August 12, 2020 Vertex Project #: 20E-00141-020

Spill Closure Report: Caballo 9 State #001
Unit E, Section 9, Township 23 South, Range 34 East
County: Lea
API: 30-025-34577
Incident Tracking Number: NRM1929540709

Prepared For: Devon Energy Production Company
6488 Seven Rivers Highway
Artesia, New Mexico 88210

New Mexico Oil Conservation Division – District 1 – Hobbs
1625 North French Drive
Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation, if necessary, for a treated produced water release that occurred at Caballo 9 State #001, API 30-025-34577 (hereafter referred to as "Caballo"). Devon provided notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 1 and the New Mexico State Land Office (SLO), who owns the property, on October 2, 2019, via submission of an initial C-141 Release Notification (Attachment 1). The NM OCD tracking number assigned to this incident is NRM1929540709.

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 and the SLO for closure of this release.

Incident Description

On September 17, 2019, a release occurred at Devon's Caballo site when the 1-inch poly riser on the 12-inch trunk line split. This incident resulted in the release of approximately 7.65 barrels (bbls) of treated produced water onto an area immediately southwest of the wellpad and adjacent to the lease road. No free liquids were recovered. No produced water was released into sensitive areas or waterways.

Site Characterization

The release at Caballo occurred on New Mexico state-owned land, N 32.321634, W 103.481215, approximately 22 miles northwest of Jal, New Mexico. The legal description for the site is Unit E, Section 9, Township 23 South, Range 34 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 2.

Caballo is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently used for oil and gas production, and storage. The following sections specifically describe the area surrounding the wellpad.

The surrounding landscape is associated with sandy plains typical of elevations of 3,000 to 3,900 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 10 and 12 inches. Historically, the plant community has been dominated by grasses, with scattered shinnery oak and sand sage; perennial and annual forb abundance are dependent on precipitation. The dominant grass species are black grama, dropseeds and bluestems. Litter and, to a lesser extent, bare ground make up a significant proportion of the ground cover (United States Department of Agriculture, Natural Resources Conservation Service, 2020).

The Geological Map of New Mexico indicates the surface geology at Caballo is comprised of Qep – eolian and piedmont deposits that include eolian sands interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2020). The Natural Resources Conservation Service Web Soil Survey characterizes the soil at the site as Pyote and Maljamar fine sands, characterized by deep layers of fine sand and fine sandy loam. It tends to be well drained with negligible runoff and low available moisture levels in the soil profile. There is low potential for karst geology to be present near Caballo, though some erosional karst is possible (United States Department of the Interior, United States Geological Survey, 2020a).

There is no surface water located at Caballo. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 0.66 miles south of the site (United States Department of the Interior, United States Geological Survey, 2020b). A freshwater stock pond is located approximately 0.70 miles south-southeast of the release site (United States Fish and Wildlife Service, 2020). At Caballo, there are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features nearby as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active well to Caballo is a New Mexico Office of the State Engineer (NM OSE) well, located approximately 0.5 miles north of the site, with a depth to groundwater of 285 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). A second NM OSE well with data showing a depth to groundwater of 285 feet bgs is located 0.86 miles south of the release site. Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release is 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 Caballo is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site are determined to be associated with the following constituent concentration limits based on depth to groundwater.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
>100 feet	Chloride	20,000 mg/kg
	TPH[1] (GRO + DRO + MRO)	2,500 mg/kg
	GRO + DRO	1,000 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

[1]Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)
[2]Benzene, toluene, ethylbenzene and xylenes (BTEX)

Remedial Actions

As a significant amount of time had passed since the release at Caballo, it was believed that any contamination would have naturally attenuated, and the site would not require remediation. Initial spill inspection and site characterization activities at Caballo were completed by Vertex on April 4, 2020. Initial soil samples from the area where the release had occurred were field screened using an electroconductivity (EC) meter and a regression equation to approximate the level of chlorides present in the soil. All field screening results from the release area had levels of electroconductivity equivalent to or below that expected in the background soils of this region. Field screening results are summarized in the Daily Field Report (DFR) associated with this visit (Attachment 4).

Because the initial soil sample field screening results from the potentially impacted area showed no indications of the presence of chlorides or other contaminants of concern, and based on the fact that the release consisted solely of treated produced water, no excavation or remediation was deemed necessary. On April 15, 2020, Vertex provided 48-hour notification of confirmation sampling to NM OCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 5). Confirmatory samples were collected on April 17, 2020.

A total of six five-point composite confirmatory samples were collected from the area of potential impact where the release occurred. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sampling analytical data are summarized in 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 five-point composite samples. The confirmatory sample locations are presented on Figure 1 (Attachment 2).

Closure Request

Vertex recommends no remediation action necessary to address the release at Caballo. Laboratory analyses of the final confirmatory samples showed constituent of concern concentration levels below NM OCD closure criteria for areas where depth to groundwater is greater than 100 feet bgs as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Additionally, based on the location of the release off-pad in a previously undisturbed area, NM OCD regulations require the release area to be restored to the condition that existed prior to the release and any disturbed areas reclaimed to the levels outlined in 19.15.29.13 NMAC. As the area did not require remediation activities, the vegetation remains intact and appears healthy. Vertex requests that restoration and reclamation of the release area be considered complete per Paragraph (3) of Subsection D 19.15.29.13 NMAC regulations.

Vertex requests that this incident (NRM1929540709) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon 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 September 17, 2019, release at Caballo.

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. Site Schematic and Confirmatory Sampling Locations
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 Notification of Confirmatory Sampling to Regulatory Agencies
Attachment 6. Confirmatory Sampling Laboratory Results
Attachment 7. Laboratory Data Reports/Chain of Custody Forms

References

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

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.

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

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

United States Department of the Interior, United States Geological Survey. (2020a). *Caves and Karst in the U.S. National Park Service*. Retrieved from https://www.arcgis.com/home/webmap/viewer.html?webmap=14675403c37948129acb758138f2dd1e

United States Department of the Interior, United States Geological Survey. (2020b). *The National Map: National Hydrography Dataset*. Retrieved from https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Fbasemap.nationalmap.gov%2Farcgis%2Frest%2Fservices%2FUSGSHydroCached%2FMapServer&source=sd.

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

Limitations

This report has been prepared for the sole benefit of Devon Energy Production Company (Devon). 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 Devon. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

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

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NRM1929540709
District RP	1RP-5762
Facility ID	
Application ID	pRM1929541620

Release Notification

Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Amanda T. Davis	Contact Telephone 575-748-0176
Contact email amanda.davis@dvn.com	Incident # *(assigned by OCD)*
Contact mailing address 6488 Seven Rivers HWY	

Location of Release Source

Latitude 32.321634 Longitude -103.481215
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Caballo 9 State #001	Site Type Salt Water Disposal
Date Release Discovered 9/17/2019	API# *(if applicable)* 30-025-34577

Unit Letter	Section	Township	Range	County
E	09	23S	34E	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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 7.65	Volume Recovered (bbls) 0
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: The 1" poly riser on the 12" trunk line split causing fluid release. Fluid was released on the south west side off the pad. Spill calculations 30'x20'x1/2".

State of New Mexico
Oil Conservation Division

Incident ID	NRM1929540709
District RP	1RP_5762
Facility ID	
Application ID	pRM1929541620

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

Initial Response

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

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

If all the actions described above have not been undertaken, explain why:

Spill was not in containment.

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: Kendra DeHoyos Title: EHS Associate

Signature: Kendra DeHoyos Date: 10/2/2019

email: kendra.dehoyos@dvn.com Telephone: 575-748-3371

OCD Only

Received by: Ramona Marcus Date: 10/22/2019

State of New Mexico
Oil Conservation Division

Incident ID	NRM1929540709
District RP	1RP-5762
Facility ID	
Application ID	pRM1929541620

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

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- NA Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

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Application ID	pRM1929541620

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: Tom Bynum Title: EHS Consutlant

Signature: Tom Bynum Date: 8/14/2020

email: tom.bynum@dvn.com Telephone: 575-748-3371

OCD Only

Received by: Cristina Eads Date: 08/18/2020

State of New Mexico
Oil Conservation Division

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District RP	1RP-5762
Facility ID	
Application ID	pRM1929541620

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.***

[X] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] 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)

[X] Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

[X] 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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 8/14/2020

email: tom.bynum@dvn.com Telephone: 575-748-3371

OCD Only

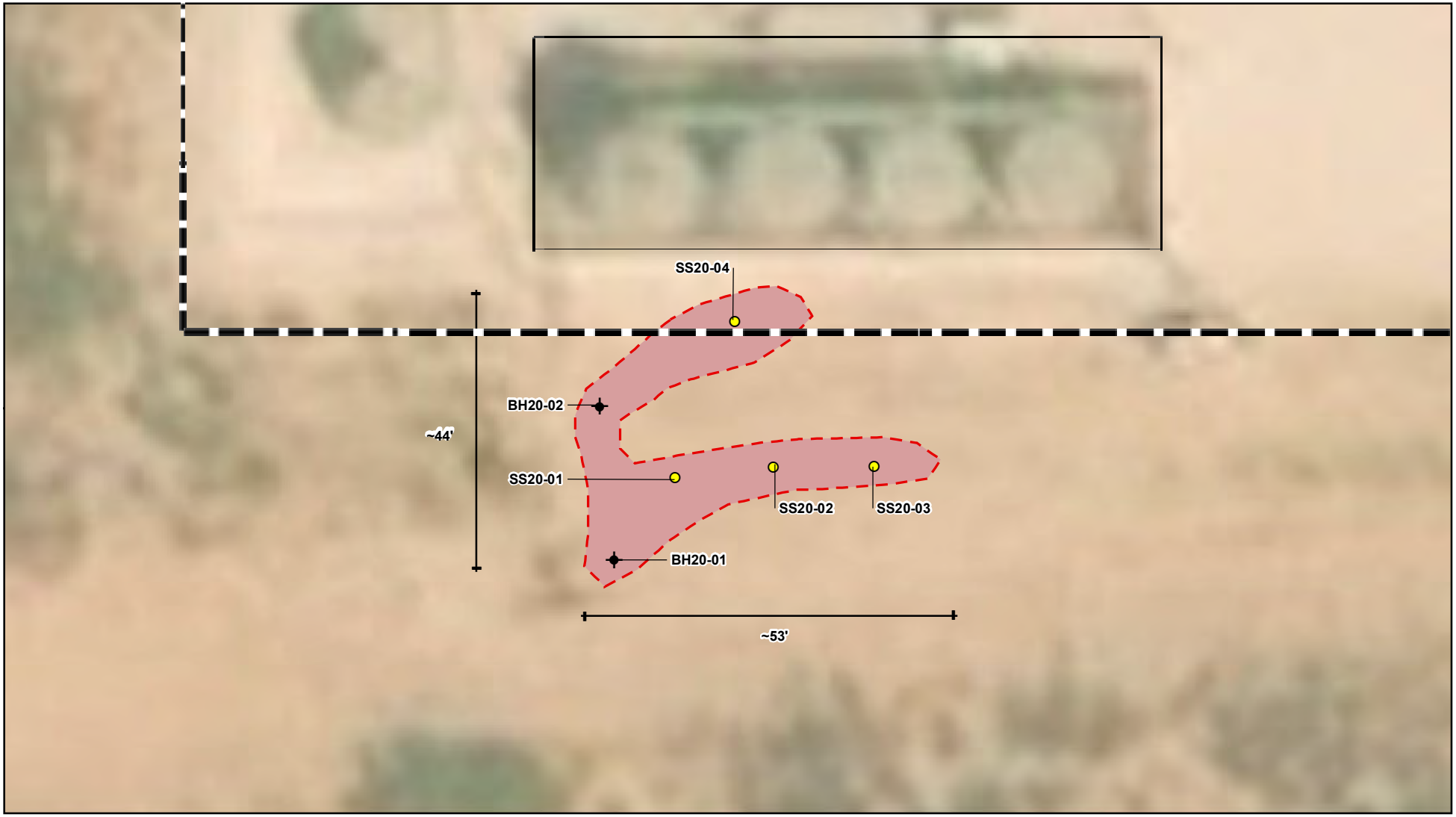
Received by: Cristina Eads Date: 08/18/2020

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: Cristina Eads Date: 10/21/2020

Printed Name: Cristina Eads Title: Environmental Specialist

ATTACHMENT 2



Borehole
Surface Sample
Approximate Spill Area (~816 sq. ft.)
Containment
Approximate Lease Boundary

VERTEX

0 10 20 ft

Map Center:
Lat/Long: 32.321372, -103.481657

NAD 1983 UTM Zone 13N
Date: Aug 10/20

N

Site Schematic and Confirmatory Sampling Locations
Caballo 9 State #001

FIGURE:
1

devon

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

Note: Imagery from ESRI, 2017.

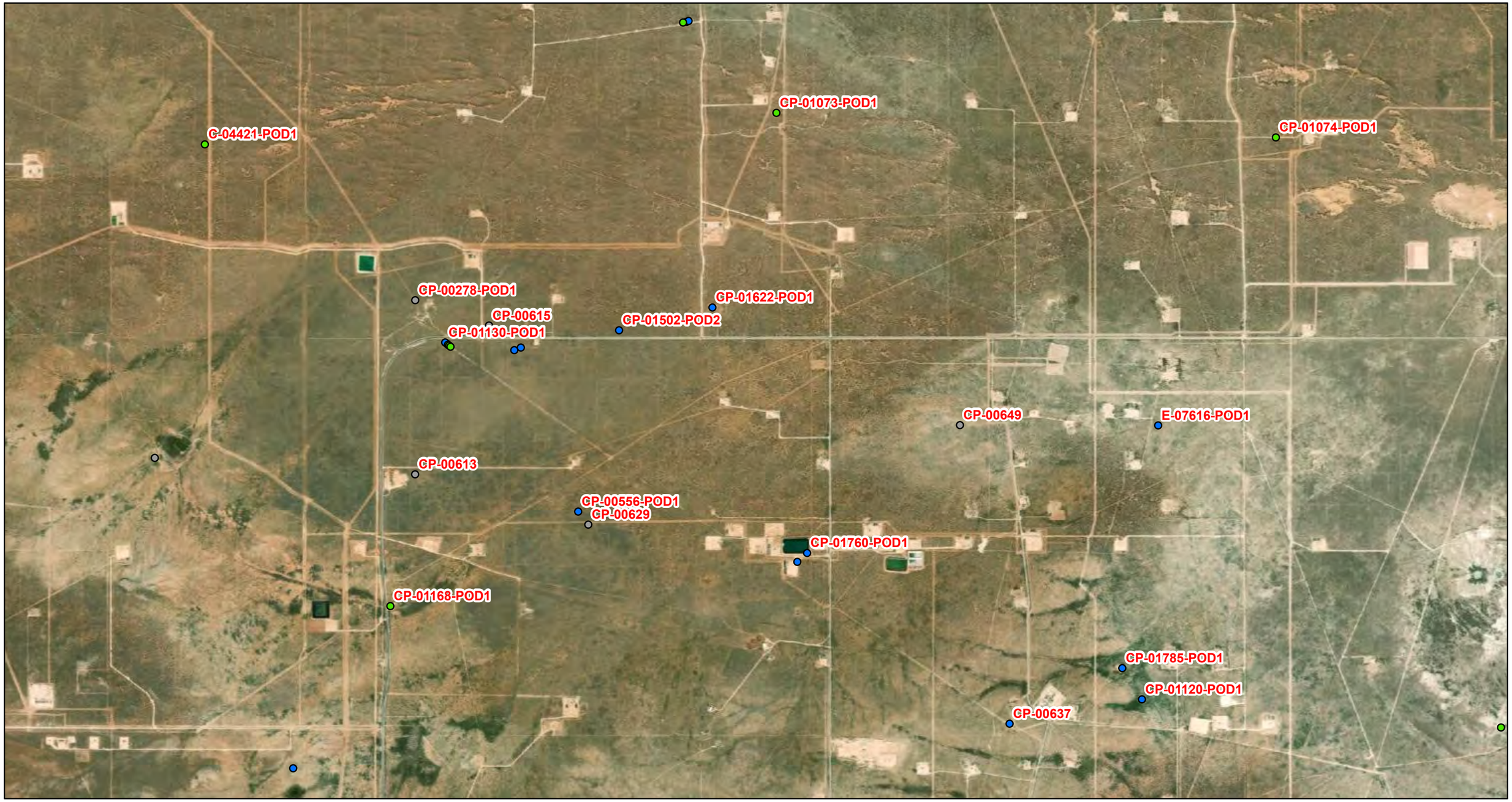
VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141\020 - Caballo 9 State #001\Figure 1 Site Scehmatic and Confirmatory Samples Caballo 9 State #001.mxd

ATTACHMENT 3

Closure Criteria Determination Worksheet			
Site Name: Caballo 9 State 1			
Spill Coordinates:		X: 32.32190	Y: -103.48140
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	**285**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	3,514	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	3,853	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	6,869	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**	2,464	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	5,024	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	undetermined	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'

Caballo 9 State #001 - DTGW



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OSE District Boundary

GIS WATERS PODs

- Active
- Pending

Conveyances

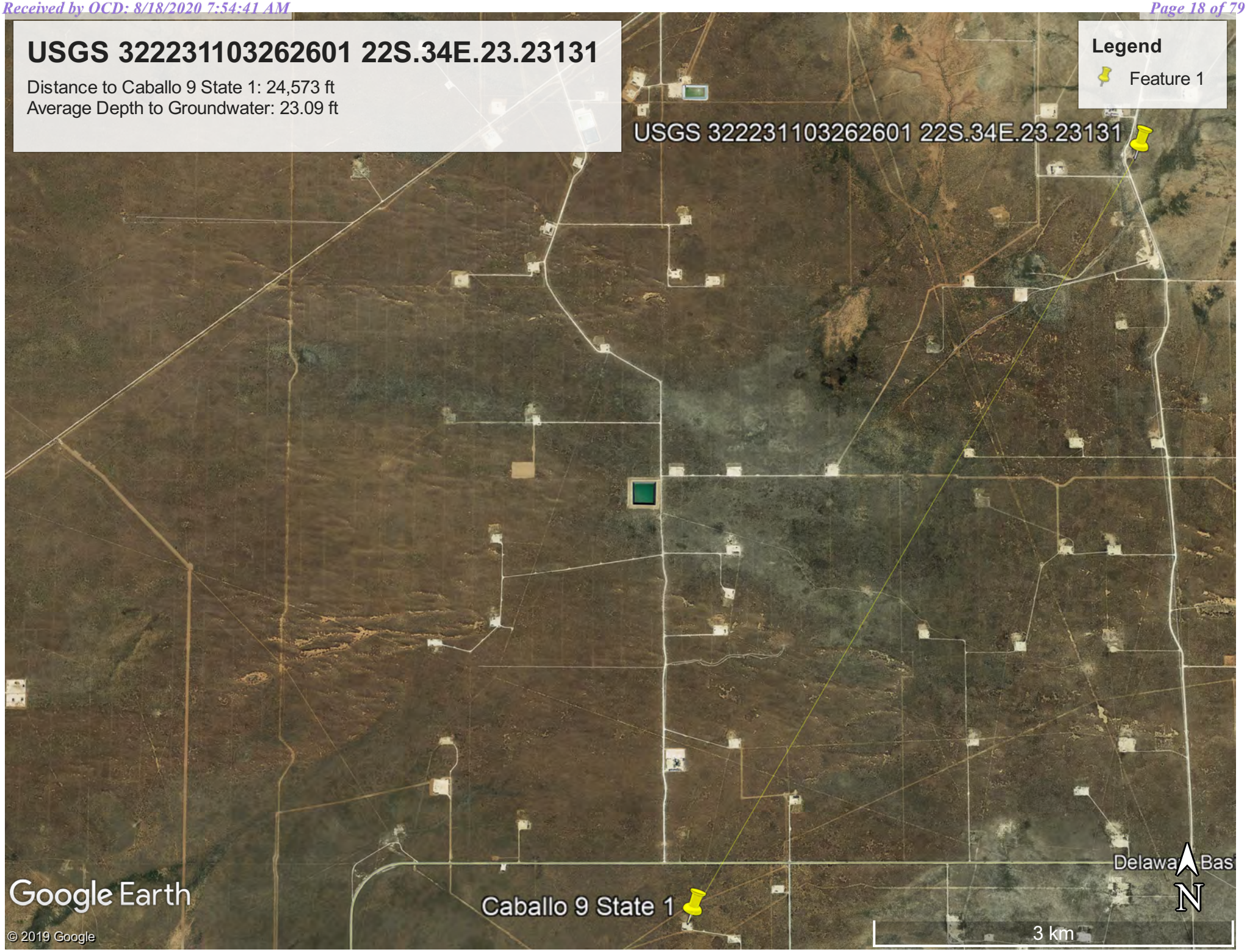
- Acequia
- Acequia Tunnel
- Canal
- Channel
- Closed Drain
- Community Ditch
- Connector
- Culvert
- Ditch
- Diversion Weir
- Drain
- Feeder
- Interior Drain
- Lateral
- Pipe
- Wasteway
- Other
- Unknown

1:36,112

0 0.38 0.75 1.5 mi

0 0.5 1 2 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user


USGS 322231103262601 22S.34E.23.23131
Distance to Caballo 9 State 1: 24,573 ft
Average Depth to Groundwater: 23.09 ft
Legend
Feature 1
USGS 322231103262601 22S.34E.23.23131
Caballo 9 State 1
Delawa Bas
N
3 km
Google Earth
© 2019 Google

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
NA	CP 01622 POD1	1	3	3	04	23S	34E	642830	3577872

Driller License: 1706 **Driller Company:** ELITE DRILLERS CORPORATION

Driller Name: BRYCE WALLACE

Drill Start Date:	09/20/2019	**Drill Finish Date:**	10/02/2019	**Plug Date:**	
Log File Date:	10/17/2019	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	280 GPM
Casing Size:	9.70	**Depth Well:**	575 feet	**Depth Water:**	285 feet

Water Bearing Stratifications:	Top	Bottom	Description
	150	470	Sandstone/Gravel/Conglomerate
	470	575	Shale/Mudstone/Siltstone

Casing Perforations:	Top	Bottom
	275	575

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
NA	CP 01760 POD1	3	1	2	16	23S	34E	643627	3575897

Driller License: 1706 **Driller Company:** ELITE DRILLERS CORPORATION

Driller Name: WALLACE, BRYCE J.LEE.NER

Drill Start Date:	02/01/2020	**Drill Finish Date:**	03/15/2020	**Plug Date:**	
Log File Date:	04/09/2020	**PCW Rcv Date:**		**Source:**	Artesian
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	80 GPM
Casing Size:	8.00	**Depth Well:**	767 feet	**Depth Water:**	290 feet

Water Bearing Stratifications:

Top	Bottom	Description
285	320	Sandstone/Gravel/Conglomerate
320	350	Shale/Mudstone/Siltstone
350	445	Sandstone/Gravel/Conglomerate
445	495	Shale/Mudstone/Siltstone
495	530	Sandstone/Gravel/Conglomerate
530	555	Sandstone/Gravel/Conglomerate
555	570	Sandstone/Gravel/Conglomerate
570	585	Sandstone/Gravel/Conglomerate
585	600	Shale/Mudstone/Siltstone
600	630	Shale/Mudstone/Siltstone
630	660	Sandstone/Gravel/Conglomerate
660	710	Sandstone/Gravel/Conglomerate
710	750	Limestone/Dolomite/Chalk

Casing Perforations:

Top	Bottom
567	767

8/9/20 2:37 PM POINT OF DIVERSION SUMMARY

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	Twn	Rng	X	Y
	E 07616 POD1							646466	3576970

Driller License: 539 **Driller Company:** GARCIA BROTHERS DRILLING CO., LLC

Driller Name: GARCIA, RAYMOND, JR.

Drill Start Date: 08/10/1999 **Drill Finish Date:** 08/20/2000 **Plug Date:**

Log File Date: 12/07/2000 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 30 GPM

Casing Size: 4.50 **Depth Well:** 500 feet **Depth Water:** 300 feet

Water Bearing Stratifications:	Top	Bottom	Description
	300	500	Limestone/Dolomite/Chalk

Casing Perforations:	Top	Bottom
	460	500

Meter Number: 15833 **Meter Make:** NEPTLITP

Meter Serial Number: E5383 **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	Online
06/11/2012	2012	255819	A	cp		0	

**YTD Meter Amounts:	Year	Amount
	2012	0

8/9/20 2:38 PM POINT OF DIVERSION SUMMARY

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
CP 01622	CP	EXP	0	ATKINS ENGR ASSOC INC	LE	CP 01622 POD1	NA			Shallow	1 3 3	04	23S	34E	642829	3577872	751
CP 01502	CP	COM	250	BLM	LE	CP 01502 POD2	NA			Shallow	4 3 3	05	23S	34E	642073	3577676	1027
CP 01730	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01730 POD1	NA			Artesian	2 2 1	16	23S	34E	643549	3575824	1438
CP 01760	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01760 POD1	NA				3 1 2	16	23S	34E	643607	3575824	1463
CP 00556	CP	COM	0	GREGORY ROCKHOUSE RANCH, INC.	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01070	CP	PRO	0	TONYA'S PERMIT SERVICE	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01071	CP	PRO	0	TD WATER SERVICES	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01072	CP	PRO	0	GLENN'S WATER WELL SRVC, INC.	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01179	CP	PRO	0	CONCHO OIL & GAS	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01180	CP	PRO	0	CONCHO OIL & GAS	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 01181	CP	PRO	0	CONCHO OIL & GAS	LE	CP 00556 POD1				Shallow	4 4 3	08	23S	34E	641762	3576206	1499
CP 00629	CP	PRO	0	J.C. MILLS	LE	CP 00629					4 4 3	08	23S	34E	641846	3576102*	1503
CP 01502	CP	COM	250	WATER SPUR LLC	LE	CP 01502 POD1	NA			Shallow	4 3 3	05	23S	34E	641316	3577635	1704
CP 01075	CP	COM	83	LIMESTONE BASIN PROPERTIES	LE	CP 01075 POD1				Shallow	1 1 1	08	23S	34E	641277	3577525	1712
CP 00872	CP	EXP	0	KELLER RV, LLC.	LE	CP 00872 POD1				Shallow	1 1 1	08	23S	34E	641225	3577504*	1758
CP 00876	CP	PLS	50	LIMESTONE BASIN PROPERTIES	LE	CP 00872 POD1				Shallow	1 1 1	08	23S	34E	641225	3577504*	1758
CP 00878	CP	PRO	0	PENWELL ENERGY	LE	CP 00872 POD1				Shallow	1 1 1	08	23S	34E	641225	3577504*	1758
CP 00649	CP	PRO	0	MID AMERICAN PETROLEUM COMPANY	LE	CP 00649					3 4 1	10	23S	34E	644855	3576950*	1919

***UTM location was derived from PLSS - see Help**

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code Grant	Source	q 6416 4	Sec	Tws	Rng	X	Y	Distance
CP 00615	CP	PRO	0	J.C. MILLS	LE	CP 00615				4 4 4	06	23S	34E	641016	3577701*	2010
CP 01130	CP	MON	0	STRAUB CORPORATION	LE	CP 01130 POD5				2 1 2	07	23S	34E	640705	3577525	2272
					LE	CP 01130 POD4				2 1 2	07	23S	34E	640695	3577534	2284
					LE	CP 01130 POD3				2 1 2	07	23S	34E	640684	3577540	2296
					LE	CP 01130 POD2				2 1 2	07	23S	34E	640673	3577549	2308
					LE	CP 01130 POD1				2 1 2	07	23S	34E	640662	3577558	2321
CP 01073	CP	COM	85	LIMESTONE BASIN PROPERTIES	LE	CP 01073 POD1			Shallow	3	33	22S	34E	643327	3579453	2355
CP 00613	CP	PRO	0	J.C. MILLS	LE	CP 00613				3 1 4	07	23S	34E	640433	3576489*	2591
CP 00278	CP	IND	11	CONTINENTAL OIL COMPANY	LE	CP 00278 POD1				1 3 4	06	23S	34E	640414	3577897*	2643
CP 01686	CP	COM	100	LIMESTONE BASIN PROPERTIES	LE	CP 01705 POD1	NA		Shallow	4 4 2	32	22S	34E	642587	3580179	3070
CP 01705	CP	EXP	0	LIMESTONE LIVESTOCK LLC	LE	CP 01705 POD1	NA		Shallow	4 4 2	32	22S	34E	642587	3580179	3070
CP 01706	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01706 POD1	NA		Shallow	4 4 2	32	22S	34E	642603	3580185	3074
CP 01168	CP	EXP	0	LIMESTONE LIVESTOCK LLC	LE	CP 01168 POD1				2 4 1	18	23S	34E	640246	3575420	3192
CP 01624	CP	EXP	0	LIMESTONE LIVESTOCK LLC	LE	CP 01624 POD1				4 2 2	32	22S	34E	642669	3580494	3375
CP 01686	CP	COM	100	LIMESTONE BASIN PROPERTIES	LE	CP 01686 POD1	NA			4 2 2	32	22S	34E	642669	3580494	3375
CP 00637	CP	PRO	3	KELLER RV, LLC	LE	CP 00637			Shallow	3 3 4	15	23S	34E	645293	3574541*	3495
E 07616	E	MUL	3	PETE ALONZO	TO	E 07616 POD1		TOWN OF TAJIQUE	Shallow					646466	3576970	3526
CP 01740	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01740 POD1	NA		Artesian	1 1 1	34	22S	34E	644401	3580765	3917
CP 01803	CP	STK	3	LIMESTONE BASIN PROPERTIES	LE	CP 01803 POD1	22473			1 1 1	34	22S	34E	644356	3580786	3919
CP 01826	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01826 POD1	NA			1 1 1	34	22S	34E	644379	3580778	3920
CP 00323	CP	PRO	0	SHELL OIL COMPANY	LE	CP 00323				3 2	22	23S	34E	645406	3573837*	4111
CP 01120	CP	STK	3	LIMESTONE BASIN PROPERTIES	LE	CP 01120 POD1	NA		Shallow	2 3 3	14	23S	34E	646366	3574753	4166

***UTM location was derived from PLSS - see Help**

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance
CP 01729	CP	COM	200	LIMESTONE BASIN PROPERTIES	LE	CP 01120 POD1	NA			Shallow	2	3	3	14	23S	34E	646366	3574753	4166
CP 01785	CP	EXP	0	LIMESTONE BASIN PROPERTIES	LE	CP 01785 POD1	NA			Shallow	2	3	3	14	23S	34E	646366	3574753	4166
CP 01258	CP	MON	0	SIANA OIL AND GAS CO., LLC.	LE	CP 01258 POD1					1	4	3	22	23S	34E	645014	3573221	4423
CP 00864	CP	PRO	0	SANTA FE ENERGY RESOURCES	LE	CP 00864						2	3	29	22S	34E	641676	3581433*	4486
CP 01258	CP	MON	0	SIANA OIL AND GAS CO., LLC.	LE	CP 01258 POD3					1	4	3	22	23S	34E	644938	3573097	4498
CP 00618	CP	PRO	0	ESTORIL PRODUCING CO.	LE	CP 00618				Shallow	1	2	4	22	23S	34E	645713	3573539*	4534
C 04353	CUB	EXP	0	HUGHES PROPERTIES LLC	ED	C 04353 POD1	NA			Shallow	4	2	2	24	23S	33E	639474	3574098	4607
C 03563	C	STK	3	LIMESTONE BASIN PROPERTIES	LE	C 03563 POD1					2	1	3	12	23S	33E	638315	3576592	4659
CP 01258	CP	MON	0	STRAUB CORPORATION	LE	CP 01258 POD2					1	4	3	22	23S	34E	644941	3572883	4692
CP 00606	CP	PRO	0	NATOMAS NORTH AMERCIA INC.	LE	CP 00606				Shallow		4	1	23	23S	34E	646613	3573854*	4918
CP 01074	CP	COM	80	LIMESTONE BASIN PROPERTIES	LE	CP 01074 POD1				Shallow		4	4	35	22S	34E	647389	3579313	4952

Record Count: 51

UTMNAD83 Radius Search (in meters):

Easting (X): 642943.7 **Northing (Y):** 3577129.78 **Radius:** 5000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

(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	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01622 POD1	CP	LE	1	3	3	04	23S	34E	642830	3577872	751	575	285	290
CP 01502 POD2	CP	LE	4	3	3	05	23S	34E	642074	3577676	1027	680	300	380
CP 01730 POD1	CP	LE	2	2	1	16	23S	34E	643549	3575824	1438	594	200	394
CP 00556 POD1	CP	LE	4	4	3	08	23S	34E	641762	3576206	1499	497	255	242
CP 01502 POD1	CP	LE	4	3	3	05	23S	34E	641316	3577635	1704	648	200	448
CP 01075 POD1	CP	LE	1	1	1	08	23S	34E	641278	3577525	1712	430	20	410
CP 00872 POD1	CP	LE	1	1	1	08	23S	34E	641225	3577504*	1758	494	305	189
CP 01130 POD2	CP	LE	2	1	2	07	23S	34E	640674	3577549	2308	27		
CP 01130 POD1	CP	LE	2	1	2	07	23S	34E	640662	3577558	2321	27		
CP 01705 POD1	CP	LE	4	4	2	32	22S	34E	642588	3580179	3070	700	305	395
CP 01706 POD1	CP	LE	4	4	2	32	22S	34E	642603	3580185	3074	340	282	58
CP 00637	CP	LE	3	3	4	15	23S	34E	645293	3574541*	3495	430	430	0
E 07616 POD1	E	TO							646466	3576970	3526	500	300	200
CP 01740 POD1	CP	LE	1	1	1	34	22S	34E	644402	3580765	3917	600	560	40
CP 01120 POD1	CP	LE	2	3	3	14	23S	34E	646366	3574753	4166	397	318	79
CP 01785 POD1	CP	LE	2	3	3	14	23S	34E	646366	3574753	4166	488	245	243
CP 01258 POD1	CP	LE	1	4	3	22	23S	34E	645015	3573221	4423	25		
CP 01258 POD3	CP	LE	1	4	3	22	23S	34E	644938	3573097	4498	25		
CP 00618	CP	LE	1	2	4	22	23S	34E	645713	3573539*	4534	428	295	133
C 04353 POD1	CUB	ED	4	2	2	24	23S	33E	639474	3574098	4607	603	330	273
CP 01258 POD2	CP	LE	1	4	3	22	23S	34E	644941	3572883	4692	65		
CP 00606	CP	LE		4	1	23	23S	34E	646613	3573854*	4918	650	265	385

***UTM location was derived from PLSS - see Help**

Average Depth to Water: **287 feet**

Minimum Depth: **20 feet**

Maximum Depth: **560 feet**

Record Count: 22

UTMNAD83 Radius Search (in meters):

Easting (X): 642943.7 **Northing (Y):** 3577129.78 **Radius:** 5000

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 file.)

(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	POD Sub-basin Code	County	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
CP 01622 POD1	CP	LE	Shallow	1	3	3	04	23S	34E	642830	3577872	751	09/20/2019	10/02/2019	10/17/2019	575	285	BRYCE WALLACE	1706
CP 01502 POD2	CP	LE	Shallow	4	3	3	05	23S	34E	642074	3577676	1027	11/22/2017	12/09/2017	12/21/2017	680	300	TAYLOR, ROY A.	1626
CP 01730 POD1	CP	LE	Artesian	2	2	1	16	23S	34E	643549	3575824	1438	10/31/2018	11/05/2018	12/13/2018	594	200	WALLACE, BRYCE J.	1706
CP 00556 POD1	CP	LE	Shallow	4	4	3	08	23S	34E	641762	3576206	1499	09/27/1974	10/17/1974	10/25/1974	497	255	ABBOTT, MURRELL	46
CP 01502 POD1	CP	LE	Shallow	4	3	3	05	23S	34E	641316	3577635	1704	08/10/2017	08/19/2017	09/06/2017	648	200	TAYLOR, ROY A.	1626
CP 01075 POD1	CP	LE	Shallow	1	1	1	08	23S	34E	641278	3577525	1712	05/21/2012	05/26/2012	06/08/2012	430	20	NORRIS, JOHN D.	1682
CP 00872 POD1	CP	LE	Shallow	1	1	1	08	23S	34E	641225	3577504*	1758	09/29/1997	10/03/1997	12/01/1997	494	305	COLLIS, ROBERT E.	1184
CP 01130 POD2	CP	LE		2	1	2	07	23S	34E	640674	3577549	2308	12/19/2012	12/19/2012	12/31/2012	27			1478
CP 01130 POD1	CP	LE		2	1	2	07	23S	34E	640662	3577558	2321	12/19/2012	12/19/2012	12/31/2012	27			1478
CP 01705 POD1	CP	LE	Shallow	4	4	2	32	22S	34E	642588	3580179	3070	04/02/2018	05/01/2018	05/23/2018	700	305	KEY, CASEY	1058
CP 01706 POD1	CP	LE	Shallow	4	4	2	32	22S	34E	642603	3580185	3074	01/06/2020	01/07/2020	01/13/2020	340	282	BRYCE WALLACE	1706
CP 00637	CP	LE	Shallow	3	3	4	15	23S	34E	645293	3574541*	3495	07/06/1981	07/09/1981	07/16/1981	430	430	WHEELER, RONALD R	729
E 07616 POD1	E	TO	Shallow							646466	3576970	3526	08/10/1999	08/20/2000	12/07/2000	500	300	GARCIA, RAYMOND, JR.	539
CP 01740 POD1	CP	LE	Artesian	1	1	1	34	22S	34E	644402	3580765	3917	03/15/2019	09/26/2019	10/17/2019	600	560	BRYCE WALLCE	1706
CP 01120 POD1	CP	LE	Shallow	2	3	3	14	23S	34E	646366	3574753	4166	01/09/2013	04/06/2013	04/24/2013	397	318	BENTLE, BILLY L.	1292
CP 01785 POD1	CP	LE	Shallow	2	3	3	14	23S	34E	646366	3574753	4166	04/21/2019	04/23/2019	06/03/2019	488	245	WALLACE, BRYCE J. LEE.NER	1706

***UTM location was derived from PLSS - see Help**

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

(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	POD Sub-basin Code	County	Source	q 6416	q 4	q 3	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
CP 01258 POD1	CP	LE		1	4	3	22	23S	34E	645015	3573221	4423	12/04/2013	12/04/2013	12/23/2013	25		BRYAN, EDWARD (LD)	1711
CP 01258 POD3	CP	LE		1	4	3	22	23S	34E	644938	3573097	4498	12/04/2013	12/04/2013	12/23/2013	25		BRYAN, EDWARD (LD)	1711
CP 00618	CP	LE	Shallow	1	2	4	22	23S	34E	645713	3573539*	4534	05/01/1980	05/05/1980	05/09/1980	428	295	ABBOTT, MURRELL	46
C 04353 POD1	CUB	ED	Shallow	4	2	2	24	23S	33E	639474	3574098	4607	11/04/2019	11/13/2019	01/29/2020	603	330	JUSTIN MULLINS	1737
CP 01258 POD2	CP	LE		1	4	3	22	23S	34E	644941	3572883	4692	12/04/2013	12/04/2013	12/23/2013	65		BRYAN, EDWARD (LD)	1711
CP 00606	CP	LE	Shallow		4	1	23	23S	34E	646613	3573854*	4918	07/02/1979	07/26/1979	07/30/1979	650	265	HUEY, KENNETH D. (LD)	68

Record Count: 22

UTMNAD83 Radius Search (in meters):

Easting (X): 642943.7 **Northing (Y):** 3577129.78 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

U.S. Fish and Wildlife Service
National Wetlands Inventory

Caballo 9 State 1: Watercourse 3,514 ft

February 6, 2020

Wetlands

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

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

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Caballo 9 State 1: Wetland 5,024 ft

February 6, 2020

Wetlands

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

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U.S. Fish and Wildlife Service
National Wetlands Inventory

Caballo 9 State 1: Pond 3,853 ft

February 6, 2020

Wetlands

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

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

National Flood Hazard Layer FIRMette

FEMA

Legend

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

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

N

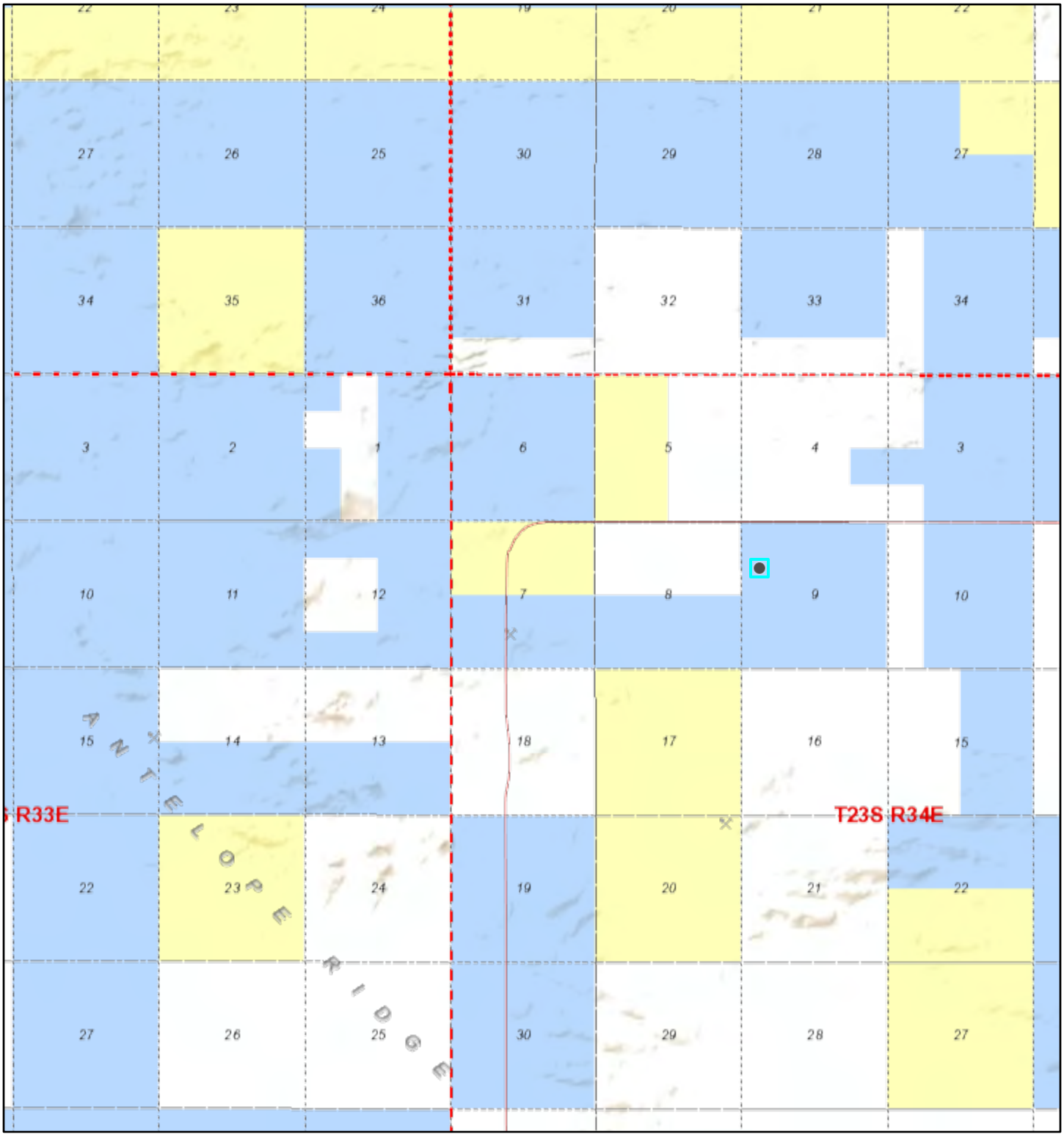
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/6/2020 at 1:18:18 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Active Mines Near Caballo 9 State 1



2/6/2020, 10:42:52 AM

1:72,224

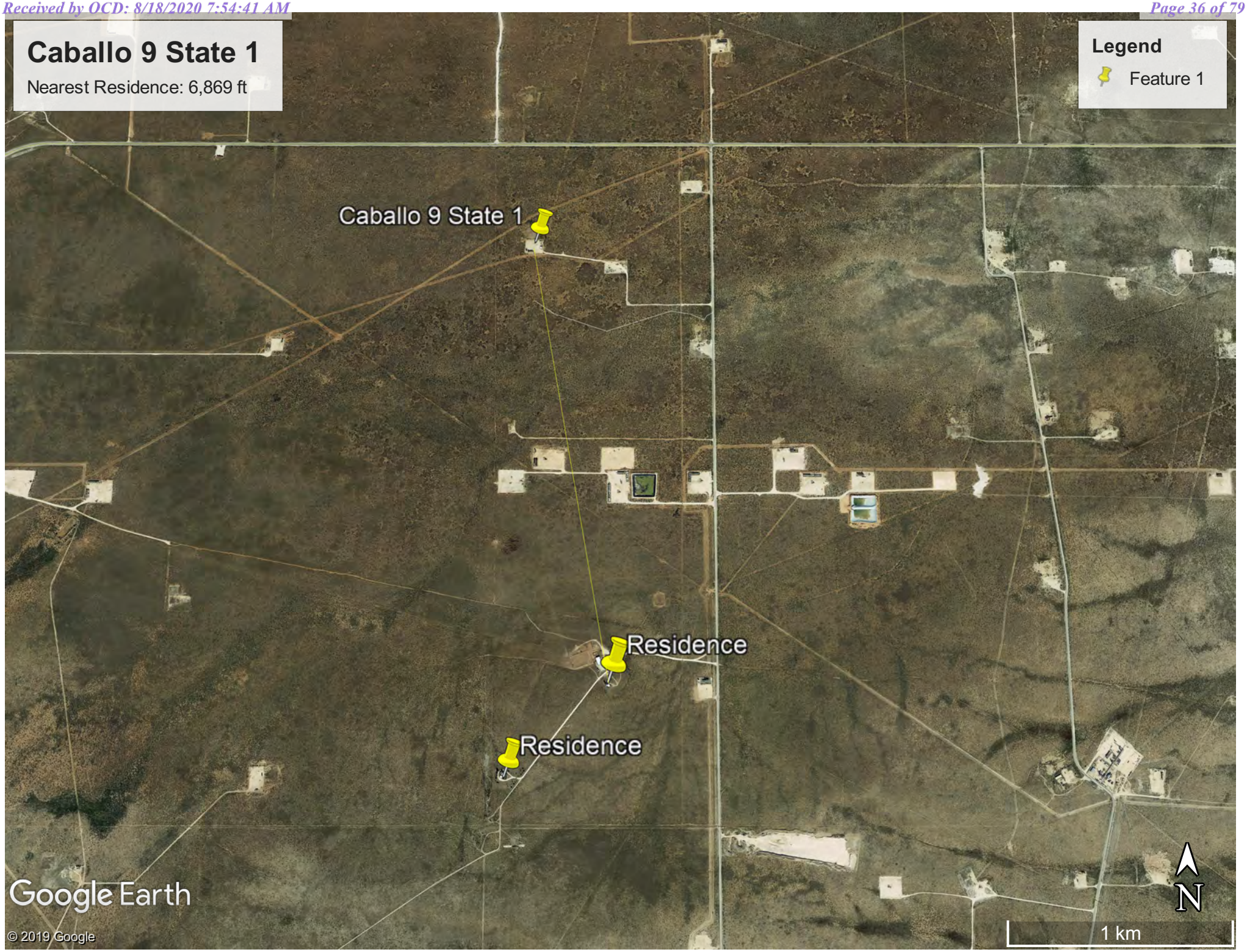
0 0.5 1 2 mi

0 0.75 1.5 3 km

Registered Mines

Aggregate, Stone etc.

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS


Caballo 9 State 1
Nearest Residence: 6,869 ft
Legend
Feature 1
Caballo 9 State 1
Residence
Residence
Google Earth
© 2019 Google
N
1 km

Soil Map—Lea County, New Mexico
(Caballo 9 State 1 Soil Map)

Soil Map—Lea County, New Mexico
(Caballo 9 State 1 Soil Map)

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PU	Pyote and maljamar fine sands	2.0	100.0%
Totals for Area of Interest		**2.0**	**100.0%**

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)

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)

Hydric soil rating: No

Data Source Information

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

ATTACHMENT 4

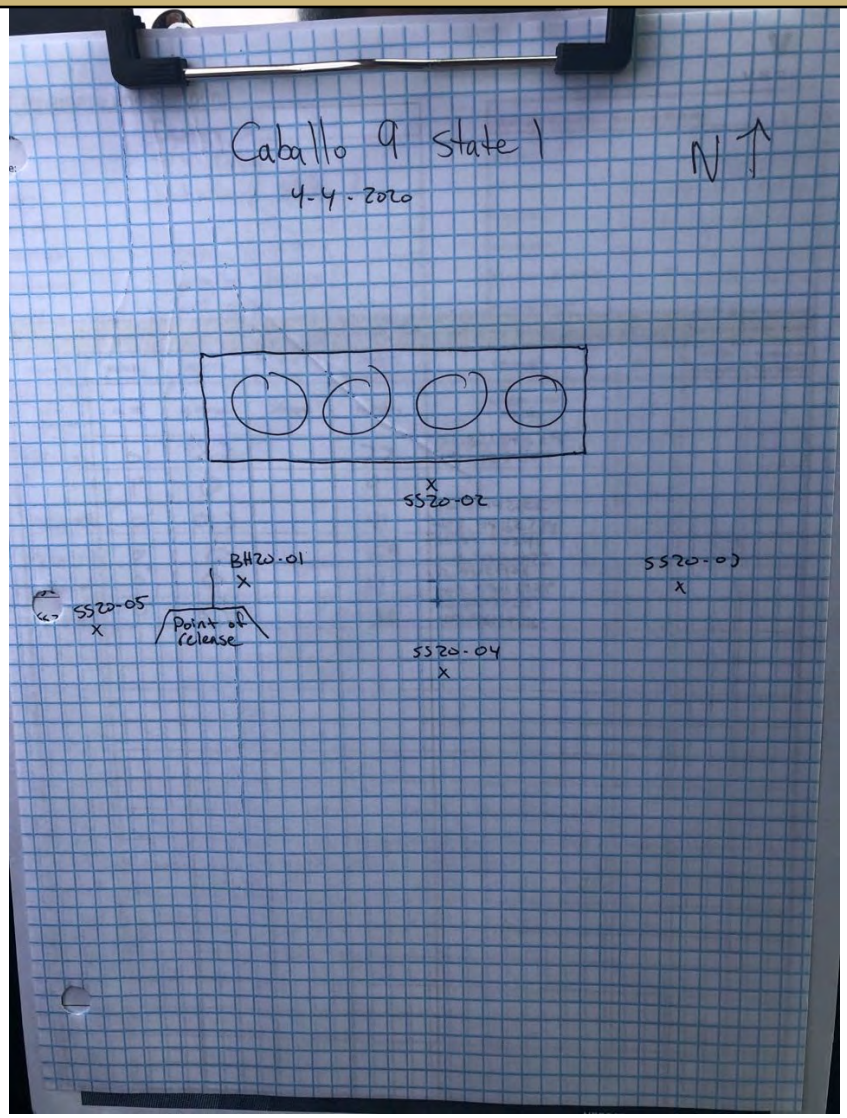
Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	4/4/2020
Site Location Name:	Caballo 9 State #001	Report Run Date:	4/16/2020 11:23 PM
Project Owner:	Amanda Davis	File (Project) #:	20E-00141
Project Manager:	Natalie Gordon	API #:	30-025-34577
Client Contact Name:	Amanda Davis	Reference	09/17/2019 - 7bbl PW Release
Client Contact Phone #:	(575) 748-0176		

Summary of Times	
Left Office	4/4/2020 7:45 AM
Arrived at Site	4/4/2020 9:16 AM
Departed Site	4/4/2020 11:59 AM
Returned to Office	4/4/2020 1:28 PM

Daily Site Visit Report

Site Sketch



Daily Site Visit Report

Summary of Daily Operations

9:45 Fill out arrival and safety forms
Delineate spill area
Field screen samples
Record data
Take pictures
Demobilize

Next Steps & Recommendations

1

Sampling

BH20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0.7 ppm			77 ppm		✓	32.32134324, -103.48174104	Yes
1 ft.	0 ppm			9 ppm		✓	32.32134324, -103.48174104	Yes

SS20-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0.3 ppm			41 ppm		✓	32.32142122, -103.48162774	Yes

Daily Site Visit Report

SS20-03

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			59 ppm		✓	32.32135340, -103.48140073	Yes

SS20-04

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			21 ppm		✓	32.32129809, -103.48162225	Yes

SS20-05

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0.4 ppm			36 ppm		✓	32.32133211, -103.48179066	Yes

Daily Site Visit Report

Site Photos

Viewing Direction: East

Spill area

Viewing Direction: North

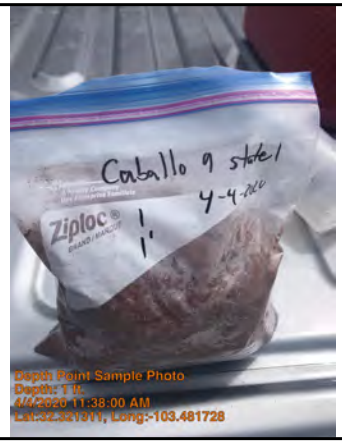
Spill area

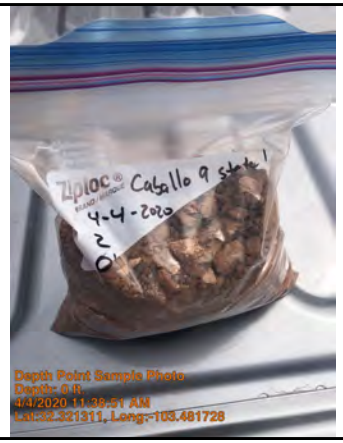
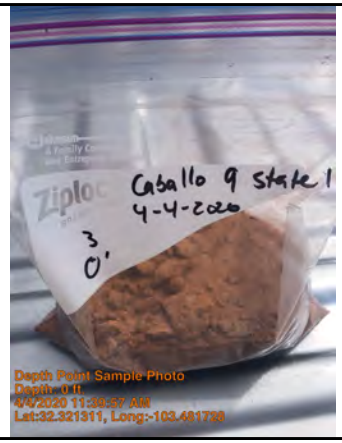
Viewing Direction: Northeast

Spill area

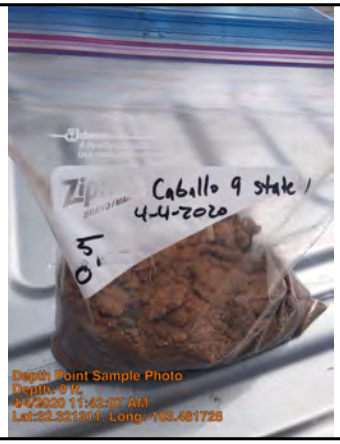
Daily Site Visit Report

Depth Sample Photos

Sample Point ID: BH20-01	**Sample Point ID**: BH20-01
	
Depth: 0 ft.	**Depth:** 1 ft.

Sample Point ID: SS20-02	**Sample Point ID**: SS20-03
	
Depth: 0 ft.	**Depth:** 0 ft.

Daily Site Visit Report

Sample Point ID: SS20-04	**Sample Point ID**: SS20-05
	
Depth: 0 ft.	**Depth:** 0 ft.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Jason Crabtree

Signature: 

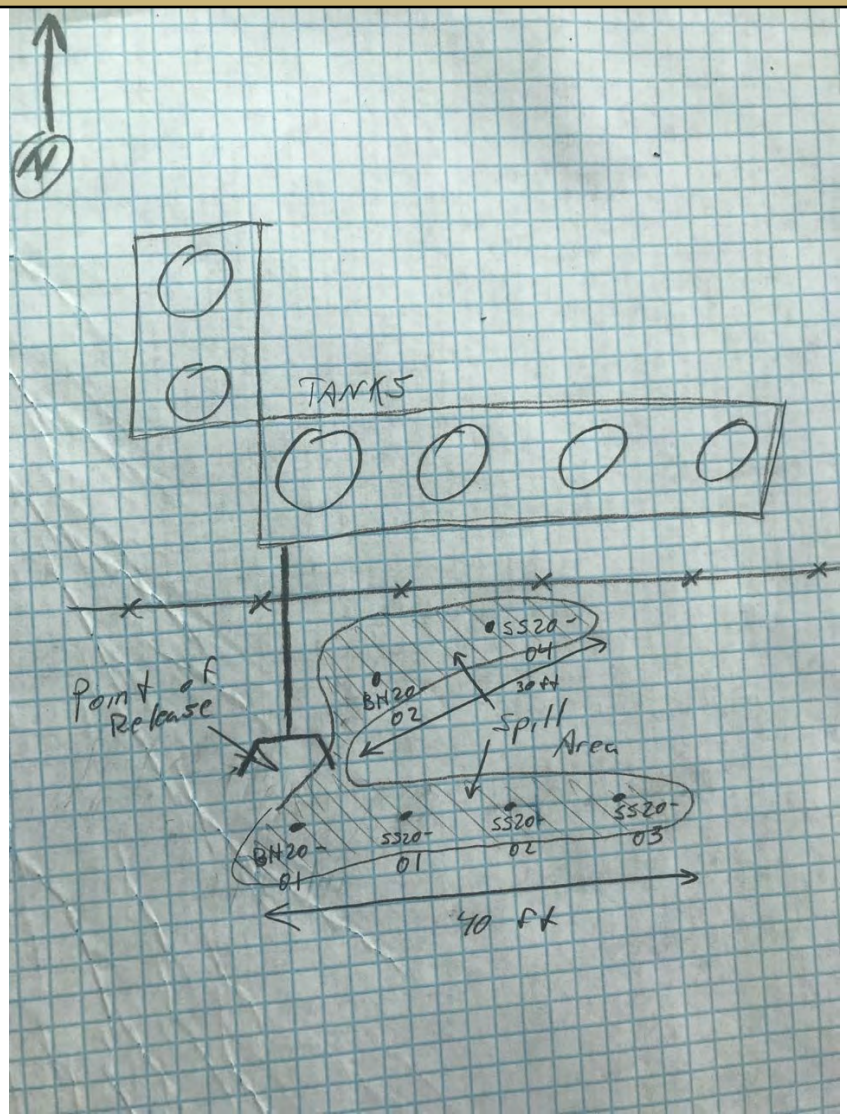
Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	4/17/2020
Site Location Name:	Caballo 9 State #001	Report Run Date:	4/17/2020 7:56 PM
Project Owner:	Amanda Davis	File (Project) #:	20E-00141
Project Manager:	Natalie Gordon	API #:	30-025-34577
Client Contact Name:	Amanda Davis	Reference	09/17/2019 - 7bbl PW Release
Client Contact Phone #:	(575) 748-0176		

Summary of Times	
Left Office	4/17/2020 8:30 AM
Arrived at Site	4/17/2020 9:34 AM
Departed Site	4/17/2020 11:30 AM
Returned to Office	4/17/2020 1:04 PM

Daily Site Visit Report

Site Sketch



Daily Site Visit Report

Summary of Daily Operations

9:41 Arrive on site.
Complete safety paperwork.
Obtain confirmatory samples.
Document in DFR.
Return to office.

Next Steps & Recommendations

1 Send confirmatory samples to lab for analysis

2 Close job

Sampling

BH20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321318, -103.481720	Yes

BH20-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0.5 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321379, -103.481726	Yes

Daily Site Visit Report

SS20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321350, -103.481691	Yes

SS20-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321354, -103.481645	Yes

SS20-03

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321354, -103.481597	Yes

SS20-04

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.					BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M)	✓	32.321412, -103.481662	Yes

Daily Site Visit Report

Site Photos

Viewing Direction: West

Spill area near point of release

Viewing Direction: West

Spill area east of point of release

Viewing Direction: North

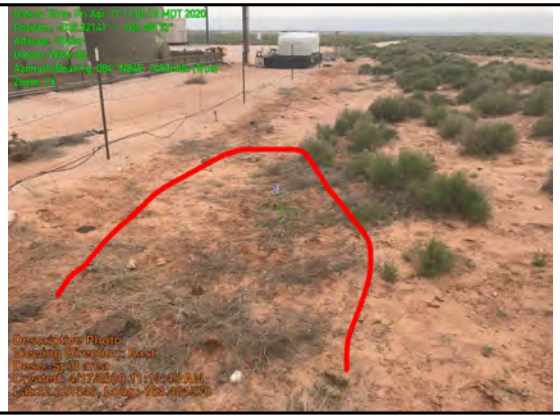
Point of release

Viewing Direction: Northeast

Spill area northeast of point of release

Daily Site Visit Report

Viewing Direction: East



Spill area

Daily Site Visit Report

Depth Sample Photos

Sample Point ID: BH20-01

Depth: 0.5 ft.

Sample Point ID: BH20-02

Depth: 0.5 ft.

Sample Point ID: SS20-01

Depth: 0 ft.

Sample Point ID: SS20-02

Depth: 0 ft.

Daily Site Visit Report

Sample Point ID: SS20-03	**Sample Point ID**: SS20-04
	
Depth: 0 ft.	**Depth:** 0 ft.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

ATTACHMENT 5

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Wednesday, April 15, 2020 2:07 PM
To: Natalie Gordon
Subject: Fwd: NRM1929540709: Caballo 9 State #001 (Devon) 48-hr Notification of Confirmatory sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Wed, Apr 15, 2020 at 12:47 PM
Subject: NRM1929540709: Caballo 9 State #001 (Devon) 48-hr Notification of Confirmatory sampling
To: EMNRD-OCD-District1spills <emnrd-ocd-district1spills@state.nm.us>, Bratcher, Mike, EMNRD <Mike.Bratcher@state.nm.us>, Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>, Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>, <rmann@slo.state.nm.us>
Cc: <tom.bynum@dvn.com>, <amanda.davis@dvn.com>, <Lupe.Carrasco@dvn.com>, <wesley.mathews@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Caballo 9 State #001 for the produced water release that occurred on September 17, 2019, incident tracking # NRM1929540709.

This work will be completed on behalf of Devon Energy Production Company.

On Friday, April 17, 2020 at approximately 12:00 p.m., Austin Harris of Vertex will be onsite to conduct confirmatory sampling. He can be reached at 432-250-5003. If you need directions to the site, please do not hesitate to contact him. 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

ATTACHMENT 6

Client Name: Devon Energy Production Company
Site Name: Caballo 9 State #001
NM OCD Tracking Number: NRM1929540709
Project #: 20E-00141-020
Lab Report: 2004901

Table 2. Confirmatory Sampling Laboratory Results - Depth to Groundwater >100 feet

Sample Description			Petroleum Hydrocarbons							Inorganic
			Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH20-01	0.5	April 17, 2020	<0.025	<0.224	<5.0	<9.7	<48	<14.7	<62.7	<60
BH20-02	0.5	April 17, 2020	<0.024	<.0.216	<4.8	<8.8	<44	<13.6	<57.6	140
SS20-01	0	April 17, 2020	<0.024	<0.220	<4.9	<9.5	<48	<14.4	<62.4	<60
SS20-02	0	April 17, 2020	<0.025	<0.225	<5.0	<9.9	<50	<14.9	<64.9	<59
SS20-03	0	April 17, 2020	<0.025	<0.225	<5.0	<9.9	<50	<14.9	<64.9	<59
SS20-04	0	April 17, 2020	<0.024	<0.215	<4.8	<9.5	<48	<14.3	<62.3	<59

"-" - Not applicable/assessed
Bold and shaded indicates exceedance outside of applied action level

ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 27, 2020

Natalie Gordon

Vertex Resource Group Ltd.
213 S. Mesa St
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX

RE: Caballo 9 State 1 OrderNo.: 2004901

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/21/2020 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH20-01 0.5'
Project: Caballo 9 State 1 **Collection Date:** 4/17/2020 10:00:00 AM
Lab ID: 2004901-001 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 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	4/24/2020 3:22:40 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2020 3:22:40 AM
Surr: DNOP	110	55.1-146		%Rec	1	4/24/2020 3:22:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/25/2020 11:01:50 PM
Surr: BFB	102	66.6-105		%Rec	1	4/25/2020 11:01:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	4/25/2020 11:01:50 PM
Toluene	ND	0.050		mg/Kg	1	4/25/2020 11:01:50 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/25/2020 11:01:50 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/25/2020 11:01:50 PM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/25/2020 11:01:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	ND	60		mg/Kg	20	4/24/2020 4:39:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** BH20-02 0.5'
Project: Caballo 9 State 1 **Collection Date:** 4/17/2020 10:05:00 AM
Lab ID: 2004901-002 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	4/24/2020 3:47:03 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/24/2020 3:47:03 AM
Surr: DNOP	141	55.1-146		%Rec	1	4/24/2020 3:47:03 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/26/2020 12:13:43 AM
Surr: BFB	107	66.6-105	S	%Rec	1	4/26/2020 12:13:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2020 12:13:43 AM
Toluene	ND	0.048		mg/Kg	1	4/26/2020 12:13:43 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/26/2020 12:13:43 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/26/2020 12:13:43 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	4/26/2020 12:13:43 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	140	60		mg/Kg	20	4/24/2020 5:41:36 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** SS20-01 0.0'
Project: Caballo 9 State 1 **Collection Date:** 4/17/2020 10:10:00 AM
Lab ID: 2004901-003 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 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	4/24/2020 4:11:21 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2020 4:11:21 AM
Surr: DNOP	101	55.1-146		%Rec	1	4/24/2020 4:11:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/26/2020 1:25:38 AM
Surr: BFB	107	66.6-105	S	%Rec	1	4/26/2020 1:25:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2020 1:25:38 AM
Toluene	ND	0.049		mg/Kg	1	4/26/2020 1:25:38 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/26/2020 1:25:38 AM
Xylenes, Total	ND	0.098		mg/Kg	1	4/26/2020 1:25:38 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	4/26/2020 1:25:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	ND	60		mg/Kg	20	4/24/2020 5:54:00 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** SS20-02 0.0'
Project: Caballo 9 State 1 **Collection Date:** 4/17/2020 10:20:00 AM
Lab ID: 2004901-004 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 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	4/24/2020 4:35:43 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/24/2020 4:35:43 AM
Surr: DNOP	98.2	55.1-146		%Rec	1	4/24/2020 4:35:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/26/2020 1:49:35 AM
Surr: BFB	107	66.6-105	S	%Rec	1	4/26/2020 1:49:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	4/26/2020 1:49:35 AM
Toluene	ND	0.050		mg/Kg	1	4/26/2020 1:49:35 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/26/2020 1:49:35 AM
Xylenes, Total	ND	0.10		mg/Kg	1	4/26/2020 1:49:35 AM
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	4/26/2020 1:49:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	ND	59		mg/Kg	20	4/24/2020 6:06:24 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd. **Client Sample ID:** SS20-03 0.0'
Project: Caballo 9 State 1 **Collection Date:** 4/17/2020 10:30:00 AM
Lab ID: 2004901-005 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 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	4/24/2020 4:59:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/24/2020 4:59:56 AM
Surr: DNOP	85.8	55.1-146		%Rec	1	4/24/2020 4:59:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/26/2020 2:13:27 AM
Surr: BFB	108	66.6-105	S	%Rec	1	4/26/2020 2:13:27 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	4/26/2020 2:13:27 AM
Toluene	ND	0.050		mg/Kg	1	4/26/2020 2:13:27 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/26/2020 2:13:27 AM
Xylenes, Total	ND	0.10		mg/Kg	1	4/26/2020 2:13:27 AM
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	4/26/2020 2:13:27 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	ND	59		mg/Kg	20	4/24/2020 6:18:49 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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2004901**
Date Reported: **4/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resource Group Ltd.
Client Sample ID: SS20-04 0.0'
Project: Caballo 9 State 1
Collection Date: 4/17/2020 10:40:00 AM
Lab ID: 2004901-006 **Matrix:** SOIL **Received Date:** 4/21/2020 11:05:00 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	4/24/2020 5:24:11 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2020 5:24:11 AM
Surr: DNOP	86.3	55.1-146		%Rec	1	4/24/2020 5:24:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/26/2020 2:37:22 AM
Surr: BFB	106	66.6-105	S	%Rec	1	4/26/2020 2:37:22 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	4/26/2020 2:37:22 AM
Toluene	ND	0.048		mg/Kg	1	4/26/2020 2:37:22 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/26/2020 2:37:22 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/26/2020 2:37:22 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	4/26/2020 2:37:22 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	ND	59		mg/Kg	20	4/24/2020 6:31:14 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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2004901**
27-Apr-20

Client: Vertex Resource Group Ltd.
Project: Caballo 9 State 1

Sample ID: **MB-52064** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **52064** RunNo: **68395**
Prep Date: **4/24/2020** Analysis Date: **4/24/2020** SeqNo: **2367045** Units: **mg/Kg**

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

Sample ID: **LCS-52064** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **52064** RunNo: **68395**
Prep Date: **4/24/2020** Analysis Date: **4/24/2020** SeqNo: **2367046** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.3	90	110			

Sample ID: **MB-52069** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **52069** RunNo: **68395**
Prep Date: **4/24/2020** Analysis Date: **4/24/2020** SeqNo: **2367078** Units: **mg/Kg**

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

Sample ID: **LCS-52069** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **52069** RunNo: **68395**
Prep Date: **4/24/2020** Analysis Date: **4/24/2020** SeqNo: **2367079** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2004901**
27-Apr-20

Client: Vertex Resource Group Ltd.
Project: Caballo 9 State 1

Sample ID: **LCS-52020** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **52020** RunNo: **68358**
Prep Date: **4/22/2020** Analysis Date: **4/23/2020** SeqNo: **2365975** 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	124	70	130			
Surr: DNOP	4.8		5.000		95.3	55.1	146			

Sample ID: **MB-52020** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **52020** RunNo: **68358**
Prep Date: **4/22/2020** Analysis Date: **4/23/2020** SeqNo: **2365977** 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	10		10.00		104	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2004901**
27-Apr-20

Client: Vertex Resource Group Ltd.
Project: Caballo 9 State 1

Sample ID: **mb-52013** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **52013** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/25/2020** SeqNo: **2367370** 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	1000		1000		104	66.6	105			

Sample ID: **lcs-52013** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **52013** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/25/2020** SeqNo: **2367371** 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	93.8	80	120			
Surr: BFB	1100		1000		113	66.6	105			S

Sample ID: **2004901-002ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH20-02 0.5'** Batch ID: **52013** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/26/2020** SeqNo: **2367374** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.7	23.70	0	98.8	80	120			
Surr: BFB	1100		947.9		118	66.6	105			S

Sample ID: **2004901-002amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH20-02 0.5'** Batch ID: **52013** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/26/2020** SeqNo: **2367375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.98	0	96.9	80	120	3.29	20	
Surr: BFB	1200		999.0		119	66.6	105	0	0	S

Sample ID: **mb-52018** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **52018** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/26/2020** SeqNo: **2367394** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	66.6	105			

Sample ID: **lcs-52018** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **52018** RunNo: **68422**
Prep Date: **4/22/2020** Analysis Date: **4/26/2020** SeqNo: **2367395** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		114	66.6	105			S

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2004901**
27-Apr-20

Client: Vertex Resource Group Ltd.
Project: Caballo 9 State 1

Sample ID: **mb-52013**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **52013**	RunNo: **68422**
Prep Date: **4/22/2020**	Analysis Date: **4/25/2020**	SeqNo: **2367461** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **LCS-52013**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **52013**	RunNo: **68422**
Prep Date: **4/22/2020**	Analysis Date: **4/25/2020**	SeqNo: **2367462** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.6	80	120			
Toluene	0.92	0.050	1.000	0	91.9	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.5	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.3	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: **2004901-001ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH20-01 0.5'**	Batch ID: **52013**	RunNo: **68422**
Prep Date: **4/22/2020**	Analysis Date: **4/25/2020**	SeqNo: **2367464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9950	0	88.1	78.5	119			
Toluene	0.91	0.050	0.9950	0	91.3	75.7	123			
Ethylbenzene	0.94	0.050	0.9950	0	94.3	74.3	126			
Xylenes, Total	2.8	0.10	2.985	0	94.7	72.9	130			
Surr: 4-Bromofluorobenzene	1.0		0.9950		104	80	120			

Sample ID: **2004901-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH20-01 0.5'**	Batch ID: **52013**	RunNo: **68422**
Prep Date: **4/22/2020**	Analysis Date: **4/25/2020**	SeqNo: **2367465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9872	0	89.6	78.5	119	0.917	20	
Toluene	0.92	0.049	0.9872	0	93.1	75.7	123	1.17	20	
Ethylbenzene	0.95	0.049	0.9872	0	96.4	74.3	126	1.43	20	
Xylenes, Total	2.9	0.099	2.962	0	96.3	72.9	130	0.813	20	
Surr: 4-Bromofluorobenzene	1.0		0.9872		106	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2004901**

27-Apr-20

Client: Vertex Resource Group Ltd.

Project: Caballo 9 State 1

Sample ID: **mb-52018**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **52018**	RunNo: **68422**							
Prep Date: **4/22/2020**	Analysis Date: **4/26/2020**	SeqNo: **2367486**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **LCS-52018**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **52018**	RunNo: **68422**							
Prep Date: **4/22/2020**	Analysis Date: **4/26/2020**	SeqNo: **2367487**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: VERTEX CARLSBAD Work Order Number: 2004901 RcptNo: 1

Received By: Desiree Dominguez 4/21/2020 11:05:00 AM DD

Completed By: Desiree Dominguez 4/21/2020 11:24:46 AM DD

Reviewed By: DAD 4/21/20

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° 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: EM 4/21/20

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.4	Good	Not Present			

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: Caballo 9 State 1

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: AUSTIN HARRIS

On Ice: ☑ Yes ☐ No

# of Coolers: 1

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2004901	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4-17-2020	1000	Soil	BH20-01 0.5'	6oz Jar	Ice	-001										
	1005		BH20-02 0.5'			-002										
	1010		SS20-01 0.0			-003										
	1020		SS20-02 0.0			-004										
	1030		SS20-03 0.0			-005										
	1040		SS20-04 0.0			-006										

Date	Time	Relinquished by	Received by	Via	Date	Time
4/20/20	1300	AUSTIN HARRIS				
4/20/20	1900			Courier	4/21/20	11:05

Remarks:

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.