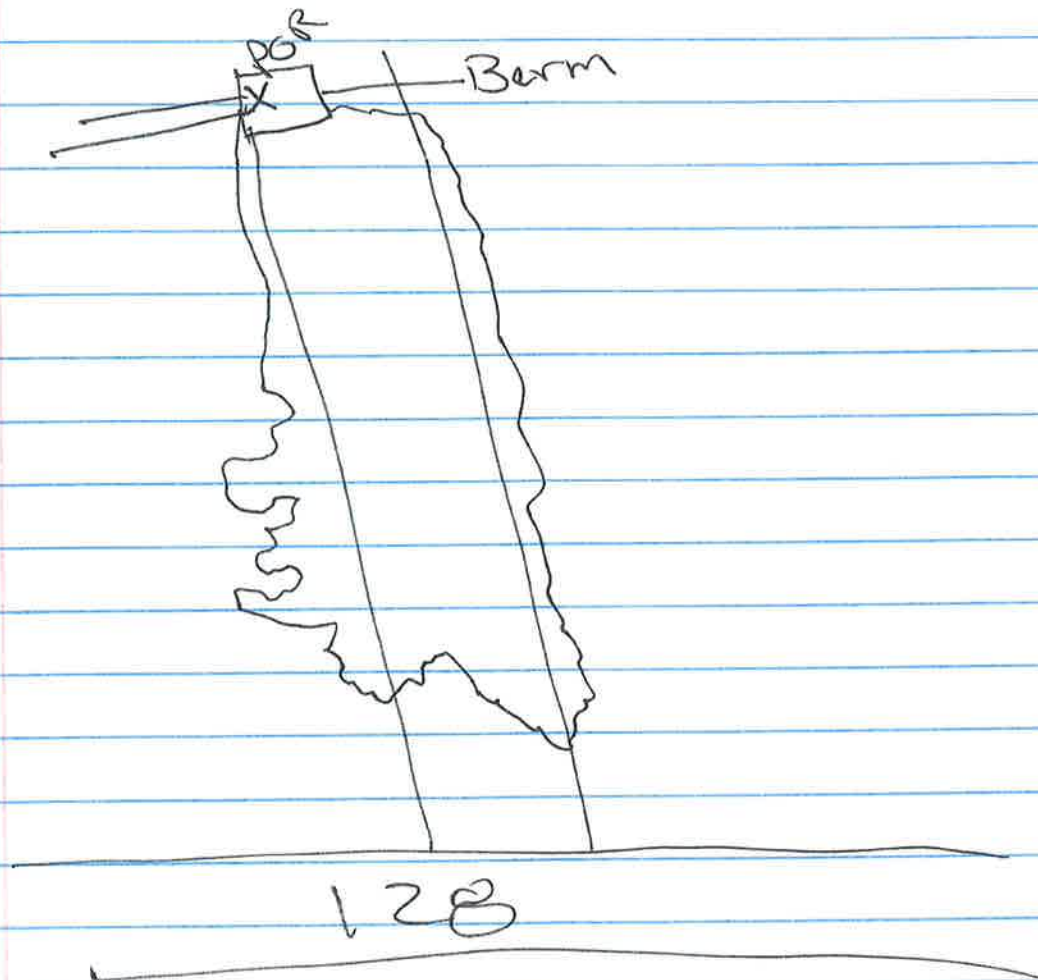
Signature:

Matador Rodney spill.

Line Strike on road right off Hwy 128
at MM19

Crew built berm around line that was hit
to contain fluid that was still leaking
from the line.

An oxy rep was on site. The spill
followed the road down towards the
entrance off 128



Rodney 1/29/20

Leave office 9:00 AM beginning mileage: 2664
on location 10:00 AM

Area of spill has been flagged out by someone else.

Collected a total of 11 sample points
Three of the 11 were for vertical delineation

- BH9 was taken for depth where trucks were driving over spill area and spreading. Surface shows to be clean
- BH4 was to check surface for edge of spill. Field screens show it splashed further off. BH4.1 was taken to verify edge.
- BH5 was to verify edge. Took second sample further away to verify edge. (BH5.1)

Entire spill seems to have mainly stayed in the road and was only spread out by passing vehicles on the busy road.



Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	1/29/2020
Site Location Name:	Rodney Robinson Federal 101H - Lease Road	Report Run Date:	1/29/2020 10:52 PM
Project Owner:	John Hurt	File (Project) #:	20E-00239
Project Manager:	Natalie Gordon	API #:	30-0025-46278
Client Contact Name:	John Hurt	Reference	01/24/20 Release
Client Contact Phone #:			

Summary of Times

Left Office	1/29/2020 9:00 AM
Arrived at Site	1/29/2020 10:06 AM
Departed Site	1/29/2020 2:10 PM
Returned to Office	1/29/2020 3:51 PM

Daily Site Visit Report



Site Sketch

Monday 1/29/20
 Leave Office 9:00 AM beginning mileage 21614
 on location 10:00 AM
 Area of spill has been flagged out by someone else.
 Collected a total of 11 sample points
 Three of the 11 were for vertical delineation
 -BH9 was taken for depth where trucks were driving over spill area and spreading. Surface shows to be clean
 -BH4 was to check surface for edge of spill. Field Screens show it splashed further off. BH4.1 was taken to verify edge.
 -BH5 was to verify edge. Took second sample further away to verify edge. (BH5.1)
 Entire spill seems to have mainly stayed in the road and was only spread out by passing vehicles on the busy road.



Daily Site Visit Report

Spill Response and Sampling

Metator
1/29/20
Rodney Robinson

Sample ID	Depth (ft)	VOC (ppb)	SVOC (ppb)	TPH (ppm)	TPH (ppm)	TPH (ppm)
BH1	0	0.5	0.5	0.10	0.10	0.10
	1	0.5	0.5	0.05	0.05	0.05
	2	0.5	0.5	0.05	0.05	0.05
	3	0.5	0.5	0.05	0.05	0.05
BH2	0	0.5	0.5	0.10	0.10	0.10
BH3	0	0.5	0.5	0.05	0.05	0.05
BH4	0	0.5	0.5	0.10	0.10	0.10
BH5	0	0.5	0.5	0.05	0.05	0.05
BH6	0	0.5	0.5	0.10	0.10	0.10
BH7	0	0.5	0.5	0.05	0.05	0.05
BH8	0	0.5	0.5	0.10	0.10	0.10
BH9	0	0.5	0.5	0.05	0.05	0.05
BH10	0	0.5	0.5	0.10	0.10	0.10
BH11	0	0.5	0.5	0.05	0.05	0.05
BH12	0	0.5	0.5	0.10	0.10	0.10
BH13	0	0.5	0.5	0.05	0.05	0.05
BH14	0	0.5	0.5	0.10	0.10	0.10
BH15	0	0.5	0.5	0.05	0.05	0.05
BH16	0	0.5	0.5	0.10	0.10	0.10
BH17	0	0.5	0.5	0.05	0.05	0.05
BH18	0	0.5	0.5	0.10	0.10	0.10
BH19	0	0.5	0.5	0.05	0.05	0.05
BH20	0	0.5	0.5	0.10	0.10	0.10
BH21	0	0.5	0.5	0.05	0.05	0.05
BH22	0	0.5	0.5	0.10	0.10	0.10
BH23	0	0.5	0.5	0.05	0.05	0.05
BH24	0	0.5	0.5	0.10	0.10	0.10
BH25	0	0.5	0.5	0.05	0.05	0.05
BH26	0	0.5	0.5	0.10	0.10	0.10
BH27	0	0.5	0.5	0.05	0.05	0.05
BH28	0	0.5	0.5	0.10	0.10	0.10
BH29	0	0.5	0.5	0.05	0.05	0.05
BH30	0	0.5	0.5	0.10	0.10	0.10
BH31	0	0.5	0.5	0.05	0.05	0.05
BH32	0	0.5	0.5	0.10	0.10	0.10
BH33	0	0.5	0.5	0.05	0.05	0.05
BH34	0	0.5	0.5	0.10	0.10	0.10
BH35	0	0.5	0.5	0.05	0.05	0.05
BH36	0	0.5	0.5	0.10	0.10	0.10
BH37	0	0.5	0.5	0.05	0.05	0.05
BH38	0	0.5	0.5	0.10	0.10	0.10
BH39	0	0.5	0.5	0.05	0.05	0.05
BH40	0	0.5	0.5	0.10	0.10	0.10
BH41	0	0.5	0.5	0.05	0.05	0.05
BH42	0	0.5	0.5	0.10	0.10	0.10
BH43	0	0.5	0.5	0.05	0.05	0.05
BH44	0	0.5	0.5	0.10	0.10	0.10
BH45	0	0.5	0.5	0.05	0.05	0.05
BH46	0	0.5	0.5	0.10	0.10	0.10
BH47	0	0.5	0.5	0.05	0.05	0.05
BH48	0	0.5	0.5	0.10	0.10	0.10
BH49	0	0.5	0.5	0.05	0.05	0.05
BH50	0	0.5	0.5	0.10	0.10	0.10
BH51	0	0.5	0.5	0.05	0.05	0.05
BH52	0	0.5	0.5	0.10	0.10	0.10
BH53	0	0.5	0.5	0.05	0.05	0.05
BH54	0	0.5	0.5	0.10	0.10	0.10
BH55	0	0.5	0.5	0.05	0.05	0.05
BH56	0	0.5	0.5	0.10	0.10	0.10
BH57	0	0.5	0.5	0.05	0.05	0.05
BH58	0	0.5	0.5	0.10	0.10	0.10
BH59	0	0.5	0.5	0.05	0.05	0.05
BH60	0	0.5	0.5	0.10	0.10	0.10
BH61	0	0.5	0.5	0.05	0.05	0.05
BH62	0	0.5	0.5	0.10	0.10	0.10
BH63	0	0.5	0.5	0.05	0.05	0.05
BH64	0	0.5	0.5	0.10	0.10	0.10
BH65	0	0.5	0.5	0.05	0.05	0.05
BH66	0	0.5	0.5	0.10	0.10	0.10
BH67	0	0.5	0.5	0.05	0.05	0.05
BH68	0	0.5	0.5	0.10	0.10	0.10
BH69	0	0.5	0.5	0.05	0.05	0.05
BH70	0	0.5	0.5	0.10	0.10	0.10
BH71	0	0.5	0.5	0.05	0.05	0.05
BH72	0	0.5	0.5	0.10	0.10	0.10
BH73	0	0.5	0.5	0.05	0.05	0.05
BH74	0	0.5	0.5	0.10	0.10	0.10
BH75	0	0.5	0.5	0.05	0.05	0.05
BH76	0	0.5	0.5	0.10	0.10	0.10
BH77	0	0.5	0.5	0.05	0.05	0.05
BH78	0	0.5	0.5	0.10	0.10	0.10
BH79	0	0.5	0.5	0.05	0.05	0.05
BH80	0	0.5	0.5	0.10	0.10	0.10
BH81	0	0.5	0.5	0.05	0.05	0.05
BH82	0	0.5	0.5	0.10	0.10	0.10
BH83	0	0.5	0.5	0.05	0.05	0.05
BH84	0	0.5	0.5	0.10	0.10	0.10
BH85	0	0.5	0.5	0.05	0.05	0.05
BH86	0	0.5	0.5	0.10	0.10	0.10
BH87	0	0.5	0.5	0.05	0.05	0.05
BH88	0	0.5	0.5	0.10	0.10	0.10
BH89	0	0.5	0.5	0.05	0.05	0.05
BH90	0	0.5	0.5	0.10	0.10	0.10
BH91	0	0.5	0.5	0.05	0.05	0.05
BH92	0	0.5	0.5	0.10	0.10	0.10
BH93	0	0.5	0.5	0.05	0.05	0.05
BH94	0	0.5	0.5	0.10	0.10	0.10
BH95	0	0.5	0.5	0.05	0.05	0.05
BH96	0	0.5	0.5	0.10	0.10	0.10
BH97	0	0.5	0.5	0.05	0.05	0.05
BH98	0	0.5	0.5	0.10	0.10	0.10
BH99	0	0.5	0.5	0.05	0.05	0.05
BH100	0	0.5	0.5	0.10	0.10	0.10



Daily Site Visit Report

Summary of Daily Operations

10:06 Arrive on location
Safety paperwork
Flag sample points
Delineation of spill area
Field screen samples





Next Steps & Recommendations

- 1** Return to office
- 2** Discuss plan of remediation

Daily Site Visit Report







Site Photos

Viewing Direction: South 	Viewing Direction: West 
Bh20-01 sample point	Bh20-02 sample point
Viewing Direction: South 	Viewing Direction: East 
Bh20-03 sample point	Bh20-04 sample point






Daily Site Visit Report

<p>Viewing Direction: South</p>  <p>Bh20-05</p>	<p>Viewing Direction: West</p>  <p>Bh20-06 sample point</p>
<p>Viewing Direction: South</p>  <p>Bh20-07 sample point</p>	<p>Viewing Direction: South</p>  <p>Bh20-08</p>



Daily Site Visit Report

Viewing Direction: South	Viewing Direction: South
	
Bh20-09	Bh20-10

Viewing Direction: East

Bh20-11

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

A handwritten signature in black ink, appearing to be 'MP' or similar, written over a light blue horizontal line.



Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	2/6/2020
Site Location Name:	Rodney Robinson Federal 101H - Lease Road	Report Run Date:	2/11/2020 6:14 PM
Project Owner:	John Hurt	File (Project) #:	20E-00239
Project Manager:	Natalie Gordon	API #:	30-0025-46278
Client Contact Name:	John Hurt	Reference	01/24/20 Release
Client Contact Phone #:			

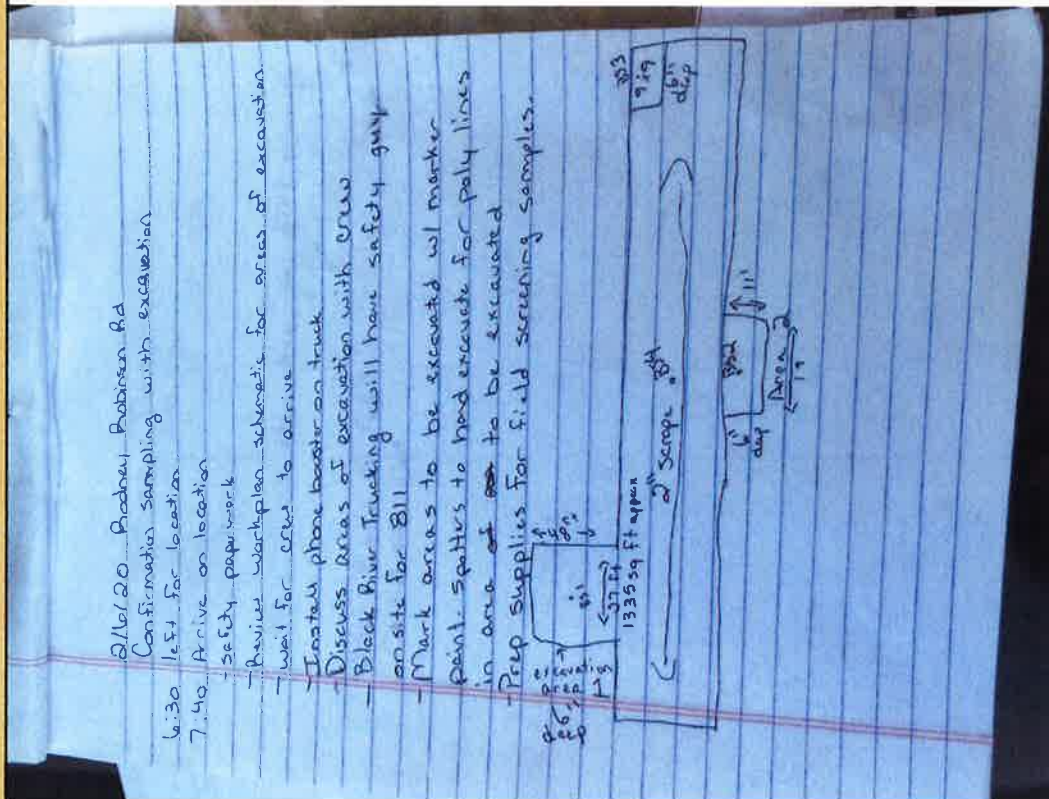
Summary of Times

Left Office	2/6/2020 6:20 AM
Arrived at Site	2/6/2020 7:40 AM
Departed Site	2/6/2020 2:29 PM
Returned to Office	2/6/2020 5:23 PM

Daily Site Visit Report



Site Sketch





Daily Site Visit Report

Spill Response and Sampling				Sampling		Data Collection (Check for Yes)	
Client:	Spill Date:	Spill Volume:	Spill Product:	Spill Location:	Spill Incident:	Spill Response:	Spill Cleanup:
Metador	2/16/20	1000000	1000000	1000000	1000000	1000000	1000000
Site Name:	216/20	1000000	1000000	1000000	1000000	1000000	1000000
Site Location:	1000000	1000000	1000000	1000000	1000000	1000000	1000000
Project Owner:	1000000	1000000	1000000	1000000	1000000	1000000	1000000
Project Manager:	1000000	1000000	1000000	1000000	1000000	1000000	1000000
Project #:	205-00239 002	1000000	1000000	1000000	1000000	1000000	1000000
Sample ID	Depth (ft)	VOC (ppm)	TPH (ppm)	Chloride (ppm)	Lab Analysis	Picture	Notes
BS1	0.38	17.8	501	1000	1000	1000	1000
BS2	0.10	20.8	2.15	2.779	1000	1000	1000
BS3	0.10	20.8	2.15	2.779	1000	1000	1000
BS4	0.10	20.8	2.15	2.779	1000	1000	1000



Daily Site Visit Report

Summary of Daily Operations

10:12 Arrive on location
Safety paperwork
Discuss excavation plan with crew
Excavate three areas
Collect samples
Field screen samples



Next Steps & Recommendations

- 1** Return to office
- 2** Send confirmation samples to lab
- 3** Scan and file paperwork

Daily Site Visit Report





Site Photos

Viewing Direction: West	Viewing Direction: South
 <p>Excavation area 1 6" BS20-01 L48'xW27'</p>	 <p>Excavation area 2 @ 6" L11'xW17' BS20-02</p>



Daily Site Visit Report

Viewing Direction: West	 <p>Excavation area 3 @ 6" BS20-03 L9'xW9'</p>
Viewing Direction: South	 <p>Excavation area 4 @ 2" scrape</p>

Daily Site Visit Report



Daily Site Visit Signature

Inspector: Monica Peppin

Signature:

A handwritten signature in black ink, appearing to be 'MP', written over a light gray rectangular background.

ATTACHMENT 5

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Friday, December 18, 2020 5:16 PM
To: Natalie Gordon
Subject: Fwd: NCE2003652970: Rodney Robinson Fed 101H Lease Road - 48-hr Notification of Confirmatory Sampling

----- Forwarded message -----

From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Fri, Dec 18, 2020 at 5:16 PM
Subject: NCE2003652970: Rodney Robinson Fed 101H Lease Road - 48-hr Notification of Confirmatory Sampling
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>, CFO_Spill, BLM_NM <blm_nm_cfo_spill@blm.gov>, Kelsey <KWade@blm.gov>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled some additional remediation fieldwork to be completed at the Rodney Robinson Fed 101H Lease Road followed by re-collection of several failed confirmatory samples. This work is to address the NM OCD closure denial associated with Incident # NRM2003757362, DOR: January 24, 2020.

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

On Tuesday, December 22, 2020 at approximately 8:00 a.m., Monica Peppin will be onsite to guide the additional excavation and re-collect confirmatory samples. She can be reached at 575-361-9880. If you need directions to the site, please do not hesitate to contact her. If you have any questions or concerns regarding this notification, please give me a call at 505-506-0040.

Thank you,
Natalie

Natalie Gordon
Project Manager

Vertex Resource Group Ltd.
213 S. Mesa Street
Carlsbad, NM 88220

P 575.725.5001 ext 709
C 505.506.0040
F

www.vertex.ca

Confidentiality Notice: This message and any attachments are solely for the intended recipient and may contain confidential or privileged information. If you are not the intended recipient, any disclosure, copying, use, or distribution of the information included in this message and any attachment is prohibited. If you have received this communication in error, please notify us by reply email and immediately and permanently delete this message and any attachments. Thank you.

Natalie Gordon

From: Natalie Gordon
Sent: Monday, February 3, 2020 3:25 PM
To: 'emnrd-ocd-district1spills@state.nm.us'; Mike Bratcher (mike.bratcher@state.nm.us); 'ramona.marcus@state.nm.us'; 'blm_nm_cfo_spill@blm.gov'; Wade , Kelsey
Cc: Dennis Williams (DWilliams@vertex.ca); 'John Hurt'
Subject: Rodney Robinson Federal 101H Lease Road 48-hr Sampling Notification - Matador Resources

All:

Please accept this email as 48-hr notification that Vertex Resource Services Inc. has scheduled confirmation sampling to be conducted at Rodney Robinson Federal 101H Lease Road for an incident that occurred on 01/24/2020. The initial C-141 was submitted by Matador Production Company on 02/03/2020. No RP #/Incident # has been assigned at this time.

On February 5, 2020 beginning at 8:00 a.m., Vertex personnel will be onsite to guide remediation efforts of the above-reference release. Once excavation activities are complete at approximately 3:30 p.m., Vertex will collect confirmation samples to obtain closure of the incident.

If you need assistance with directions to the site, or have any questions or concerns, please do not hesitate to contact me at 505-506-0040.

Thank you,
Natalie

ATTACHMENT 6

Client Name: Matador Production Company
 Site Name: Rodney Robinson Federal 101H Lease Road
 Project #: 20E-00239-002
 Lab Reports: 2001C16 and 2002341

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatiles Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Quantab - High/Low)	Volatile		Extractable					Chloride
			(ppm)	(ppm)	(+/-)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
BH 20-01	0	January 29, 2020	-	-	15,682	<0.024	<0.219	<4.9	59.0	<43	59	59	20,000
BH 20-01	0.5	January 29, 2020	-	-	8,040	-	-	-	-	-	-	-	-
BH 20-01	1	January 29, 2020	-	-	1,279	-	-	-	-	-	-	-	-
BH 20-01	2	January 29, 2020	-	-	547	<0.024	<0.217	<4.8	<9.9	<50	<14.7	<64.7	470
BH 20-01	3	January 29, 2020	-	-	637	-	-	-	-	-	-	-	-
BH 20-02	0	January 29, 2020	-	-	109	-	-	-	-	-	-	-	-
BH 20-03	0	January 29, 2020	-	-	215	-	-	-	-	-	-	-	-
BH 20-04	0	January 29, 2020	-	-	806	-	-	-	-	-	-	-	-
BH 20-05	0	January 29, 2020	-	-	6,491	<0.023	<0.207	<4.6	17.0	<48	17	17	340
BH 20-05.1	0	January 29, 2020	-	-	504	-	-	-	-	-	-	-	-
BH 20-06	0	January 29, 2020	-	-	149	-	-	-	-	-	-	-	-
BH 20-07	0	January 29, 2020	-	-	17,652	-	-	-	-	-	-	-	-
BH 20-07	0.5	January 29, 2020	-	-	553	<0.023	<0.211	<4.7	<9.9	<50	<14.6	<64.6	650
BH 20-07	1	January 29, 2020	-	-	126	-	-	-	-	-	-	-	-
BH 20-07	2	January 29, 2020	-	-	58	-	-	-	-	-	-	-	-
BH 20-08	0	January 29, 2020	-	-	302	-	-	-	-	-	-	-	-
BH 20-09	0	January 29, 2020	-	-	145	-	-	-	-	-	-	-	-
BH 20-09	0.5	January 29, 2020	-	-	75	-	-	-	-	-	-	-	-
BH 20-09	1	January 29, 2020	-	-	29	-	-	-	-	-	-	-	-
BH 20-09	2	January 29, 2020	-	-	29	-	-	-	-	-	-	-	-
BH 20-10	0	January 29, 2020	-	-	302	-	-	-	-	-	-	-	-
BH 20-11	1	January 29, 2020	-	-	228	-	-	-	-	-	-	-	-
BS 20-01	0.5	February 6, 2020	-	-	501	<0.024	<0.219	<4.9	<9.4	<47	<14.3	<61.3	320
BS 20-02	0.5	February 6, 2020	-	-	<0	<0.025	<0.222	<4.9	<8.7	<44	<13.6	<57.6	<60
BS 20-03	0.5	February 6, 2020	-	-	2,779	<0.025	<0.222	<4.9	<9.5	<47	<14.4	<61.4	3,000
BS 20-04	0.167	February 6, 2020	-	-	4,444	<0.025	<0.225	<5.0	<9.4	<47	<14.4	<61.4	5,000

"-" - Not assessed/analyzed

Bold and shaded indicates exceedance outside of, or near, applied action level

Client Name: Matador Production Company
 Site Name: Rodney Robinson Federal 101H Lease RD
 NM OCD Incident Tracking Number: NRM2003757362
 Project #: 20E-00239-002
 Lab Report: 2012B36

Table 3. Confirmatory Re-Sampling Laboratory Data									
Sample Description			Petroleum Hydrocarbons						
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable				
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	GRO + DRO	Total Petroleum Hydrocarbons (TPH)
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS20-01	0-1	December 22, 2020	<0.023	<0.207	<4.6	<9.4	<47	<14	<61
BS20-02	0-1	December 22, 2020	<0.023	<0.21	<4.7	<9.2	<46	<13.9	<59.9
BS20-03	0-1	December 22, 2020	<0.025	<0.221	<4.9	<9.9	<50	<14.8	<64.8
BS20-04	0-1	December 22, 2020	<0.024	<0.22	<4.9	<9.8	<49	<14.7	<63.7
BS20-05	0-1	December 22, 2020	<0.025	<0.222	<4.9	<9.5	<47	<14.4	<61.4
BS20-06	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<49	<14.5	<63.5
BS20-07	0-1	December 22, 2020	<0.024	<0.22	<4.9	<9.7	<48	<14.6	<62.6
BS20-08	0-1	December 22, 2020	<0.023	<0.207	<4.6	<9.6	<48	<14.2	<62.2
BS20-09	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.4	<47	<14.1	<61.1
BS20-10	0-1	December 22, 2020	<0.025	<0.224	<5.0	<9.3	<46	<14.3	<60.3
BS20-11	0-1	December 22, 2020	<0.023	<0.21	<4.7	<9.1	<46	<13.8	<59.8
BS20-12	0-1	December 22, 2020	<0.024	<0.217	<4.8	<9.7	<48	<14.5	<62.5
BS20-13	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.5	<47	<14.3	<61.3
BS20-14	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.8	<49	<14.6	<63.6
BS20-15	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.3	<46	<14	<60
BS20-16	0-1	December 22, 2020	<0.024	<0.219	<4.9	<9.6	<48	<14.5	<62.5
BS20-17	0-1	December 22, 2020	<0.023	<0.208	<4.6	<10	<50	<14.6	<64.6
BS20-18	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.3	<46	<14	<60
BS20-19	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.9	<50	<14.6	<64.6
BS20-20	0-1	December 22, 2020	<0.023	<0.211	<4.7	<9.2	<46	<13.9	<59.9
BS20-21	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.4	<47	<14.1	<61.1
BS20-22	0-1	December 22, 2020	<0.023	<0.207	<4.6	<9.0	<45	<13.6	<58.6
BS20-23	0-1	December 22, 2020	<0.025	<0.221	<4.9	<9.0	<45	<13.9	<58.9
BS20-24	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.5	<47	<14.3	<61.3
BS20-25	0-1	December 22, 2020	<0.025	<0.222	<4.9	<9.1	<46	<14	<60
BS20-26	0-1	December 22, 2020	<0.023	<0.208	<4.6	<8.5	<42	<13.1	<55.1
BS20-27	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.4	<47	<14.1	<61.1
BS20-28	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.4	<47	<14.2	<61.2
BS20-29	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.1	<45	<13.8	<58.8
BS20-30	0-1	December 22, 2020	<0.024	<0.217	<4.8	<9.0	<45	<13.8	<58.8
BS20-31	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.7	<48	<14.4	<62.4
BS20-32	0-1	December 22, 2020	<0.025	<0.225	<5.0	<9.5	<48	<14.5	<62.5
BS20-33	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<48	<14.5	<62.5
BS20-34	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<48	<14.5	<62.5
BS20-35	0-1	December 22, 2020	<0.024	<0.219	<4.9	<10	<50	<14.9	<64.9
BS20-36	0-1	December 22, 2020	<0.025	<0.222	<4.9	<10	<50	<14.9	<64.9
BS20-37	0-1	December 22, 2020	<0.024	<0.217	<4.8	<9.7	<49	<14.5	<63.5
BS20-38	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.5	<48	<14.3	<62.3
BS20-39	0-1	December 22, 2020	<0.024	<0.217	<4.8	<9.9	<49	<14.7	<63.7
BS20-40	0-1	December 22, 2020	<0.023	<0.211	<4.7	<10	<50	<14.7	<64.7
BS20-41	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4
BS20-42	0-1	December 22, 2020	<0.023	<0.21	<4.7	<10	<50	<14.7	<64.7
BS20-43	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.4	<47	<14.2	<61.2
BS20-44	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.6	<48	<14.4	<62.4
BS20-45	0-1	December 22, 2020	<0.025	<0.225	<5.0	<9.5	<47	<14.5	<61.5
BS20-46	0-1	December 22, 2020	<0.024	<0.215	<4.9	<9.3	<47	<14.2	<61.2
BS20-47	0-1	December 22, 2020	<0.024	<0.22	<4.9	<9.5	<48	<14.4	<62.4
BS20-48	0-1	December 22, 2020	<0.024	<0.215	<4.8	<10	<50	<14.8	<64.8
WS20-01	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.5	<48	<14.2	<62.2
WS20-02	0-1	December 22, 2020	<0.024	<0.212	<4.7	<9.2	<46	<13.9	<59.9
WS20-03	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.5	<48	<14.3	<62.3
WS20-04	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.8	<49	<14.6	<63.6
WS20-05	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<49	<14.5	<63.5
WS20-06	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.5	<47	<14.2	<61.2
WS20-07	0-1	December 22, 2020	<0.024	<0.22	<4.9	<9.7	<49	<14.6	<63.6
WS20-08	0-1	December 22, 2020	<0.024	<0.22	<4.9	<9.5	<47	<14.4	<61.4

Client Name: Matador Production Company
 Site Name: Rodney Robinson Federal 101H Lease RD
 NM OCD Incident Tracking Number: NRM2003757362
 Project #: 20E-00239-002
 Lab Report: 2012836

Table 3. Confirmatory Re-Sampling Laboratory Data										
Sample Description			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile		Extractable					Chloride
			Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
WS20-09	0-1	December 22, 2020	<0.025	<0.222	<4.9	<9.9	<50	<14.8	<64.8	<60
WS20-10	0-1	December 22, 2020	<0.023	<0.208	<4.6	<9.2	<46	<13.8	<59.8	<61
WS20-11	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<49	<14.5	<63.5	<60
WS20-12	0-1	December 22, 2020	<0.025	<0.225	<5.0	<10	<50	<15	<65	<60
WS20-13	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.6	<48	<14.4	<62.4	<60
WS20-14	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	<60
WS20-15	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.6	<48	<14.3	<62.3	<60
WS20-16	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.7	<48	<14.5	<62.5	<60
WS20-17	0-1	December 22, 2020	<0.024	<0.217	<4.8	<9.6	<48	<14.4	<62.4	<61
WS20-18	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.1	<45	<13.9	<58.9	<60
WS20-19	0-1	December 22, 2020	<0.025	<0.224	<5.0	<9.4	<47	<14.4	<61.4	<60
WS20-20	0-1	December 22, 2020	<0.024	<0.219	<4.9	<9.3	<47	<14.2	<61.2	<60
WS20-21	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.8	<49	<14.6	<63.6	<60
WS20-22	0-1	December 22, 2020	<0.024	<0.216	<4.8	<9.7	<49	<14.5	<63.5	<60
WS20-23	0-1	December 22, 2020	<0.024	<0.213	<4.7	<9.1	<46	<13.8	<59.8	<59
WS20-24	0-1	December 22, 2020	<0.024	<0.215	<4.8	<9.6	<48	<14.4	<62.4	<61

"-" indicates not sampled/analyzed

Bold and shaded indicates exceedance outside of NM OCD Closure Criteria

ATTACHMENT 7



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

December 31, 2020

Natalie Gordon

Vertex Resource Group Ltd.

3101 Boyd Drive

Carlsbad, NM 88220

TEL: (505) 506-0040

FAX:

RE: Rodney Robinson Federal 101H Lease Rd

OrderNo.: 2012B36

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 72 sample(s) on 12/23/2020 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-01 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:30:00 AM

Lab ID: 2012B36-001

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/24/2020 1:57:32 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 1:57:32 PM
Surr: DNOP	69.0	30.4-154		%Rec	1	12/24/2020 1:57:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/25/2020 6:25:13 AM
Surr: BFB	86.3	75.3-105		%Rec	1	12/25/2020 6:25:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	12/25/2020 6:25:13 AM
Toluene	ND	0.046		mg/Kg	1	12/25/2020 6:25:13 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/25/2020 6:25:13 AM
Xylenes, Total	ND	0.092		mg/Kg	1	12/25/2020 6:25:13 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 6:25:13 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 8:38:54 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 1 of 87

Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-02 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:35:00 AM

Lab ID: 2012B36-002

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/24/2020 2:21:25 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/24/2020 2:21:25 PM
Surr: DNOP	52.0	30.4-154		%Rec	1	12/24/2020 2:21:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/25/2020 7:37:00 AM
Surr: BFB	86.2	75.3-105		%Rec	1	12/25/2020 7:37:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	12/25/2020 7:37:00 AM
Toluene	ND	0.047		mg/Kg	1	12/25/2020 7:37:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/25/2020 7:37:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	12/25/2020 7:37:00 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	12/25/2020 7:37:00 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	100	60		mg/Kg	20	12/29/2020 8:51:18 AM

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

Qualifiers:

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-03 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:40:00 AM

Lab ID: 2012B36-003

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/24/2020 2:45:20 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/24/2020 2:45:20 PM
Surr: DNOP	39.0	30.4-154		%Rec	1	12/24/2020 2:45:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/25/2020 9:11:38 AM
Surr: BFB	85.8	75.3-105		%Rec	1	12/25/2020 9:11:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	12/25/2020 9:11:38 AM
Toluene	ND	0.049		mg/Kg	1	12/25/2020 9:11:38 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/25/2020 9:11:38 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/25/2020 9:11:38 AM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	12/25/2020 9:11:38 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	67	60		mg/Kg	20	12/29/2020 9:03:43 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-04 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:45:00 AM

Lab ID: 2012B36-004

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/24/2020 3:09:20 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 3:09:20 PM
Surr: DNOP	38.7	30.4-154		%Rec	1	12/24/2020 3:09:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/25/2020 9:34:59 AM
Surr: BFB	86.8	75.3-105		%Rec	1	12/25/2020 9:34:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 9:34:59 AM
Toluene	ND	0.049		mg/Kg	1	12/25/2020 9:34:59 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/25/2020 9:34:59 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/25/2020 9:34:59 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 9:34:59 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 9:16:07 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-05 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:50:00 AM

Lab ID: 2012B36-005

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 3:33:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 3:33:10 PM
Surr: DNOP	34.7	30.4-154		%Rec	1	12/24/2020 3:33:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/25/2020 9:58:41 AM
Surr: BFB	89.0	75.3-105		%Rec	1	12/25/2020 9:58:41 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	12/25/2020 9:58:41 AM
Toluene	ND	0.049		mg/Kg	1	12/25/2020 9:58:41 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/25/2020 9:58:41 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/25/2020 9:58:41 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/25/2020 9:58:41 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 9:53:22 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-06 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 9:55:00 AM

Lab ID: 2012B36-006

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/24/2020 3:57:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 3:57:07 PM
Surr: DNOP	30.6	30.4-154		%Rec	1	12/24/2020 3:57:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/25/2020 10:22:18 AM
Surr: BFB	85.3	75.3-105		%Rec	1	12/25/2020 10:22:18 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 10:22:18 AM
Toluene	ND	0.048		mg/Kg	1	12/25/2020 10:22:18 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/25/2020 10:22:18 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/25/2020 10:22:18 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	12/25/2020 10:22:18 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 10:55:23 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-07 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:00:00 AM

Lab ID: 2012B36-007

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2020 9:44:56 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 9:44:56 AM
Surr: DNOP	76.4	30.4-154		%Rec	1	12/28/2020 9:44:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/25/2020 10:45:53 AM
Surr: BFB	89.7	75.3-105		%Rec	1	12/25/2020 10:45:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 10:45:53 AM
Toluene	ND	0.049		mg/Kg	1	12/25/2020 10:45:53 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/25/2020 10:45:53 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/25/2020 10:45:53 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/25/2020 10:45:53 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	94	60		mg/Kg	20	12/29/2020 11:07:48 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-08 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:05:00 AM

Lab ID: 2012B36-008

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 10:12:01 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 10:12:01 AM
Surr: DNOP	58.0	30.4-154		%Rec	1	12/28/2020 10:12:01 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/25/2020 11:09:30 AM
Surr: BFB	87.7	75.3-105		%Rec	1	12/25/2020 11:09:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	12/25/2020 11:09:30 AM
Toluene	ND	0.046		mg/Kg	1	12/25/2020 11:09:30 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/25/2020 11:09:30 AM
Xylenes, Total	ND	0.092		mg/Kg	1	12/25/2020 11:09:30 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/25/2020 11:09:30 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	110	60		mg/Kg	20	12/29/2020 11:20:12 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-09 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:10:00 AM

Lab ID: 2012B36-009

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: mb
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/28/2020 10:36:02 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/28/2020 10:36:02 AM
Surr: DNOP	41.3	30.4-154		%Rec	1	12/28/2020 10:36:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/25/2020 11:33:07 AM
Surr: BFB	87.8	75.3-105		%Rec	1	12/25/2020 11:33:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 11:33:07 AM
Toluene	ND	0.047		mg/Kg	1	12/25/2020 11:33:07 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/25/2020 11:33:07 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/25/2020 11:33:07 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 11:33:07 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 11:32:37 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-10 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:15:00 AM

Lab ID: 2012B36-010

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/28/2020 9:15:21 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2020 9:15:21 PM
Surr: DNOP	45.9	30.4-154		%Rec	1	12/28/2020 9:15:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/25/2020 11:56:42 AM
Surr: BFB	88.0	75.3-105		%Rec	1	12/25/2020 11:56:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	12/25/2020 11:56:42 AM
Toluene	ND	0.050		mg/Kg	1	12/25/2020 11:56:42 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/25/2020 11:56:42 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/25/2020 11:56:42 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/25/2020 11:56:42 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/29/2020 11:45:02 AM

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

Qualifiers:

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-11 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:20:00 AM

Lab ID: 2012B36-011

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/28/2020 9:38:56 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2020 9:38:56 PM
Surr: DNOP	36.2	30.4-154		%Rec	1	12/28/2020 9:38:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/25/2020 12:20:27 PM
Surr: BFB	86.1	75.3-105		%Rec	1	12/25/2020 12:20:27 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	12/25/2020 12:20:27 PM
Toluene	ND	0.047		mg/Kg	1	12/25/2020 12:20:27 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/25/2020 12:20:27 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/25/2020 12:20:27 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 12:20:27 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 11:57:27 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-12 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:25:00 AM

Lab ID: 2012B36-012

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2020 10:02:31 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 10:02:31 PM
Surr: DNOP	36.2	30.4-154		%Rec	1	12/28/2020 10:02:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/25/2020 12:43:56 PM
Surr: BFB	87.3	75.3-105		%Rec	1	12/25/2020 12:43:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 12:43:56 PM
Toluene	ND	0.048		mg/Kg	1	12/25/2020 12:43:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/25/2020 12:43:56 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/25/2020 12:43:56 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 12:43:56 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 12:09:51 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-13 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:30:00 AM

Lab ID: 2012B36-013

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/28/2020 10:26:07 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/28/2020 10:26:07 PM
Surr: DNOP	36.7	30.4-154		%Rec	1	12/28/2020 10:26:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/25/2020 1:31:08 PM
Surr: BFB	88.8	75.3-105		%Rec	1	12/25/2020 1:31:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 1:31:08 PM
Toluene	ND	0.048		mg/Kg	1	12/25/2020 1:31:08 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/25/2020 1:31:08 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/25/2020 1:31:08 PM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/25/2020 1:31:08 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 12:22:16 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-14 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:35:00 AM

Lab ID: 2012B36-014

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/28/2020 10:49:42 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2020 10:49:42 PM
Surr: DNOP	42.2	30.4-154		%Rec	1	12/28/2020 10:49:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/25/2020 1:54:48 PM
Surr: BFB	88.3	75.3-105		%Rec	1	12/25/2020 1:54:48 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 1:54:48 PM
Toluene	ND	0.048		mg/Kg	1	12/25/2020 1:54:48 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/25/2020 1:54:48 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/25/2020 1:54:48 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/25/2020 1:54:48 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 12:59:30 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-15 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:40:00 AM

Lab ID: 2012B36-015

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/28/2020 11:13:15 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2020 11:13:15 PM
Surr: DNOP	35.1	30.4-154		%Rec	1	12/28/2020 11:13:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/25/2020 2:18:22 PM
Surr: BFB	87.6	75.3-105		%Rec	1	12/25/2020 2:18:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 2:18:22 PM
Toluene	ND	0.047		mg/Kg	1	12/25/2020 2:18:22 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/25/2020 2:18:22 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/25/2020 2:18:22 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/25/2020 2:18:22 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 1:11:55 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-16 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:45:00 AM

Lab ID: 2012B36-016

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 11:36:46 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 11:36:46 PM
Surr: DNOP	32.0	30.4-154		%Rec	1	12/28/2020 11:36:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/25/2020 2:41:53 PM
Surr: BFB	86.5	75.3-105		%Rec	1	12/25/2020 2:41:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	12/25/2020 2:41:53 PM
Toluene	ND	0.049		mg/Kg	1	12/25/2020 2:41:53 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/25/2020 2:41:53 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/25/2020 2:41:53 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/25/2020 2:41:53 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 1:24:19 PM

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

Qualifiers:

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-17 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:50:00 AM

Lab ID: 2012B36-017

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/29/2020 12:00:15 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2020 12:00:15 AM
Surr: DNOP	38.6	30.4-154		%Rec	1	12/29/2020 12:00:15 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/25/2020 3:05:32 PM
Surr: BFB	89.8	75.3-105		%Rec	1	12/25/2020 3:05:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	12/25/2020 3:05:32 PM
Toluene	ND	0.046		mg/Kg	1	12/25/2020 3:05:32 PM
Ethylbenzene	ND	0.046		mg/Kg	1	12/25/2020 3:05:32 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/25/2020 3:05:32 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/25/2020 3:05:32 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 1:36:44 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-18 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 10:55:00 AM

Lab ID: 2012B36-018

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/29/2020 1:10:30 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/29/2020 1:10:30 AM
Surr: DNOP	33.6	30.4-154		%Rec	1	12/29/2020 1:10:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/26/2020 7:07:20 PM
Surr: BFB	93.4	75.3-105		%Rec	1	12/26/2020 7:07:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/26/2020 7:07:20 PM
Toluene	ND	0.047		mg/Kg	1	12/26/2020 7:07:20 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/26/2020 7:07:20 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/26/2020 7:07:20 PM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/26/2020 7:07:20 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/29/2020 1:49:08 PM

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

Qualifiers:

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-19 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:00:00 AM

Lab ID: 2012B36-019

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/29/2020 2:20:36 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2020 2:20:36 AM
Surr: DNOP	33.1	30.4-154		%Rec	1	12/29/2020 2:20:36 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/26/2020 8:18:22 PM
Surr: BFB	89.5	75.3-105		%Rec	1	12/26/2020 8:18:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/26/2020 8:18:22 PM
Toluene	ND	0.047		mg/Kg	1	12/26/2020 8:18:22 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/26/2020 8:18:22 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/26/2020 8:18:22 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/26/2020 8:18:22 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 2:01:33 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-20 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:05:00 AM

Lab ID: 2012B36-020

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/29/2020 2:43:56 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/29/2020 2:43:56 AM
Surr: DNOP	29.5	30.4-154	S	%Rec	1	12/29/2020 2:43:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/26/2020 9:29:04 PM
Surr: BFB	89.3	75.3-105		%Rec	1	12/26/2020 9:29:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/26/2020 9:29:04 PM
Toluene	ND	0.047		mg/Kg	1	12/26/2020 9:29:04 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/26/2020 9:29:04 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/26/2020 9:29:04 PM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/26/2020 9:29:04 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 2:13:57 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-21 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:10:00 AM

Lab ID: 2012B36-021

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/29/2020 3:07:14 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2020 3:07:14 AM
Surr: DNOP	34.2	30.4-154		%Rec	1	12/29/2020 3:07:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/26/2020 9:52:47 PM
Surr: BFB	92.6	75.3-105		%Rec	1	12/26/2020 9:52:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/26/2020 9:52:47 PM
Toluene	ND	0.047		mg/Kg	1	12/26/2020 9:52:47 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/26/2020 9:52:47 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/26/2020 9:52:47 PM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/26/2020 9:52:47 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 2:51:11 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-22 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:15:00 AM

Lab ID: 2012B36-022

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	12/29/2020 3:30:31 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/29/2020 3:30:31 AM
Surr: DNOP	38.8	30.4-154		%Rec	1	12/29/2020 3:30:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/26/2020 10:16:19 PM
Surr: BFB	89.0	75.3-105		%Rec	1	12/26/2020 10:16:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/26/2020 10:16:19 PM
Toluene	ND	0.046		mg/Kg	1	12/26/2020 10:16:19 PM
Ethylbenzene	ND	0.046		mg/Kg	1	12/26/2020 10:16:19 PM
Xylenes, Total	ND	0.092		mg/Kg	1	12/26/2020 10:16:19 PM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/26/2020 10:16:19 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	72	60		mg/Kg	20	12/29/2020 3:53:13 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-23 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:20:00 AM

Lab ID: 2012B36-023

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	12/29/2020 3:54:11 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/29/2020 3:54:11 AM
Surr: DNOP	30.0	30.4-154	S	%Rec	1	12/29/2020 3:54:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/26/2020 10:40:08 PM
Surr: BFB	88.9	75.3-105		%Rec	1	12/26/2020 10:40:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/26/2020 10:40:08 PM
Toluene	ND	0.049		mg/Kg	1	12/26/2020 10:40:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/26/2020 10:40:08 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/26/2020 10:40:08 PM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	12/26/2020 10:40:08 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/29/2020 4:30:27 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-24 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:25:00 AM

Lab ID: 2012B36-024

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/29/2020 4:17:44 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2020 4:17:44 AM
Surr: DNOP	29.8	30.4-154	S	%Rec	1	12/29/2020 4:17:44 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/26/2020 11:50:47 PM
Surr: BFB	91.6	75.3-105		%Rec	1	12/26/2020 11:50:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/26/2020 11:50:47 PM
Toluene	ND	0.048		mg/Kg	1	12/26/2020 11:50:47 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/26/2020 11:50:47 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/26/2020 11:50:47 PM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/26/2020 11:50:47 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 4:42:52 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-25 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:30:00 AM

Lab ID: 2012B36-025

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/29/2020 5:05:05 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/29/2020 5:05:05 AM
Surr: DNOP	39.4	30.4-154		%Rec	1	12/29/2020 5:05:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2020 12:14:16 AM
Surr: BFB	92.9	75.3-105		%Rec	1	12/27/2020 12:14:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/27/2020 12:14:16 AM
Toluene	ND	0.049		mg/Kg	1	12/27/2020 12:14:16 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2020 12:14:16 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/27/2020 12:14:16 AM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/27/2020 12:14:16 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 4:55:16 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-26 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:35:00 AM

Lab ID: 2012B36-026

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	12/29/2020 5:28:47 AM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	12/29/2020 5:28:47 AM
Surr: DNOP	44.2	30.4-154		%Rec	1	12/29/2020 5:28:47 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/27/2020 12:37:59 AM
Surr: BFB	88.0	75.3-105		%Rec	1	12/27/2020 12:37:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/27/2020 12:37:59 AM
Toluene	ND	0.046		mg/Kg	1	12/27/2020 12:37:59 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/27/2020 12:37:59 AM
Xylenes, Total	ND	0.093		mg/Kg	1	12/27/2020 12:37:59 AM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	12/27/2020 12:37:59 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 5:07:41 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-27 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:40:00 AM

Lab ID: 2012B36-027

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/29/2020 5:52:22 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2020 5:52:22 AM
Surr: DNOP	38.5	30.4-154		%Rec	1	12/29/2020 5:52:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/27/2020 1:01:54 AM
Surr: BFB	92.1	75.3-105		%Rec	1	12/27/2020 1:01:54 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 1:01:54 AM
Toluene	ND	0.047		mg/Kg	1	12/27/2020 1:01:54 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/27/2020 1:01:54 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/27/2020 1:01:54 AM
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/27/2020 1:01:54 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 5:20:06 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-28 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:45:00 AM

Lab ID: 2012B36-028

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/29/2020 6:16:07 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2020 6:16:07 AM
Surr: DNOP	35.4	30.4-154		%Rec	1	12/29/2020 6:16:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2020 1:25:49 AM
Surr: BFB	91.7	75.3-105		%Rec	1	12/27/2020 1:25:49 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 1:25:49 AM
Toluene	ND	0.048		mg/Kg	1	12/27/2020 1:25:49 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2020 1:25:49 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/27/2020 1:25:49 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/27/2020 1:25:49 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/29/2020 5:57:20 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-29 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:50:00 AM

Lab ID: 2012B36-029

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/29/2020 6:39:55 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/29/2020 6:39:55 AM
Surr: DNOP	30.4	30.4-154		%Rec	1	12/29/2020 6:39:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/27/2020 1:49:21 AM
Surr: BFB	88.4	75.3-105		%Rec	1	12/27/2020 1:49:21 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 1:49:21 AM
Toluene	ND	0.047		mg/Kg	1	12/27/2020 1:49:21 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/27/2020 1:49:21 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/27/2020 1:49:21 AM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	12/27/2020 1:49:21 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 6:09:45 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-30 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 11:55:00 AM

Lab ID: 2012B36-030

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	12/29/2020 7:03:26 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/29/2020 7:03:26 AM
Surr: DNOP	23.2	30.4-154	S	%Rec	1	12/29/2020 7:03:26 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2020 2:12:58 AM
Surr: BFB	90.0	75.3-105		%Rec	1	12/27/2020 2:12:58 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 2:12:58 AM
Toluene	ND	0.048		mg/Kg	1	12/27/2020 2:12:58 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2020 2:12:58 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/27/2020 2:12:58 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	12/27/2020 2:12:58 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 6:22:09 PM

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

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-31 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:00:00 PM

Lab ID: 2012B36-031

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/29/2020 7:27:03 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/29/2020 7:27:03 AM
Surr: DNOP	30.7	30.4-154		%Rec	1	12/29/2020 7:27:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/27/2020 2:36:40 AM
Surr: BFB	86.3	75.3-105		%Rec	1	12/27/2020 2:36:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 2:36:40 AM
Toluene	ND	0.047		mg/Kg	1	12/27/2020 2:36:40 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/27/2020 2:36:40 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/27/2020 2:36:40 AM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	12/27/2020 2:36:40 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 6:34:33 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-32 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:05:00 PM

Lab ID: 2012B36-032

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/29/2020 7:50:37 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/29/2020 7:50:37 AM
Surr: DNOP	27.7	30.4-154	S	%Rec	1	12/29/2020 7:50:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/27/2020 3:00:13 AM
Surr: BFB	90.5	75.3-105		%Rec	1	12/27/2020 3:00:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/27/2020 3:00:13 AM
Toluene	ND	0.050		mg/Kg	1	12/27/2020 3:00:13 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/27/2020 3:00:13 AM
Xylenes, Total	ND	0.10		mg/Kg	1	12/27/2020 3:00:13 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/27/2020 3:00:13 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 6:46:58 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-33 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:10:00 PM

Lab ID: 2012B36-033

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/29/2020 8:14:20 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/29/2020 8:14:20 AM
Surr: DNOP	27.7	30.4-154	S	%Rec	1	12/29/2020 8:14:20 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2020 3:23:40 AM
Surr: BFB	91.1	75.3-105		%Rec	1	12/27/2020 3:23:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 3:23:40 AM
Toluene	ND	0.048		mg/Kg	1	12/27/2020 3:23:40 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2020 3:23:40 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/27/2020 3:23:40 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/27/2020 3:23:40 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 6:59:23 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-34 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:15:00 PM

Lab ID: 2012B36-034

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/29/2020 8:38:00 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/29/2020 8:38:00 AM
Surr: DNOP	20.3	30.4-154	S	%Rec	1	12/29/2020 8:38:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2020 4:10:37 AM
Surr: BFB	91.1	75.3-105		%Rec	1	12/27/2020 4:10:37 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 4:10:37 AM
Toluene	ND	0.048		mg/Kg	1	12/27/2020 4:10:37 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2020 4:10:37 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/27/2020 4:10:37 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/27/2020 4:10:37 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 7:11:48 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 Quantitative Limit		RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix			

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-35 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:20:00 PM

Lab ID: 2012B36-035

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/29/2020 9:01:41 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2020 9:01:41 AM
Surr: DNOP	23.3	30.4-154	S	%Rec	1	12/29/2020 9:01:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2020 4:34:14 AM
Surr: BFB	91.9	75.3-105		%Rec	1	12/27/2020 4:34:14 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 4:34:14 AM
Toluene	ND	0.049		mg/Kg	1	12/27/2020 4:34:14 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2020 4:34:14 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/27/2020 4:34:14 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/27/2020 4:34:14 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 7:24:12 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-36 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:25:00 PM

Lab ID: 2012B36-036

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/29/2020 9:25:23 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/29/2020 9:25:23 AM
Surr: DNOP	23.8	30.4-154	S	%Rec	1	12/29/2020 9:25:23 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2020 4:57:42 AM
Surr: BFB	92.3	75.3-105		%Rec	1	12/27/2020 4:57:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/27/2020 4:57:42 AM
Toluene	ND	0.049		mg/Kg	1	12/27/2020 4:57:42 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2020 4:57:42 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/27/2020 4:57:42 AM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/27/2020 4:57:42 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 7:36:37 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 2012B36

Date Reported: 12/31/2020

CLIENT: Vertex Resource Group Ltd.**Client Sample ID:** BS20-37 0-1**Project:** Rodney Robinson Federal 101H Lease R**Collection Date:** 12/22/2020 12:30:00 PM**Lab ID:** 2012B36-037**Matrix:** SOIL**Received Date:** 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/29/2020 9:49:02 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/29/2020 9:49:02 AM
Surr: DNOP	19.6	30.4-154	S	%Rec	1	12/29/2020 9:49:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/27/2020 5:21:14 AM
Surr: BFB	90.6	75.3-105		%Rec	1	12/27/2020 5:21:14 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/27/2020 5:21:14 AM
Toluene	ND	0.048		mg/Kg	1	12/27/2020 5:21:14 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/27/2020 5:21:14 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/27/2020 5:21:14 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/27/2020 5:21:14 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 7:49:01 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-38 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:35:00 PM

Lab ID: 2012B36-038

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 1:20:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/24/2020 1:20:24 PM
Surr: DNOP	88.0	30.4-154		%Rec	1	12/24/2020 1:20:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2020 8:21:00 PM
Surr: BFB	94.8	75.3-105		%Rec	1	12/28/2020 8:21:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/28/2020 8:21:00 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2020 8:21:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2020 8:21:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/28/2020 8:21:00 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/28/2020 8:21:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	59		mg/Kg	20	12/29/2020 8:26:14 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-39 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:40:00 PM

Lab ID: 2012B36-039

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/24/2020 2:55:04 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 2:55:04 PM
Surr: DNOP	39.9	30.4-154		%Rec	1	12/24/2020 2:55:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2020 9:31:41 PM
Surr: BFB	93.9	75.3-105		%Rec	1	12/28/2020 9:31:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/28/2020 9:31:41 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2020 9:31:41 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2020 9:31:41 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/28/2020 9:31:41 PM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/28/2020 9:31:41 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 8:38:39 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-40 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:45:00 PM

Lab ID: 2012B36-040

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/24/2020 3:18:43 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/24/2020 3:18:43 PM
Surr: DNOP	51.3	30.4-154		%Rec	1	12/24/2020 3:18:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2020 10:42:32 PM
Surr: BFB	93.8	75.3-105		%Rec	1	12/28/2020 10:42:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/28/2020 10:42:32 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2020 10:42:32 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2020 10:42:32 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/28/2020 10:42:32 PM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/28/2020 10:42:32 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 8:51:04 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-41 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:50:00 PM

Lab ID: 2012B36-041

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/24/2020 3:42:19 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/24/2020 3:42:19 PM
Surr: DNOP	49.6	30.4-154		%Rec	1	12/24/2020 3:42:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2020 11:06:13 PM
Surr: BFB	92.9	75.3-105		%Rec	1	12/28/2020 11:06:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/28/2020 11:06:13 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2020 11:06:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2020 11:06:13 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/28/2020 11:06:13 PM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/28/2020 11:06:13 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	59		mg/Kg	20	12/29/2020 9:28:18 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-42 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 12:55:00 PM

Lab ID: 2012B36-042

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/24/2020 4:05:59 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/24/2020 4:05:59 PM
Surr: DNOP	41.0	30.4-154		%Rec	1	12/24/2020 4:05:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/28/2020 11:29:36 PM
Surr: BFB	94.9	75.3-105		%Rec	1	12/28/2020 11:29:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/28/2020 11:29:36 PM
Toluene	ND	0.047		mg/Kg	1	12/28/2020 11:29:36 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/28/2020 11:29:36 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/28/2020 11:29:36 PM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/28/2020 11:29:36 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 10:05:33 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-43 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:00:00 PM

Lab ID: 2012B36-043

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/24/2020 4:29:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 4:29:35 PM
Surr: DNOP	44.5	30.4-154		%Rec	1	12/24/2020 4:29:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/28/2020 11:53:05 PM
Surr: BFB	94.1	75.3-105		%Rec	1	12/28/2020 11:53:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/28/2020 11:53:05 PM
Toluene	ND	0.048		mg/Kg	1	12/28/2020 11:53:05 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/28/2020 11:53:05 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/28/2020 11:53:05 PM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/28/2020 11:53:05 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/29/2020 11:07:35 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-44 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:05:00 PM

Lab ID: 2012B36-044

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/24/2020 4:53:01 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/24/2020 4:53:01 PM
Surr: DNOP	40.8	30.4-154		%Rec	1	12/24/2020 4:53:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 1:03:34 AM
Surr: BFB	94.9	75.3-105		%Rec	1	12/29/2020 1:03:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 1:03:34 AM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 1:03:34 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 1:03:34 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 1:03:34 AM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 1:03:34 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 11:20:00 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-45 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:10:00 PM

Lab ID: 2012B36-045

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 5:16:19 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 5:16:19 PM
Surr: DNOP	32.7	30.4-154		%Rec	1	12/24/2020 5:16:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/29/2020 1:26:59 AM
Surr: BFB	94.2	75.3-105		%Rec	1	12/29/2020 1:26:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/29/2020 1:26:59 AM
Toluene	ND	0.050		mg/Kg	1	12/29/2020 1:26:59 AM
Ethylbenzene	ND	0.050		mg/Kg	1	12/29/2020 1:26:59 AM
Xylenes, Total	ND	0.10		mg/Kg	1	12/29/2020 1:26:59 AM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/29/2020 1:26:59 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 11:32:24 PM

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

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-46 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:15:00 PM

Lab ID: 2012B36-046

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/24/2020 5:39:32 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 5:39:32 PM
Surr: DNOP	41.4	30.4-154		%Rec	1	12/24/2020 5:39:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 1:50:21 AM
Surr: BFB	92.9	75.3-105		%Rec	1	12/29/2020 1:50:21 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 1:50:21 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 1:50:21 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 1:50:21 AM
Xylenes, Total	ND	0.097		mg/Kg	1	12/29/2020 1:50:21 AM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/29/2020 1:50:21 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	59		mg/Kg	20	12/29/2020 11:44:49 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 Quantitative Limit	RL	Reporting Limit
		S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-47 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:20:00 PM

Lab ID: 2012B36-047

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 6:02:42 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/24/2020 6:02:42 PM
Surr: DNOP	33.7	30.4-154		%Rec	1	12/24/2020 6:02:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 2:13:45 AM
Surr: BFB	91.6	75.3-105		%Rec	1	12/29/2020 2:13:45 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 2:13:45 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 2:13:45 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 2:13:45 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2020 2:13:45 AM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/29/2020 2:13:45 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/29/2020 11:57:15 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-48 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:25:00 PM

Lab ID: 2012B36-048

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/24/2020 6:25:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/24/2020 6:25:50 PM
Surr: DNOP	30.5	30.4-154		%Rec	1	12/24/2020 6:25:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 2:37:05 AM
Surr: BFB	93.6	75.3-105		%Rec	1	12/29/2020 2:37:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 2:37:05 AM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 2:37:05 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 2:37:05 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 2:37:05 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/29/2020 2:37:05 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 12:09:39 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-01 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:30:00 PM

Lab ID: 2012B36-049

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/26/2020 12:16:14 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/26/2020 12:16:14 PM
Surr: DNOP	68.5	30.4-154		%Rec	1	12/26/2020 12:16:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2020 3:00:28 AM
Surr: BFB	91.6	75.3-105		%Rec	1	12/29/2020 3:00:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 3:00:28 AM
Toluene	ND	0.047		mg/Kg	1	12/29/2020 3:00:28 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2020 3:00:28 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2020 3:00:28 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/29/2020 3:00:28 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 12:22:03 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-02 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:35:00 PM

Lab ID: 2012B36-050

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/24/2020 7:12:13 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/24/2020 7:12:13 PM
Surr: DNOP	35.5	30.4-154		%Rec	1	12/24/2020 7:12:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2020 3:23:47 AM
Surr: BFB	92.1	75.3-105		%Rec	1	12/29/2020 3:23:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 3:23:47 AM
Toluene	ND	0.047		mg/Kg	1	12/29/2020 3:23:47 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2020 3:23:47 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2020 3:23:47 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/29/2020 3:23:47 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 12:34:28 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-03 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:40:00 PM

Lab ID: 2012B36-051

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 7:35:21 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/24/2020 7:35:21 PM
Surr: DNOP	39.7	30.4-154		%Rec	1	12/24/2020 7:35:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 3:47:04 AM
Surr: BFB	91.7	75.3-105		%Rec	1	12/29/2020 3:47:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 3:47:04 AM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 3:47:04 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 3:47:04 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 3:47:04 AM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/29/2020 3:47:04 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:11:41 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-04 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:45:00 PM

Lab ID: 2012B36-052

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/24/2020 7:58:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 7:58:35 PM
Surr: DNOP	36.8	30.4-154		%Rec	1	12/24/2020 7:58:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 4:10:18 AM
Surr: BFB	91.3	75.3-105		%Rec	1	12/29/2020 4:10:18 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 4:10:18 AM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 4:10:18 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 4:10:18 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 4:10:18 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/29/2020 4:10:18 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:24:06 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-05 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:50:00 PM

Lab ID: 2012B36-053

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/24/2020 8:21:45 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 8:21:45 PM
Surr: DNOP	37.3	30.4-154		%Rec	1	12/24/2020 8:21:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 4:33:35 AM
Surr: BFB	92.7	75.3-105		%Rec	1	12/29/2020 4:33:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 4:33:35 AM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 4:33:35 AM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 4:33:35 AM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 4:33:35 AM
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/29/2020 4:33:35 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:36:31 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-06 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 1:55:00 PM

Lab ID: 2012B36-054

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/24/2020 8:44:56 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/24/2020 8:44:56 PM
Surr: DNOP	36.3	30.4-154		%Rec	1	12/24/2020 8:44:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2020 10:17:43 AM
Surr: BFB	91.4	75.3-105		%Rec	1	12/29/2020 10:17:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 10:17:43 AM
Toluene	ND	0.047		mg/Kg	1	12/29/2020 10:17:43 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2020 10:17:43 AM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 10:17:43 AM
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/29/2020 10:17:43 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/30/2020 1:48:56 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-07 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:00:00 PM

Lab ID: 2012B36-055

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/24/2020 9:08:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2020 9:08:08 PM
Surr: DNOP	30.8	30.4-154		%Rec	1	12/24/2020 9:08:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 10:41:19 AM
Surr: BFB	97.4	75.3-105		%Rec	1	12/29/2020 10:41:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 10:41:19 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 10:41:19 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 10:41:19 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2020 10:41:19 AM
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	12/29/2020 10:41:19 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:01:20 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-08 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:05:00 PM

Lab ID: 2012B36-056

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/26/2020 12:39:50 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/26/2020 12:39:50 PM
Surr: DNOP	80.1	30.4-154		%Rec	1	12/26/2020 12:39:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 11:04:53 AM
Surr: BFB	97.1	75.3-105		%Rec	1	12/29/2020 11:04:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 11:04:53 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 11:04:53 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 11:04:53 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2020 11:04:53 AM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 11:04:53 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:13:44 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-09 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:10:00 PM

Lab ID: 2012B36-057

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/26/2020 1:03:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/26/2020 1:03:34 PM
Surr: DNOP	80.3	30.4-154		%Rec	1	12/26/2020 1:03:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 11:28:50 AM
Surr: BFB	97.0	75.3-105		%Rec	1	12/29/2020 11:28:50 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/29/2020 11:28:50 AM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 11:28:50 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 11:28:50 AM
Xylenes, Total	ND	0.099		mg/Kg	1	12/29/2020 11:28:50 AM
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	12/29/2020 11:28:50 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:26:09 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-10 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:15:00 PM

Lab ID: 2012B36-058

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/28/2020 2:07:43 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2020 2:07:43 PM
Surr: DNOP	82.8	30.4-154		%Rec	1	12/28/2020 2:07:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/29/2020 11:52:25 AM
Surr: BFB	97.1	75.3-105		%Rec	1	12/29/2020 11:52:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/29/2020 11:52:25 AM
Toluene	ND	0.046		mg/Kg	1	12/29/2020 11:52:25 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/29/2020 11:52:25 AM
Xylenes, Total	ND	0.093		mg/Kg	1	12/29/2020 11:52:25 AM
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/29/2020 11:52:25 AM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/30/2020 2:38:34 AM

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

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

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-11 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:20:00 PM

Lab ID: 2012B36-059

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2020 3:19:29 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2020 3:19:29 PM
Surr: DNOP	49.2	30.4-154		%Rec	1	12/28/2020 3:19:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 1:03:15 PM
Surr: BFB	94.1	75.3-105		%Rec	1	12/29/2020 1:03:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 1:03:15 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 1:03:15 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 1:03:15 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 1:03:15 PM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/29/2020 1:03:15 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:50:59 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-12 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:25:00 PM

Lab ID: 2012B36-060

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/28/2020 3:43:29 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/28/2020 3:43:29 PM
Surr: DNOP	47.6	30.4-154		%Rec	1	12/28/2020 3:43:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/29/2020 2:14:20 PM
Surr: BFB	96.7	75.3-105		%Rec	1	12/29/2020 2:14:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/29/2020 2:14:20 PM
Toluene	ND	0.050		mg/Kg	1	12/29/2020 2:14:20 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/29/2020 2:14:20 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/29/2020 2:14:20 PM
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/29/2020 2:14:20 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 3:03:23 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-13 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:30:00 PM

Lab ID: 2012B36-061

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 4:07:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 4:07:24 PM
Surr: DNOP	55.3	30.4-154		%Rec	1	12/28/2020 4:07:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 2:38:04 PM
Surr: BFB	96.8	75.3-105		%Rec	1	12/29/2020 2:38:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 2:38:04 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 2:38:04 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 2:38:04 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 2:38:04 PM
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/29/2020 2:38:04 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 12:11:44 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-14 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:35:00 PM

Lab ID: 2012B36-062

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 4:31:18 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 4:31:18 PM
Surr: DNOP	64.7	30.4-154		%Rec	1	12/28/2020 4:31:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 3:01:49 PM
Surr: BFB	97.5	75.3-105		%Rec	1	12/29/2020 3:01:49 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 3:01:49 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 3:01:49 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 3:01:49 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 3:01:49 PM
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	12/29/2020 3:01:49 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 12:24:08 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-15 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:40:00 PM

Lab ID: 2012B36-063

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 4:55:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 4:55:10 PM
Surr: DNOP	50.7	30.4-154		%Rec	1	12/28/2020 4:55:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2020 4:36:39 PM
Surr: BFB	96.4	75.3-105		%Rec	1	12/29/2020 4:36:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 4:36:39 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2020 4:36:39 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2020 4:36:39 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 4:36:39 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 4:36:39 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:01:21 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-16 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:45:00 PM

Lab ID: 2012B36-064

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2020 5:18:56 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 5:18:56 PM
Surr: DNOP	52.6	30.4-154		%Rec	1	12/28/2020 5:18:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 5:00:13 PM
Surr: BFB	95.4	75.3-105		%Rec	1	12/29/2020 5:00:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 5:00:13 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 5:00:13 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 5:00:13 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 5:00:13 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 5:00:13 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:13:46 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-17 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:50:00 PM

Lab ID: 2012B36-065

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 5:42:41 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 5:42:41 PM
Surr: DNOP	56.5	30.4-154		%Rec	1	12/28/2020 5:42:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 5:23:47 PM
Surr: BFB	94.9	75.3-105		%Rec	1	12/29/2020 5:23:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 5:23:47 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 5:23:47 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 5:23:47 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/29/2020 5:23:47 PM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/29/2020 5:23:47 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/30/2020 1:26:11 AM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-18 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 2:55:00 PM

Lab ID: 2012B36-066

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/28/2020 6:06:23 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/28/2020 6:06:23 PM
Surr: DNOP	55.3	30.4-154		%Rec	1	12/28/2020 6:06:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 5:47:22 PM
Surr: BFB	93.9	75.3-105		%Rec	1	12/29/2020 5:47:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 5:47:22 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 5:47:22 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 5:47:22 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 5:47:22 PM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/29/2020 5:47:22 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:38:35 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-19 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:00:00 PM

Lab ID: 2012B36-067

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/28/2020 6:30:01 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/28/2020 6:30:01 PM
Surr: DNOP	45.5	30.4-154		%Rec	1	12/28/2020 6:30:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/29/2020 6:11:02 PM
Surr: BFB	94.8	75.3-105		%Rec	1	12/29/2020 6:11:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/29/2020 6:11:02 PM
Toluene	ND	0.050		mg/Kg	1	12/29/2020 6:11:02 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/29/2020 6:11:02 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/29/2020 6:11:02 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 6:11:02 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 1:51:00 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-20 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:05:00 PM

Lab ID: 2012B36-068

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/28/2020 6:53:39 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/28/2020 6:53:39 PM
Surr: DNOP	37.9	30.4-154		%Rec	1	12/28/2020 6:53:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2020 6:34:36 PM
Surr: BFB	93.4	75.3-105		%Rec	1	12/29/2020 6:34:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 6:34:36 PM
Toluene	ND	0.049		mg/Kg	1	12/29/2020 6:34:36 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2020 6:34:36 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/29/2020 6:34:36 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 6:34:36 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:03:24 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-21 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:10:00 PM

Lab ID: 2012B36-069

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/28/2020 7:17:14 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2020 7:17:14 PM
Surr: DNOP	46.4	30.4-154		%Rec	1	12/28/2020 7:17:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 6:58:28 PM
Surr: BFB	92.8	75.3-105		%Rec	1	12/29/2020 6:58:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 6:58:28 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 6:58:28 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 6:58:28 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 6:58:28 PM
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/29/2020 6:58:28 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:15:48 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-22 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:15:00 PM

Lab ID: 2012B36-070

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/28/2020 7:40:53 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/28/2020 7:40:53 PM
Surr: DNOP	47.3	30.4-154		%Rec	1	12/28/2020 7:40:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 7:22:00 PM
Surr: BFB	95.8	75.3-105		%Rec	1	12/29/2020 7:22:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 7:22:00 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 7:22:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 7:22:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2020 7:22:00 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 7:22:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	12/30/2020 2:28:12 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-23 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:20:00 PM

Lab ID: 2012B36-071

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/28/2020 8:04:32 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/28/2020 8:04:32 PM
Surr: DNOP	35.9	30.4-154		%Rec	1	12/28/2020 8:04:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2020 7:46:02 PM
Surr: BFB	94.1	75.3-105		%Rec	1	12/29/2020 7:46:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 7:46:02 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2020 7:46:02 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2020 7:46:02 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 7:46:02 PM
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	12/29/2020 7:46:02 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	59		mg/Kg	20	12/30/2020 2:40:37 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2012B36

Date Reported: 12/31/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: WS20-24 0-1

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 12/22/2020 3:25:00 PM

Lab ID: 2012B36-072

Matrix: SOIL

Received Date: 12/23/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/28/2020 8:28:09 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/28/2020 8:28:09 PM
Surr: DNOP	33.4	30.4-154		%Rec	1	12/28/2020 8:28:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2020 8:09:36 PM
Surr: BFB	95.4	75.3-105		%Rec	1	12/29/2020 8:09:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/29/2020 8:09:36 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2020 8:09:36 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2020 8:09:36 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2020 8:09:36 PM
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/29/2020 8:09:36 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	61		mg/Kg	20	12/30/2020 2:53:02 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 Quantitative Limit	RL Reporting Limit
	S	% Recovery outside of range due to dilution or matrix	

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: MB-57244	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 57244	RunNo: 74295								
Prep Date: 12/28/2020	Analysis Date: 12/29/2020	SeqNo: 2622615 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-57244	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 57244	RunNo: 74295								
Prep Date: 12/28/2020	Analysis Date: 12/29/2020	SeqNo: 2622616 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Sample ID: MB-57258	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 57258	RunNo: 74295								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622645 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-57258	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 57258	RunNo: 74295								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622646 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Sample ID: MB-57266	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 57266	RunNo: 74295								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622677 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-57266	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 57266	RunNo: 74295								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622678 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.9	90	110			

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: MB-57268	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 57268	RunNo: 74298								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622957	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-57268	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 57268	RunNo: 74298								
Prep Date: 12/29/2020	Analysis Date: 12/29/2020	SeqNo: 2622958	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.6	90	110			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: MB-57192	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 57192	RunNo: 74243								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2620763 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	12		10.00		121	30.4	154			

Sample ID: LCS-57192	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 57192	RunNo: 74243								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2620764 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	68.9	141			
Surr: DNOP	5.1		5.000		101	30.4	154			

Sample ID: 2012B36-038AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS20-38 0-1	Batch ID: 57192	RunNo: 74243								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2620766 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.6	48.08	0	117	15	184			
Surr: DNOP	4.6		4.808		96.3	30.4	154			

Sample ID: 2012B36-038AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS20-38 0-1	Batch ID: 57192	RunNo: 74243								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2620767 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.6	47.98	0	120	15	184	2.70	23.9	
Surr: DNOP	3.6		4.798		74.4	30.4	154	0	0	

Sample ID: MB-57179	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 57179	RunNo: 74255								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2621238 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	9.9		10.00		98.8	30.4	154			

Qualifiers:

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

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QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **2012B36**

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: LCS-57179	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 57179	RunNo: 74255								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2621239 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	123	68.9	141			
Surr: DNOP	6.7		5.000		134	30.4	154			

Sample ID: 2012B44-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BatchQC	Batch ID: 57179	RunNo: 74255								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2621240 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.3	46.51	0	89.1	15	184			
Surr: DNOP	4.2		4.651		89.9	30.4	154			

Sample ID: 2012B44-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BatchQC	Batch ID: 57179	RunNo: 74255								
Prep Date: 12/23/2020	Analysis Date: 12/24/2020	SeqNo: 2621241 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.6	47.94	0	89.0	15	184	2.90	23.9	
Surr: DNOP	4.4		4.794		92.4	30.4	154	0	0	

Sample ID: MB-57210	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 57210	RunNo: 74268								
Prep Date: 12/26/2020	Analysis Date: 12/28/2020	SeqNo: 2621783 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		106	30.4	154			

Sample ID: LCS-57210	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 57210	RunNo: 74268								
Prep Date: 12/26/2020	Analysis Date: 12/28/2020	SeqNo: 2621784 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	68.9	141			
Surr: DNOP	5.6		5.000		112	30.4	154			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: 2012B36-058AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: WS20-10 0-1	Batch ID: 57210	RunNo: 74268								
Prep Date: 12/26/2020	Analysis Date: 12/28/2020	SeqNo: 2621786 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.7	48.59	0	94.2	15	184			
Surr: DNOP	3.6		4.859		74.6	30.4	154			

Sample ID: 2012B36-058AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: WS20-10 0-1	Batch ID: 57210	RunNo: 74268								
Prep Date: 12/26/2020	Analysis Date: 12/28/2020	SeqNo: 2621787 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.5	47.66	0	89.5	15	184	7.13	23.9	
Surr: DNOP	2.1		4.766		43.0	30.4	154	0	0	

Sample ID: MB-57190	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 57190	RunNo: 74268								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2621810 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	5.2		10.00		52.4	30.4	154			

Sample ID: LCS-57190	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 57190	RunNo: 74268								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2621811 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	70	10	50.00	0	140	68.9	141			
Surr: DNOP	3.3		5.000		65.5	30.4	154			

Sample ID: 2012B36-018AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS20-18 0-1	Batch ID: 57190	RunNo: 74268								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2621814 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.7	48.73	0	100	15	184			
Surr: DNOP	1.7		4.873		35.5	30.4	154			

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: 2012B36-018AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: BS20-18 0-1		Batch ID: 57190		RunNo: 74268						
Prep Date: 12/23/2020		Analysis Date: 12/29/2020		SeqNo: 2621815		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	9.4	47.08	0	127	15	184	19.9	23.9	
Surr: DNOP	2.4		4.708		50.4	30.4	154	0	0	

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: 2012a19-003ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BatchQC	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/24/2020	SeqNo: 2620885 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		981.4		100	75.3	105			

Sample ID: 2012a19-003amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BatchQC	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/24/2020	SeqNo: 2620886 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		951.5		100	75.3	105	0	0	

Sample ID: 2012b44-001ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BatchQC	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620917 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.67	0	93.7	61.3	114			
Surr: BFB	950		947.0		100	75.3	105			

Sample ID: 2012b44-001amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BatchQC	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620918 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.70	0	89.2	61.3	114	0.600	20	
Surr: BFB	970		988.1		98.2	75.3	105	0	0	

Sample ID: lcs-57159	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/24/2020	SeqNo: 2620922 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		99.6	75.3	105			

Sample ID: lcs-57178	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620923 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	90.2	72.5	106			
Surr: BFB	980		1000		97.9	75.3	105			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of 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#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: mb-57159	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/25/2020	SeqNo: 2620925 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.1	75.3	105			

Sample ID: mb-57178	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620926 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	880		1000		87.8	75.3	105			

Sample ID: mb-57181	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621166 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	960		1000		96.5	75.3	105			

Sample ID: lcs-57181	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621167 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	99.4	72.5	106			
Surr: BFB	1100		1000		109	75.3	105			S

Sample ID: 2012b36-018ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-18 0-1	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621169 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.53	0	86.8	61.3	114			
Surr: BFB	1000		981.4		103	75.3	105			

Sample ID: 2012b36-018amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-18 0-1	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621170 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.74	0	87.3	61.3	114	2.73	20	

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: 2012b36-018amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-18 0-1	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621170 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	980		949.7		103	75.3	105	0	0	

Sample ID: mb-57189	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621686 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	960		1000		95.8	75.3	105			

Sample ID: lcs-57189	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621687 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.3	72.5	106			
Surr: BFB	1100		1000		105	75.3	105			S

Sample ID: 2012b36-038ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-38 0-1	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621689 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.8	23.79	0	83.8	61.3	114			
Surr: BFB	1000		951.5		105	75.3	105			S

Sample ID: 2012b36-038amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-38 0-1	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621690 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.8	24.18	0	81.0	61.3	114	1.82	20	
Surr: BFB	1000		967.1		108	75.3	105	0	0	S

Sample ID: mb-57199	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622720 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: mb-57199	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622720 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.2	75.3	105			

Sample ID: lcs-57199	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622721 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	72.5	106			
Surr: BFB	1100		1000		108	75.3	105			S

Sample ID: 2012b36-058ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS20-10 0-1	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622723 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.7	23.67	0	82.9	61.3	114			
Surr: BFB	1000		947.0		110	75.3	105			S

Sample ID: 2012b36-058amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: WS20-10 0-1	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622724 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.7	23.32	0	80.7	61.3	114	4.14	20	
Surr: BFB	1000		932.8		108	75.3	105	0	0	S

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: 2012a67-001ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BatchQC	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/24/2020	SeqNo: 2620951 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		0.9470		104	80	120			

Sample ID: 2012a67-001amsd		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: BatchQC		Batch ID: 57159		RunNo: 74246						
Prep Date: 12/22/2020		Analysis Date: 12/24/2020		SeqNo: 2620952		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		0.9747		108	80	120	0	0	

Sample ID: 2012b36-001ams	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: BS20-01 0-1	Batch ID: 57178		RunNo: 74246							
Prep Date: 12/23/2020	Analysis Date: 12/25/2020		SeqNo: 2620963		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	0.9990	0	99.1	76.3	120			
Toluene	1.1	0.050	0.9990	0.007813	105	78.5	120			
Ethylbenzene	1.1	0.050	0.9990	0	107	78.1	124			
Xylenes, Total	3.3	0.10	2.997	0.01351	109	79.3	125			
Surr: 4-Bromofluorobenzene	1.1		0.9990		110	80	120			

Sample ID: 2012b36-001amsd		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: BS20-01 0-1		Batch ID: 57178		RunNo: 74246						
Prep Date: 12/23/2020		Analysis Date: 12/25/2020		SeqNo: 2620964		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.023	0.9242	0	101	76.3	120	6.11	20	
Toluene	0.98	0.046	0.9242	0.007813	105	78.5	120	6.83	20	
Ethylbenzene	1.0	0.046	0.9242	0	108	78.1	124	7.22	20	
Xylenes, Total	3.0	0.092	2.773	0.01351	108	79.3	125	8.06	20	
Surr: 4-Bromofluorobenzene	0.98		0.9242		106	80	120	0	0	

Sample ID: LCS-57159	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/24/2020	SeqNo: 2620985 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

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 Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix	

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: LCS-57178	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620986	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.6	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.1	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID: mb-57159	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 57159	RunNo: 74246								
Prep Date: 12/22/2020	Analysis Date: 12/25/2020	SeqNo: 2620988	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID: mb-57178	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 57178	RunNo: 74246								
Prep Date: 12/23/2020	Analysis Date: 12/25/2020	SeqNo: 2620989	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	1.1		1.000		106	80	120			

Sample ID: mb-57181	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621195	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	1.1		1.000		112	80	120			

Sample ID: LCS-57181	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621196	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level,
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of 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#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: LCS-57181	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621196 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.6	80	120			
Toluene	0.99	0.050	1.000	0	99.3	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		117	80	120			

Sample ID: 2012b36-019ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-19 0-1	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621199 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9718	0	87.9	76.3	120			
Toluene	0.93	0.049	0.9718	0.008325	94.9	78.5	120			
Ethylbenzene	0.95	0.049	0.9718	0	98.1	78.1	124			
Xylenes, Total	2.9	0.097	2.915	0	99.6	79.3	125			
Surr: 4-Bromofluorobenzene	1.1		0.9718		111	80	120			

Sample ID: 2012b36-019amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-19 0-1	Batch ID: 57181	RunNo: 74253								
Prep Date: 12/23/2020	Analysis Date: 12/26/2020	SeqNo: 2621200 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	0.9852	0	86.8	76.3	120	0.156	20	
Toluene	0.93	0.049	0.9852	0.008325	93.2	78.5	120	0.401	20	
Ethylbenzene	0.95	0.049	0.9852	0	96.9	78.1	124	0.109	20	
Xylenes, Total	2.9	0.099	2.956	0	99.2	79.3	125	0.981	20	
Surr: 4-Bromofluorobenzene	1.1		0.9852		110	80	120	0	0	

Sample ID: mb-57189	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621726 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	1.1		1.000		111	80	120			

Qualifiers:

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

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.

Project: Rodney Robinson Federal 101H Lease Rd

Sample ID: LCS-57189	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621727 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.0	80	120			
Toluene	0.94	0.050	1.000	0	94.0	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.0	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID: 2012b36-039ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-39 0-1	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621730 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.024	0.9737	0	83.9	76.3	120			
Toluene	0.91	0.049	0.9737	0.008880	92.7	78.5	120			
Ethylbenzene	0.94	0.049	0.9737	0	96.3	78.1	124			
Xylenes, Total	2.9	0.097	2.921	0	98.5	79.3	125			
Surr: 4-Bromofluorobenzene	1.1		0.9737		114	80	120			

Sample ID: 2012b36-039amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-39 0-1	Batch ID: 57189	RunNo: 74259								
Prep Date: 12/23/2020	Analysis Date: 12/28/2020	SeqNo: 2621731 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	0.9881	0	85.8	76.3	120	3.71	20	
Toluene	0.93	0.049	0.9881	0.008880	93.2	78.5	120	1.96	20	
Ethylbenzene	0.95	0.049	0.9881	0	96.5	78.1	124	1.60	20	
Xylenes, Total	2.9	0.099	2.964	0	98.8	79.3	125	1.74	20	
Surr: 4-Bromofluorobenzene	1.1		0.9881		111	80	120	0	0	

Sample ID: mb-57199	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622754 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	1.1		1.000		112	80	120			

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 Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix	

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

WO#: 2012B36

31-Dec-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Rd

Sample ID: LCS-57199	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622755 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.2	80	120			
Toluene	0.93	0.050	1.000	0	93.3	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.0	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID: 2012b36-059ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: WS20-11 0-1	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622758 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	0.9804	0	82.4	76.3	120			
Toluene	0.93	0.049	0.9804	0.009838	93.9	78.5	120			
Ethylbenzene	0.97	0.049	0.9804	0	99.2	78.1	124			
Xylenes, Total	3.0	0.098	2.941	0.01452	100	79.3	125			
Surr: 4-Bromofluorobenzene	1.1		0.9804		115	80	120			

Sample ID: 2012b36-059amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: WS20-11 0-1	Batch ID: 57199	RunNo: 74297								
Prep Date: 12/23/2020	Analysis Date: 12/29/2020	SeqNo: 2622759 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9921	0	89.1	76.3	120	9.04	20	
Toluene	0.94	0.050	0.9921	0.009838	93.7	78.5	120	0.888	20	
Ethylbenzene	0.94	0.050	0.9921	0	95.1	78.1	124	2.99	20	
Xylenes, Total	2.9	0.099	2.976	0.01452	96.1	79.3	125	3.30	20	
Surr: 4-Bromofluorobenzene	1.1		0.9921		113	80	120	0	0	

Qualifiers:

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

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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 Lt

Work Order Number: 2012B36

RcptNo: 1

Received By: Isaiah Ortiz 12/23/2020 7:50:00 AM

Completed By: Isaiah Ortiz 12/23/2020 8:10:12 AM

Reviewed By: EM 12/23/20

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? Yes ☒ No ☐ # of preserved bottles checked for pH: Adjusted? (<2 or >12 unless noted)
- (Note discrepancies on chain of custody)
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? Yes ☒ No ☐ Checked by: SGH 12/23/20
(If no, notify customer for authorization.)

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	2.8	Good	Yes			
2	3.2	Good	Yes			

Chain-of-Custody Record

Client: Vertex

Turn-Around Time: 5 Day

☒ Standard ☐ Rush

Project Name: Prodney Robinson Federal

101H Lease Rd

Mailing Address:

Project #: 20E-00239

Project Manager: Natalie Gordon

Sampler: MJP/JSR

On Ice: ☒ Yes ☐ No

of Coolers: 2 28' ± 0

Cooler Temp (including CF): 3.7 ± 0 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
1/22	9:30	Soil	BS20-01	0-1	ice	2012B36
	9:35		BS20-02	0-1		001
	9:40		BS20-03	0-1		002
	9:45		BS20-04	0-1		003
	9:50		BS20-05	0-1		004
	9:55		BS20-06	0-1		005
	10:00		BS20-07	0-1		006
	10:05		BS20-08	0-1		007
	10:10		BS20-09	0-1		008
	10:15		BS20-10	0-1		009
	10:20		BS20-11	0-1		010
	10:25		BS20-12	0-1		011
						012

Relinquished by: [Signature] Date: 1/22/20 Time: 1300

Relinquished by: [Signature] Date: 1/23/20 Time: 0750

Analysis Request

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)	
MTBE / TMB's (8021)	✓	BTEX	✓														

Remarks: CC: Natalie G

Notador

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.

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: Rodney Robinson Federal
101H Lease Rd

Project #: 20E-00239

Project Manager: Natalie Gordon

Sampler: MS P/JR

On Ice: ☒ Yes ☐ No

of Coolers: 2 2.8' ± 0

Cooler Temp (including CF): 3.7 ± 0 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
12/22	2:30	SC.1	WS20-13	0-1	ice	20170336
	2:35		WS20-14	0-1		061
	2:40		WS20-15	0-1		062
	2:45		WS20-16	0-1		063
	2:50		WS20-17	0-1		064
	2:55		WS20-18	0-1		065
	3:00		WS20-19	0-1		066
	3:05		WS20-20	0-1		067
	3:10		WS20-21	0-1		068
	3:15		WS20-22	0-1		069
	3:20		WS20-23	0-1		70
	3:25		WS20-24	0-1		71
						72

Relinquished by: [Signature] Date: 1/20/20 Time: 1300

Relinquished by: [Signature] Date: 1/20/20 Time: 1900

Received by: [Signature] Date: 1/20/20 Time: 1300

Received by: [Signature] Date: 1/20/20 Time: 0750

Analysis Request

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

(C) F, Br, NO₃, NO₂, PO₄, SO₄

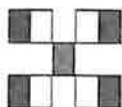
8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Remarks: CC: Natalie

Matador



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request



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

February 06, 2020

Natalie Gordon
Vertex Resource Group Ltd.
213 S. Mesa St
Carlsbad, NM 88220
TEL:
FAX

RE: Rodney Robinson Federal 101H Lease Road

OrderNo.: 2001C16

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/31/2020 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2001C16

Date Reported: 2/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH20-01 0'

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 1/29/2020 11:00:00 AM

Lab ID: 2001C16-001

Matrix: SOIL

Received Date: 1/31/2020 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	59	8.6		mg/Kg	1	2/3/2020 9:33:04 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/3/2020 9:33:04 AM
Surr: DNOP	117	55.1-146		%Rec	1	2/3/2020 9:33:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/4/2020 7:41:46 PM
Surr: BFB	97.0	66.6-105		%Rec	1	2/4/2020 7:41:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/4/2020 7:41:46 PM
Toluene	ND	0.049		mg/Kg	1	2/4/2020 7:41:46 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/4/2020 7:41:46 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/4/2020 7:41:46 PM
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	2/4/2020 7:41:46 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	20000	600		mg/Kg	200	2/5/2020 5:44:07 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2001C16

Date Reported: 2/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH20-01 2'

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 1/29/2020 11:15:00 AM

Lab ID: 2001C16-002

Matrix: SOIL

Received Date: 1/31/2020 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/3/2020 9:42:15 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/3/2020 9:42:15 AM
Surr: DNOP	87.4	55.1-146		%Rec	1	2/3/2020 9:42:15 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/4/2020 8:51:28 PM
Surr: BFB	77.0	66.6-105		%Rec	1	2/4/2020 8:51:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/4/2020 8:51:28 PM
Toluene	ND	0.048		mg/Kg	1	2/4/2020 8:51:28 PM
Ethylbenzene	ND	0.048		mg/Kg	1	2/4/2020 8:51:28 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/4/2020 8:51:28 PM
Surr: 4-Bromofluorobenzene	86.8	80-120		%Rec	1	2/4/2020 8:51:28 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	470	61		mg/Kg	20	2/4/2020 4:23:32 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2001C16

Date Reported: 2/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH20-05 0'

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 1/29/2020 12:00:00 PM

Lab ID: 2001C16-003

Matrix: SOIL

Received Date: 1/31/2020 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	17	9.6		mg/Kg	1	2/3/2020 9:51:28 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/3/2020 9:51:28 AM
Surr: DNOP	97.1	55.1-146		%Rec	1	2/3/2020 9:51:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/4/2020 9:14:40 PM
Surr: BFB	81.2	66.6-105		%Rec	1	2/4/2020 9:14:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	2/4/2020 9:14:40 PM
Toluene	ND	0.046		mg/Kg	1	2/4/2020 9:14:40 PM
Ethylbenzene	ND	0.046		mg/Kg	1	2/4/2020 9:14:40 PM
Xylenes, Total	ND	0.092		mg/Kg	1	2/4/2020 9:14:40 PM
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	2/4/2020 9:14:40 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	340	60		mg/Kg	20	2/4/2020 4:35:53 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2001C16

Date Reported: 2/6/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BH20-07 0.5'

Project: Rodney Robinson Federal 101H Lease R

Collection Date: 1/29/2020 12:40:00 PM

Lab ID: 2001C16-004

Matrix: SOIL

Received Date: 1/31/2020 8:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/3/2020 10:00:39 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/3/2020 10:00:39 AM
Surr: DNOP	125	55.1-146		%Rec	1	2/3/2020 10:00:39 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/4/2020 9:37:47 PM
Surr: BFB	77.0	66.6-105		%Rec	1	2/4/2020 9:37:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	2/4/2020 9:37:47 PM
Toluene	ND	0.047		mg/Kg	1	2/4/2020 9:37:47 PM
Ethylbenzene	ND	0.047		mg/Kg	1	2/4/2020 9:37:47 PM
Xylenes, Total	ND	0.094		mg/Kg	1	2/4/2020 9:37:47 PM
Surr: 4-Bromofluorobenzene	87.7	80-120		%Rec	1	2/4/2020 9:37:47 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	650	60		mg/Kg	20	2/4/2020 4:48:13 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2001C16

06-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Road

Sample ID: MB-50242	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 50242	RunNo: 66289								
Prep Date: 2/4/2020	Analysis Date: 2/4/2020	SeqNo: 2277916 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-50242	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 50242	RunNo: 66289								
Prep Date: 2/4/2020	Analysis Date: 2/4/2020	SeqNo: 2277917 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

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

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

WO#: 2001C16

06-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Road

Sample ID: MB-50189	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 50189	RunNo: 66246								
Prep Date: 1/31/2020	Analysis Date: 2/3/2020	SeqNo: 2275621 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	9.4		10.00		93.6	55.1	146			

Sample ID: LCS-50189	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 50189	RunNo: 66246								
Prep Date: 1/31/2020	Analysis Date: 2/3/2020	SeqNo: 2275622 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	4.5		5.000		89.9	55.1	146			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2001C16

06-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Road

Sample ID: mb-50185	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277391 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	790		1000		79.4	66.6	105			

Sample ID: lcs-50185	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277393 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	89.9	80	120			
Surr: BFB	910		1000		91.2	66.6	105			

Sample ID: mb-50219	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 50219	RunNo: 66278								
Prep Date: 2/3/2020	Analysis Date: 2/5/2020	SeqNo: 2277403 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	750		1000		75.4	66.6	105			

Sample ID: lcs-50219	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 50219	RunNo: 66278								
Prep Date: 2/3/2020	Analysis Date: 2/4/2020	SeqNo: 2277404 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	850		1000		85.5	66.6	105			

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of 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#: 2001C16

06-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Road

Sample ID: mb-50185	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277424 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	0.87		1.000		86.5	80	120			

Sample ID: lcs-50185	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277425 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.3	80	120			
Toluene	0.93	0.050	1.000	0	93.3	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.1	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.0	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.7	80	120			

Sample ID: 2001C16-001AMS	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH20-01 0'	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277427 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.024	0.9625	0.01701	85.9	78.5	119			
Toluene	0.88	0.048	0.9625	0.02323	89.4	75.7	123			
Ethylbenzene	0.90	0.048	0.9625	0.01983	91.5	74.3	126			
Xylenes, Total	2.7	0.096	2.887	0.06122	92.1	72.9	130			
Surr: 4-Bromofluorobenzene	0.91		0.9625		94.8	80	120			

Sample ID: 2001C16-001AMSD	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BH20-01 0'	Batch ID: 50185	RunNo: 66278								
Prep Date: 1/31/2020	Analysis Date: 2/4/2020	SeqNo: 2277428 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.023	0.9346	0.01701	83.3	78.5	119	5.91	20	
Toluene	0.84	0.047	0.9346	0.02323	86.9	75.7	123	5.62	20	
Ethylbenzene	0.84	0.047	0.9346	0.01983	88.3	74.3	126	6.33	20	
Xylenes, Total	2.6	0.093	2.804	0.06122	89.6	72.9	130	5.52	20	
Surr: 4-Bromofluorobenzene	0.83		0.9346		89.3	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of 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#: 2001C16

06-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson Federal 101H Lease Road

Sample ID: mb-50219	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 50219	RunNo: 66278								
Prep Date: 2/3/2020	Analysis Date: 2/5/2020	SeqNo: 2277435 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.85		1.000		85.3	80	120			

Sample ID: lcs-50219	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 50219	RunNo: 66278								
Prep Date: 2/3/2020	Analysis Date: 2/4/2020	SeqNo: 2277436 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	80	120			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		



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

Sample Log-In Check List

Client Name: VERTEX CARLSBAD

Work Order Number: 2001C16

RcptNo: 1

Received By: Isaiah Ortiz 1/31/2020 8:50:00 AM

Completed By: Isaiah Ortiz 1/31/2020 9:24:19 AM

Reviewed By: SP 1/31/20

I-0x

I-0x

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: (2 or 12 unless noted)
Adjusted?
Checked by: 46 1/31/20

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Not Present			



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

February 13, 2020

Dennis Williams
Vertex Resource Group Ltd.
213 S. Mesa St
Carlsbad, NM 88220
TEL:
FAX

RE: Rodney Robinson

OrderNo.: 2002341

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 4 sample(s) on 2/8/2020 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2002341

Date Reported: 2/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-01 0.5'

Project: Rodney Robinson

Collection Date: 2/6/2020 10:00:00 AM

Lab ID: 2002341-001

Matrix: SOIL

Received Date: 2/8/2020 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/12/2020 9:52:12 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/12/2020 9:52:12 AM
Surr: DNOP	113	55.1-146		%Rec	1	2/12/2020 9:52:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/11/2020 9:20:08 PM
Surr: BFB	77.0	66.6-105		%Rec	1	2/11/2020 9:20:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/11/2020 9:20:08 PM
Toluene	ND	0.049		mg/Kg	1	2/11/2020 9:20:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/11/2020 9:20:08 PM
Xylenes, Total	ND	0.097		mg/Kg	1	2/11/2020 9:20:08 PM
Surr: 4-Bromofluorobenzene	86.2	80-120		%Rec	1	2/11/2020 9:20:08 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	320	60		mg/Kg	20	2/11/2020 3:30:59 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 1 of 8

Analytical Report

Lab Order 2002341

Date Reported: 2/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-02 0.5'

Project: Rodney Robinson

Collection Date: 2/6/2020 10:45:00 AM

Lab ID: 2002341-002

Matrix: SOIL

Received Date: 2/8/2020 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	2/12/2020 10:19:42 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/12/2020 10:19:42 AM
Surr: DNOP	99.6	55.1-146		%Rec	1	2/12/2020 10:19:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/11/2020 10:29:39 PM
Surr: BFB	78.9	66.6-105		%Rec	1	2/11/2020 10:29:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/11/2020 10:29:39 PM
Toluene	ND	0.049		mg/Kg	1	2/11/2020 10:29:39 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/11/2020 10:29:39 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/11/2020 10:29:39 PM
Surr: 4-Bromofluorobenzene	88.0	80-120		%Rec	1	2/11/2020 10:29:39 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	60		mg/Kg	20	2/11/2020 4:08:13 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 2 of 8

Analytical Report

Lab Order 2002341

Date Reported: 2/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-03 0.5'

Project: Rodney Robinson

Collection Date: 2/6/2020 11:45:00 AM

Lab ID: 2002341-003

Matrix: SOIL

Received Date: 2/8/2020 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/12/2020 10:28:50 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/12/2020 10:28:50 AM
Surr: DNOP	85.5	55.1-146		%Rec	1	2/12/2020 10:28:50 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/11/2020 11:39:08 PM
Surr: BFB	79.2	66.6-105		%Rec	1	2/11/2020 11:39:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/11/2020 11:39:08 PM
Toluene	ND	0.049		mg/Kg	1	2/11/2020 11:39:08 PM
Ethylbenzene	ND	0.049		mg/Kg	1	2/11/2020 11:39:08 PM
Xylenes, Total	ND	0.099		mg/Kg	1	2/11/2020 11:39:08 PM
Surr: 4-Bromofluorobenzene	88.9	80-120		%Rec	1	2/11/2020 11:39:08 PM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	3000	150		mg/Kg	50	2/12/2020 9:45:55 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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Analytical Report

Lab Order 2002341

Date Reported: 2/13/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.

Client Sample ID: BS20-04 2"

Project: Rodney Robinson

Collection Date: 2/6/2020 2:00:00 PM

Lab ID: 2002341-004

Matrix: SOIL

Received Date: 2/8/2020 8:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/12/2020 10:38:02 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/12/2020 10:38:02 AM
Surr: DNOP	87.8	55.1-146		%Rec	1	2/12/2020 10:38:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/12/2020 12:02:15 AM
Surr: BFB	78.3	66.6-105		%Rec	1	2/12/2020 12:02:15 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/12/2020 12:02:15 AM
Toluene	ND	0.050		mg/Kg	1	2/12/2020 12:02:15 AM
Ethylbenzene	ND	0.050		mg/Kg	1	2/12/2020 12:02:15 AM
Xylenes, Total	ND	0.10		mg/Kg	1	2/12/2020 12:02:15 AM
Surr: 4-Bromofluorobenzene	87.4	80-120		%Rec	1	2/12/2020 12:02:15 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	5000	300		mg/Kg	100	2/12/2020 9:58:16 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of 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#: 2002341

13-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson

Sample ID: MB-50382		SampType: mblk		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 50382		RunNo: 66467						
Prep Date: 2/11/2020		Analysis Date: 2/11/2020		SeqNo: 2284146		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-50382		SampType: lcs		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 50382		RunNo: 66467						
Prep Date: 2/11/2020		Analysis Date: 2/11/2020		SeqNo: 2284148		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	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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

WO#: 2002341

13-Feb-20

Client: Vertex Resource Group Ltd.

Project: Rodney Robinson

Sample ID: MB-50393	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 50393	RunNo: 66489								
Prep Date: 2/11/2020	Analysis Date: 2/12/2020	SeqNo: 2284655 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		109	55.1	146			

Sample ID: LCS-50393	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 50393	RunNo: 66489								
Prep Date: 2/11/2020	Analysis Date: 2/12/2020	SeqNo: 2284656 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	115	70	130			
Surr: DNOP	5.0		5.000		101	55.1	146			

Sample ID: 2002341-001AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS20-01 0.5'	Batch ID: 50393	RunNo: 66489								
Prep Date: 2/11/2020	Analysis Date: 2/12/2020	SeqNo: 2284658 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	9.7	48.40	0	132	47.4	136			
Surr: DNOP	6.7		4.840		138	55.1	146			

Sample ID: 2002341-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: BS20-01 0.5'	Batch ID: 50393	RunNo: 66489								
Prep Date: 2/11/2020	Analysis Date: 2/12/2020	SeqNo: 2285115 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.1	45.58	0	127	47.4	136	9.86	43.4	
Surr: DNOP	5.4		4.558		118	55.1	146	0	0	

Qualifiers:

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

Page 6 of 8

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

WO#: 2002341

13-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson

Sample ID: 2002341-001ams	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-01 0.5'	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285139 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.58	0	91.8	69.1	142			
Surr: BFB	880		983.3		89.7	66.6	105			

Sample ID: 2002341-001amsd	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: BS20-01 0.5'	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285140 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.46	0	92.0	69.1	142	0.316	20	
Surr: BFB	860		978.5		88.3	66.6	105	0	0	

Sample ID: lcs-50355	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285152 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.4	80	120			
Surr: BFB	880		1000		88.3	66.6	105			

Sample ID: mb-50355	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285153 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	820		1000		81.8	66.6	105			

Qualifiers:

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

Page 7 of 8

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

WO#: 2002341

13-Feb-20

Client: Vertex Resource Group Ltd.**Project:** Rodney Robinson

Sample ID: 2002341-002ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-02 0.5'	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285159 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	0.9814	0.01685	97.6	78.5	119			
Toluene	1.0	0.049	0.9814	0.01517	101	75.7	123			
Ethylbenzene	1.0	0.049	0.9814	0	103	74.3	126			
Xylenes, Total	3.1	0.098	2.944	0.02305	104	72.9	130			
Surr: 4-Bromofluorobenzene	0.90		0.9814		91.4	80	120			

Sample ID: 2002341-002amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: BS20-02 0.5'	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285160 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9940	0.01685	99.4	78.5	119	3.06	20	
Toluene	1.0	0.050	0.9940	0.01517	103	75.7	123	2.95	20	
Ethylbenzene	1.1	0.050	0.9940	0	106	74.3	126	3.98	20	
Xylenes, Total	3.2	0.099	2.982	0.02305	106	72.9	130	2.94	20	
Surr: 4-Bromofluorobenzene	0.93		0.9940		93.3	80	120	0	0	

Sample ID: LCS-50355	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285171 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.2	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.93	0.050	1.000	0	92.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.0	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.2	80	120			

Sample ID: mb-50355	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 50355	RunNo: 66461								
Prep Date: 2/10/2020	Analysis Date: 2/11/2020	SeqNo: 2285172 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	0.91		1.000		91.1	80	120			

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 Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix	



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

Sample Log-In Check List

Client Name: VERTEX CARLSBAD

Work Order Number: 2002341

RcptNo: 1

Received By: Erin Melendrez 2/8/2020 8:35:00 AM

Completed By: Erin Melendrez 2/8/2020 10:58:56 AM

Reviewed By: YG 2/10/20

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: JR 2/10/20

Special Handling (if applicable)

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

16. Additional remarks:

17. Cooler Information

Cooler No.	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	5.4	Good				

ATTACHMENT 8

Natalie Gordon

From: John Hurt <JHurt@matadorresources.com>
Sent: Monday, June 8, 2020 3:47 PM
To: Natalie Gordon
Subject: FW: Closure Denied - Matador - Rodney Robinson Fed 101H Lease Road - (Incident #NRM2003757362)
Attachments: Closure Denied - Matador - Rodney Robinson Fed 101H Lease Road.pdf

And here we go.

From: Hamlet, Robert, EMNRD [mailto:Robert.Hamlet@state.nm.us]
Sent: Monday, June 8, 2020 4:30 PM
To: John Hurt <JHurt@matadorresources.com>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Eads, Cristina, EMNRD <Cristina.Eads@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Subject: Closure Denied - Matador - Rodney Robinson Fed 101H Lease Road - (Incident #NRM2003757362)

****EXTERNAL EMAIL****

John,

We have received your closure report and final C-141 for **Incident #NRM2003757362 Rodney Robinson Fed 101H Lease Road**, thank you. This closure is denied.

- The rule says, "The samples must be analyzed for the constituents listed in Table I of [19.15.29.12](#) NMAC or constituents from other applicable remediation standards". This requires all samples to be tested for Chlorides, TPH, BTEX, and Benzene. Very few of your samples were tested for TPH, BTEX, and Benzene.
- This entire spill is considered off-site, which requires it to be remediated to the <50' depth to ground water (Table 1, Spill Rule). All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and TPH less than 100 mg/kg. In the pasture area, 4 feet below the ground surface, soil contamination limits revert back to Table 1 "Closure Criteria for Soils Impacted by a Release" included in the spill rule <http://164.64.110.134/parts/title19/19.015.0029.html>
- Vertex requests that restoration and reclamation of the impacted area along the roadway and on the lease road surface be deferred until such time as the lease road is removed and reclaimed per [19.15.29.13](#) NMAC.
- A deferral can only be granted on an active well pad and not on a road, right-of-way, or in the pasture. A clarification document has been placed on the OCD website to clarify the matter. <http://www.emnrd.state.nm.us/OCD/documents/OCDInternalPolicy-SpillRuleClarifications.pdf>

Spill Rule Procedures September 6, 2019 Page 2 & 3

VI. ON-SITE vs. OFF-SITE REMEDIATION:

a. The remediation requirements in Table 1 [19.15.29.12](#) NMAC are the same for all releases, whether they occur on an active production site or not (19.15.29.12(C)(2) and (3) NMAC). Remediation on an active site can be deferred in areas immediately under or around production equipment such as production tanks, wellheads, and pipelines where remediation could cause a major facility deconstruction. A major facility deconstruction is determined by the OCD on a case by case basis. The remediation, restoration, and reclamation may be deferred with OCD's written approval until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first. For the deferral request the contamination must be fully delineated. In addition,

the contamination must not pose an imminent risk to human health, the environment, or groundwater. Deferrals are not forever and remediation must be completed in a timely fashion once the equipment is out of use for oil and gas operations.

b. Cleanup of off-site impacts cannot be deferred as they would not meet the deferral requirements of 19.15.29.12(C)(2) NMAC.

c. The difference between on- and off-site releases is when the reclamation and restoration must occur. Off-site releases must be reclaimed and restored immediately. On-site reclamation and restoration can wait until operations have ceased, but still must be done.

Please let me know if you have any further questions.

Regards,

Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 748-1283
Robert.Hamlet@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

This message is strictly confidential and is for the sole use of the intended recipient. If you are not the intended recipient of this message, you may not disclose, print, copy, disseminate or otherwise use this message or the information included herein. If you are not the intended recipient, please reply and notify the sender (only) and promptly delete the message.

Form C-141

State of New Mexico
Oil Conservation Division

Page 6

Incident ID	NRM2003757362
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: John Hurt Title: RES Specialist
Signature:  Date: 1/25/21
email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Robert Hamlet Date: 11/15/2021

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: 11/15/2021
Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

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 15501

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 15501
	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 #NRM2003757362 RODNEY ROBINSON FEDERAL 101H LEASE ROAD, thank you. This closure is approved.	11/15/2021