May 3, 2023 Vertex Project #: 23E-01019

Spill Closure Report: Marlan Downey 09 ST TB
Section 9, Township 23 South, Range 35 East
API: 30-025-44201
County: Lea
Incident Report: nAPP2304525840

Prepared For: **Matador Production Company**
1500, 5400 LBJ Freeway
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 for a release of produced water due to a pin hole developing on a 2 inch line on the SWD pump at Marlan Down 09 ST TB, API 30-025-44201, Incident nAPP2304525840 (hereafter referred to as "Marlan"). This letter provides a description of the Spill Assessment and includes a request for Incident Closure. The spill area is located at N 32.326207, W -103.376430.

Background

The site is located approximately 14.71 miles southwest of Eunice, New Mexico (Google Inc., 2023). The legal location for the site is Section 9, Township 23 South and Range 35 East in Lea County, New Mexico. The spill area is located on private property. An aerial photograph and site schematic are included on Figure 1 (Attachment 1).

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site's surface geology is comprised primarily of Qep – Eolian and piedmont deposits (Holocene to middle Pleistocene) and is characterized as eolian sands and piedmont slope deposits. The Natural Resources Conservation Service *Web Soil Survey* characterizes the predominant soil texture on the site is Kermit soils and Dune land and Ratliff-Wink fine sandy loams. It tends to be well to excessively drained with low to very low runoff and low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

The surrounding landscape is associated with plains dunes at elevations of 3,000 to 4,400 feet above sea level. The climate is semi-arid, with annual precipitation ranging between 10 to 15 inches. Historically, the plant community has grassland aspect, dominated by black grama, dropseeds, and bluestems with scattered shinnery oak. Honey mesquite, broom snakeweed, sand sage and tobosa. Perennial and annual forb abundance and distribution are dependent on precipitation. Overgrazing and extended drought can reduce grass cover (United States Department of Agriculture, Natural Resources Conservation Service, 2023).

There is no surface water located at Marlan. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 Mexico Administrative Code (NMAC; New Mexico Oil Conservation Division, 2018), is the Jal Lake Park located approximately 18.9 miles southeast of Marlan (Google Inc., 2023). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Incident Description

The spill occurred on February 12, 2023, due to a pin hole developing on a 2 inch line on the SWD pump. The spill was reported on February 14, 2023, and involved the release of approximately 10.73 barrels (bbl.) of produced water on the engineered pad site. Approximately 2 bbl. of free fluid was removed during initial spill clean-up. The aerial image and characterization schematic is included on Figure 1 (Attachment 1). An initial characterization and laboratory analysis is included in Table 2 (Attachment 2). The daily field reports (DFRs) and site photographs are included in Attachment 3. The New Mexico Oil Conservation Division (NMOCD) C-141 Report: nAPP2304525840 is included in Attachment 4.

Closure Criteria Determination

The depth to groundwater was determined using information from the New Mexico Office of the State Engineer Water Rights Reporting System. A 0.5-mile search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 100 feet below ground surface (bgs) and 2.19 miles from the site (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2023). Documentation used in Closure Criteria Determination research is included in Attachment 5.

Closure Criteria Worksheet			
Site Name: Marlan Downey 09 ST TB			
Spill Coordinates:		**X: 32.326207**	**Y: -103.376430**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**100**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	99,976	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	99,976	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	34,957	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**	11,563	feet
	ii) Within 1000 feet of any fresh water well or spring	11,563	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	7,285	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
11	Soil Type	Kermit soils and Dune land, Ratliff-Wink fine sandy loams	
12	Ecological Classification	Loamy	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'

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

Table 1. Closure Criteria for Soils Impacted by a Release		
Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	**Constituent**	**Limit**
< 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS - Total dissolved solids, TPH - Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO), BTEX - Benzene, toluene, ethylbenzene, and xylenes

Remedial Actions Taken

An initial site inspection of the spill area was completed on February 27, 2023, which identified the area of the spill specified in the initial C-141 Report. Characterization samples were collected and submitted for laboratory analysis. Sample results are included in Table 2 (Attachment 2). The DFR associated with the site inspection is included in Attachment 3.

Remediation efforts began on April 3, 2023, and were completed on April 8, 2023. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of multiple sample points and consisted of analysis using a photo ionization detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and electroconductivity meter (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 5 feet bgs. Two side walls, north and south facing but parallel to a flowline on the northeast area of the excavation, were left in situ underneath the flowlines to prevent any potential damage to the infrastructure. The soils north and south of those sidewalls were also scraped out and removed by hand directly underneath the flowlines. Samples were collected from both wall portions to ensure no contamination remained. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility.

Notification that confirmatory samples were being collected was provided to the NMOCD on April 3, 2023, and is included in Attachment 6. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. A total of 65 samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 3 (Attachment 2) and the laboratory data reports are included in Attachment 7. All confirmatory samples collected and analyzed were below closure criteria for the site.

Closure Request

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

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

Monica Peppin, A.S.
PROJECT MANAGER, REPORTING

May 3, 2023
Date

Attachments

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

References

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

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

New Mexico Mining and Minerals Division. (2023). *Coal Mine Resources in New Mexico*. Retrieved from http://www.emnrd.state.nm.us/MMD/gismapminedata.html

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

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

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

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

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

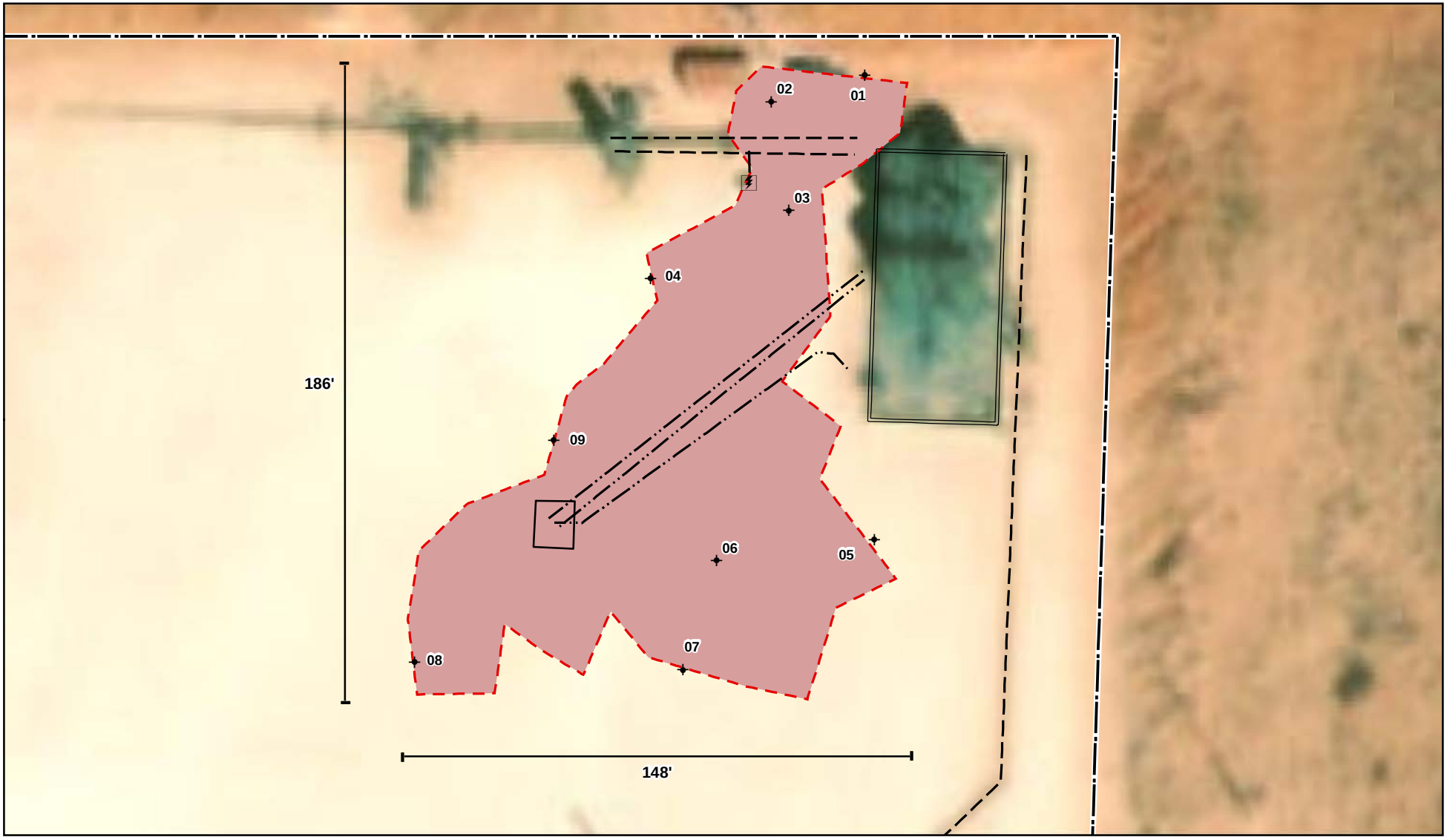
United States Fish and Wildlife Service. (2023). *National Wetlands Inventory Surface Waters and Wetland*. Retrieved from https://www.fws.gov/ wetlands/data/Mapper.html.

Limitations

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

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

ATTACHMENT 1



Borehole (Prefixed by "BH23-")
Electrical Box/Panel
Pipeline (Aboveground)
Pipeline (Underground)
Approximate Lease Boundary
Load pots
Release area (~13,120 sq. ft.)
Tank Battery Containment

VERTEX

0 5 10 20 30 40 Feet

Map Center:
Lat/Long: 32.325983, -103.376484

NAD 1983 UTM Zone 13N
Date: Mar 16/23

N

Characterization Schematic
Marlan Downey 09 ST TB

FIGURE:
1

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

Note: Background imagery collected from Esri, 2022. Lease boundary approximated from imagery. Features from GPS. Vertex Professional Services Ltd., 2023

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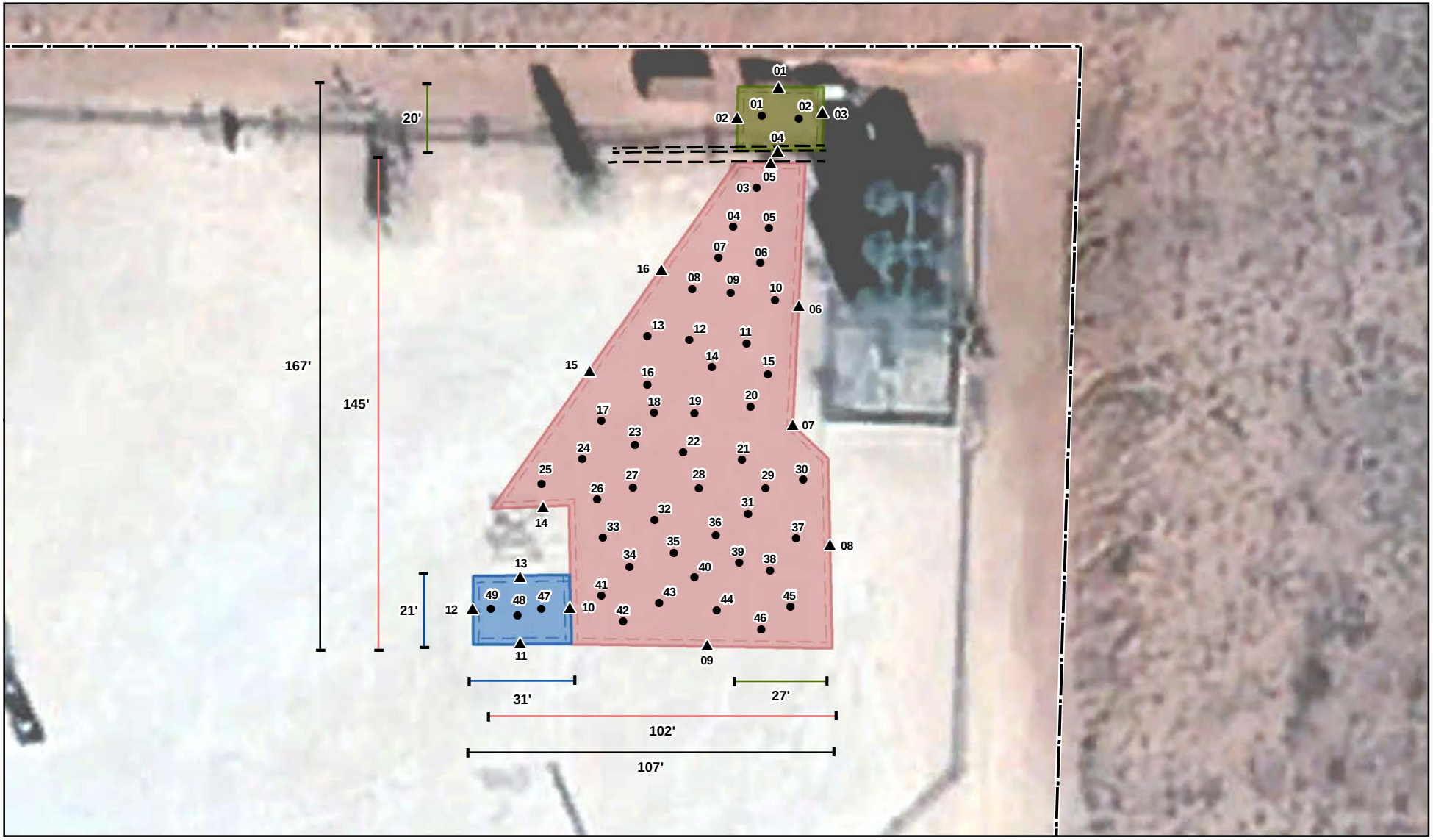
Document Path: G:\1-Projects_US PROJECT S\Matador Resources\23E-01019\Figure 1 Release Area Nina Cortell Federal Com TB (23E-01205).mxd



● Base Sample (Prefixed by "BS23")
▲ Wall Sample (Prefixed by "WS23")
Pipeline (Aboveground)
Approximate Lease Boundary
Excavation to 1' (~573 sq.ft.)
Excavation to 3' (~8,862 sq.ft.)
Excavation to 5' (~473 sq.ft.)

VERTEX

0 25 50 ft.

Map Center:
Lat/Long: 32.325988, -103.376460

NAD 1983 UTM Zone 13N
Date: May 01/23

N

Confirmation Schematic
Marlan Downey 09 ST TB

FIGURE:
2

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

Note: Imagery from Google Earth, 2020; georeferenced by Vertex. Features from GPS. Approximate lease boundary from imagery. Vertex Professional Services Ltd., 2023.

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Document Path: G:\1-Projects_US PROJECT S\Matador Resources\23E-01019\Figure 2 Confirmation Schematic_Marlan Downey 09 ST TB (23E-01019).mxd

ATTACHMENT 2

Table 2. Initial Characterization Sample Laboratory Results - Depth to Groundwater <50 feet bgs
Matador Production Company and Operator Group
Marlan Downey 09 ST TB
NMOCD Tracking #: nAPP2304525840
Project #: 23E-01019
Lab Report: 2303083

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	BTEX (Total) (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Motor Oil Range Organics (MRO) (mg/kg)	(GRO + DRO) (mg/kg)	Total Petroleum Hydrocarbons (TPH) (mg/kg)	Chloride Concentration (mg/kg)
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
Boreholes													
BH23-01	0	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7000**
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**790**
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1600**
BH23-02	0	February 28, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	**5300**
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**900**
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-03	0	February 28, 2023	ND	ND	ND	ND	ND	ND	61	ND	61	61	**7000**
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3500**
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-04	0	February 28, 2023	ND	ND	ND	0.18	0.18	ND	ND	ND	ND	ND	ND
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-05	0	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	300
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	February 28, 2023	ND	ND	ND	ND	ND	ND	68	ND	68	68	**7000**
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**760**
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-07	0	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-08	0	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-09	0	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1400**
	2	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	4	February 28, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)
ND - Not Detected at the Reporting Limit
- Denotes no standard/not analyzed
Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

Table 3. Confirmatory Sample Laboratory Results - Depth to Groundwater <50 feet bgs
Matador Production Company and Operator Group
Marlan Downey 09 ST TB
NMOCD Tracking #: nAPP2304525840
Project #: 23E-01019
Lab Report: 2304486

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
Excavation													
WS23-01	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
WS23-02	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
WS23-03	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
WS23-04	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	89	ND	89	89	200
WS23-05	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
WS23-06	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
WS23-07	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	11	ND	11	11	130
WS23-08	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	34	ND	34	34	210
WS23-09	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
WS23-10	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS23-11	0 - 5	April 8, 2023	ND	ND	ND	ND	ND	ND	20	ND	20	20	160
WS23-12	0 - 1	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WS23-13	0 - 1	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
WS23-14	0 - 3	April 8, 2023	ND	ND	ND	ND	ND	ND	27	ND	27	27	160
WS23-15	0 - 3	April 8, 2023	ND	ND	ND	ND	ND	ND	27	ND	27	27	190
WS23-16	0 - 3	April 8, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
BS23-01	5	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-02	5	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-03	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-04	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
BS23-05	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
BS23-06	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
BS23-07	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-08	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-09	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80
BS23-10	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-11	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100
BS23-12	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	86
BS23-13	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	68
BS23-14	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-15	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-16	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200
BS23-17	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-18	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	170
BS23-19	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
BS23-20	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190
BS23-21	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
BS23-22	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-23	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-24	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-25	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-26	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-27	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	75
BS23-28	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	72
BS23-29	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	66
BS23-30	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160
BS23-31	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	170
BS23-32	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	69
BS23-33	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82
BS23-34	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-35	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67
BS23-36	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	72
BS23-37	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	68

VERTEX

Table 3. Confirmatory Sample Laboratory Results - Depth to Groundwater <50 feet bgs
Matador Production Company and Operator Group
Marlan Downey 09 ST TB
NMOCD Tracking #: nAPP2304525840
Project #: 23E-01019
Lab Report: 2304486

Sample Description			Petroleum Hydrocarbons										Inorganic
Sample ID	Depth (ft)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Criteria	NMOCD - NMAC <50 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	-	100	600
	NMOCD - NMAC 51-100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	10000
	NMOCD - NMAC >100 ft 19.15.29 (2018)		10	-	-	-	50	-	-	-	1000	2500	20000
BS23-38	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-39	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
BS23-40	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67
BS23-41	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70
BS23-42	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-43	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	86
BS23-44	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	130
BS23-45	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BS23-46	3	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
BS23-47	1	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	170
BS23-48	1	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
BS23-49	1	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2022)
ND - Not Detected at the Reporting Limit
- Denotes no standard/not analyzed
Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

ATTACHMENT 3

Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	2/27/2023
Site Location Name:	Marlan Downey 09 St TB	Report Run Date:	3/1/2023 12:11 AM
Client Contact Name:	Arsenio Jones	API #:	30-025-44201
Client Contact Phone #:	(575)361-4333		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	2/27/2023 9:30 AM
Departed Site	2/27/2023 11:45 AM

Field Notes

9:44 Arrived on site and filled out paperwork.

9:47 Delineate release area. Sandy surrroundings and consists of caliche layer and hitting refusal at vertical depth of 3 feet bgs

9:48 Collection of one foot intervals to two feet then down to four feet bgs to show top four feet is clean or until refusal layer is hit

10:10 Arrived on site and filled out safety paperwork.

10:10 Conducted tailgate safety discussion.

12:09 Collected samples BH23-04 though BH23-09 at depths 0, 2, and 4 feet.

12:09 Conducted field screenings on samples.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: Northeast
	
Spill	Spill
Viewing Direction: East	**Viewing Direction**: Southwest
	
Spill by infrastructure.	Spill.

Daily Site Visit Report

Viewing Direction: West

Spill

Viewing Direction: West

Spill by infrastructure.

Viewing Direction: East

Oil lines.

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: East
	
Spill and one call area.	Sample hole.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Hunter Klein

Signature: 

Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	4/3/2023
Site Location Name:	Marlan Downey 09 St TB	Report Run Date:	4/19/2023 6:36 PM
Client Contact Name:	Arsenio Jones	API #:	30-025-44201
Client Contact Phone #:	(575)361-4333		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/3/2023 8:39 AM
Departed Site	

Field Notes

8:39 Begin excavation and hydrovac flow lines in area where excavation will be completed

9:15 Starting excavation to the south of flow lines until hydro vac arrived to spot lines

10:59 Spot check samples collected on base at 3 feet bgs and pot holing around outside of release area to determine extents of the walls. All samples coming back below criteria

11:44 Excavation ongoing. Spot checks at 3 feet bgs coming back clean

14:10 Slight berm left on top of flow lines to provide coverage of lines. Samples taken to verify dirt is clean being left behind

Next Steps & Recommendations

1. Finish excavation
2. Collect confirmation samples

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: North
	
Excavation area	Excavation
Viewing Direction: East	**Viewing Direction**: East
	
Excavation near flow lines	South end of excavation

Daily Site Visit Report

Viewing Direction: Northeast	**Viewing Direction**: East
	
Excavation along flow lines	Northern excavation
Viewing Direction: South	**Viewing Direction**: North
	
Excavation area	Excavation area

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: Northeast
	
Excavation area	Excavation area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Monica Peppin

Signature: 
Signature

ATTACHMENT 4

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	nAPP2304525840
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Matador Production Company	OGRID 228937
Contact Name Clinton Talley	Contact Telephone 337-319-8398
Contact email clinton.talley@matadorresources.com	Incident # *(assigned by OCD)* nAPP2304525840
Contact mailing address 5400 LBJ Freeway, Suite 1500 Dallas, Texas 75240	

Location of Release Source

Latitude 32.326207 Longitude -103.376430
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Marlan Downey 09 ST TB	Site Type CTB
Date Release Discovered 2/12/2023	API# *(if applicable)* 30-025-44201

Unit Letter	Section	Township	Range	County
D	9	23S	35E	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) 10.73	Volume Recovered (bbls) 2
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

2" line on SWD pump developed pin hole

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304525840
District RP	
Facility ID	
Application ID	

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

Initial Response

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

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

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

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Clinton Talley Title: RES Specialist

Signature: Clint Talley Date: 5/8/2023

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304525840
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304525840
District RP	
Facility ID	
Application ID	

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

Printed Name: Clinton Talley Title: RES Specialist

Signature: Clint Talley Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/08/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304525840
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

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

Printed Name: Clinton Talley Title: RES Specialist

Signature: Clint Talley Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/08/2023

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304525840
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: Clinton Talley Title: RES Specialist

Signature: Clint Talley Date: 5/8/2023

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

OCD Only

Received by: Jocelyn Harimon Date: 05/08/2023

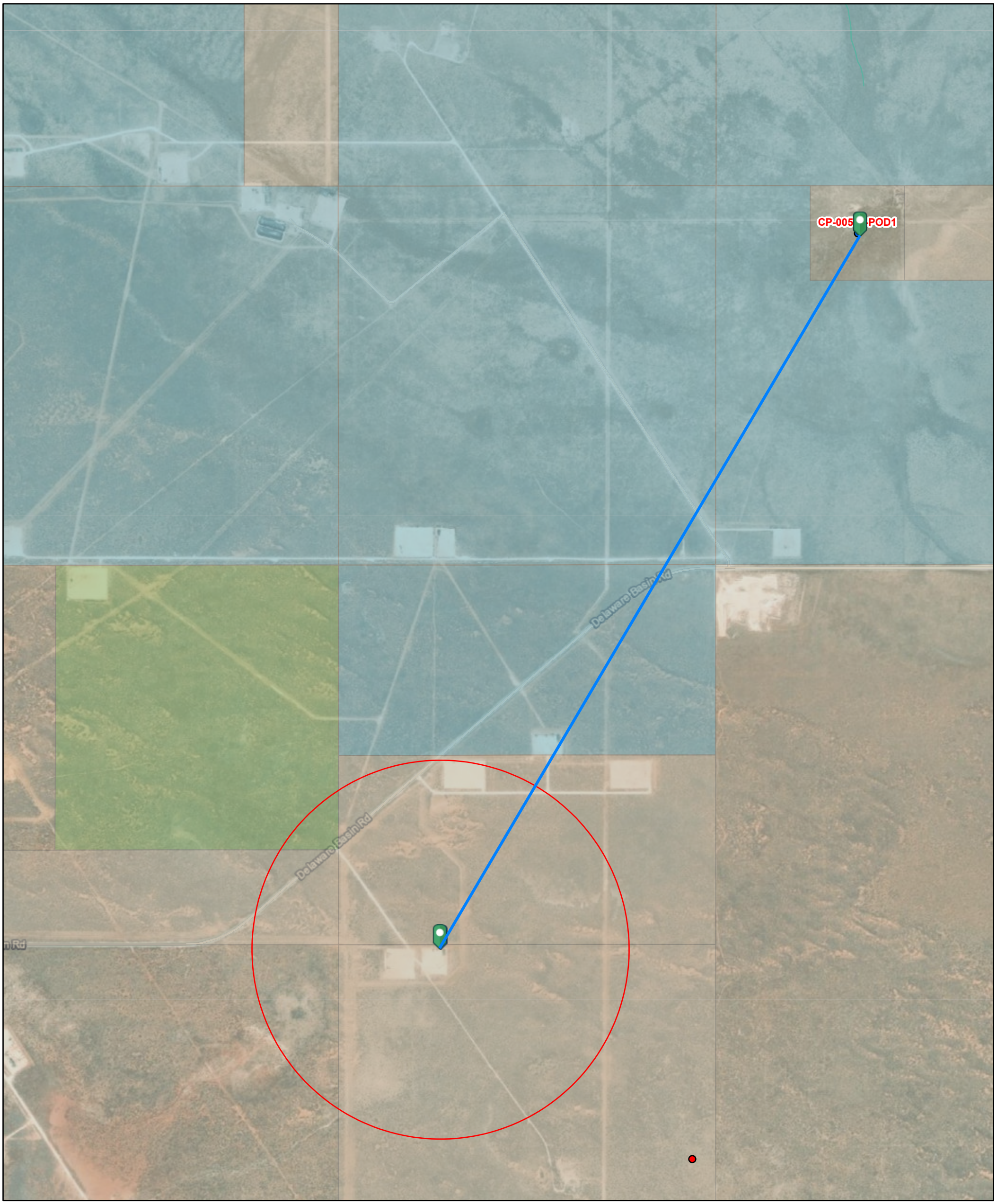
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by: Nelson Velez Date: 07/27/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

ATTACHMENT 5

Marlan Downey 09 ST TB



2/14/2023, 3:53:21 PM

Override 1

GIS WATERS PODs

Active

Plugged

OSE District Boundary

Water Right Regulations

Closure Area

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

NHD Flowlines

Stream River

SiteBoundaries

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

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

Web Generated Map
Map is generated by web users.

New Mexico Office of the State Engineer
Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 00594 POD1		2	1	34	22S	35E	654553	3580819*

Driller License: 122 **Driller Company:** UNKNOWN

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 3 GPM

Casing Size: 6.63 **Depth Well:** 98 feet **Depth Water:**

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Marlan Downey 09 ST TB

February 14, 2023

Wetlands

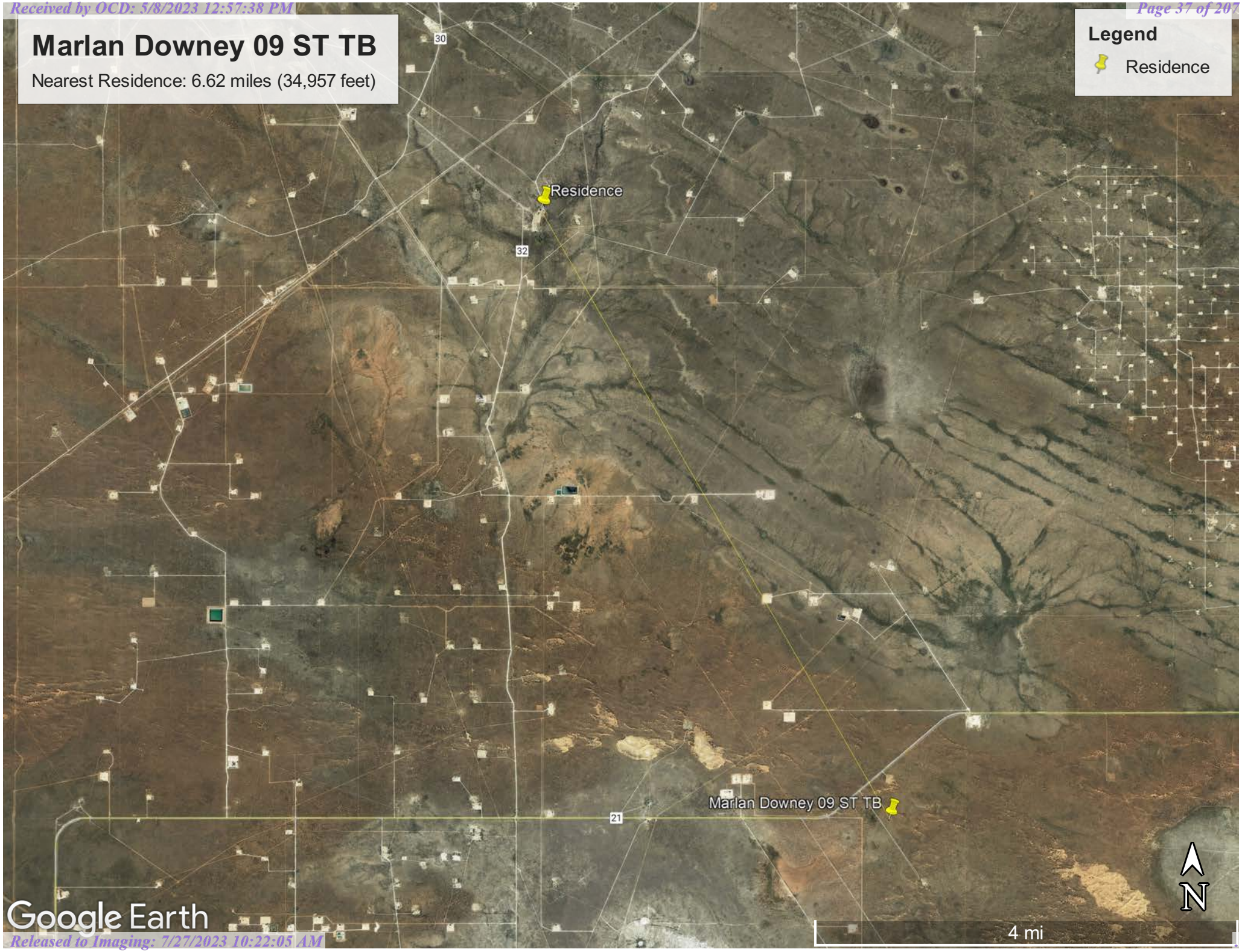
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

Marlan Downey 09 ST TB

Nearest Residence: 6.62 miles (34,957 feet)



New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: CP 00594 **Subbasin:** CP **Cross Reference:** -

Primary Purpose: PLS NON 72-12-1 LIVESTOCK WATERING

Primary Status: DCL DECLARATION

Total Acres: 0 **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: THE MERCHANT LIVESTOCK COMPANY

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	546659	DCL 1979-04-17	DCL	PRC	CP 00594	T	0	3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
CP 00594 POD1		Shallow	2	1		34	22S	35E	654553	3580819*	

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

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	
12/31/1911	DCL	0	3	CP 00594 POD1	Shallow

Place of Use

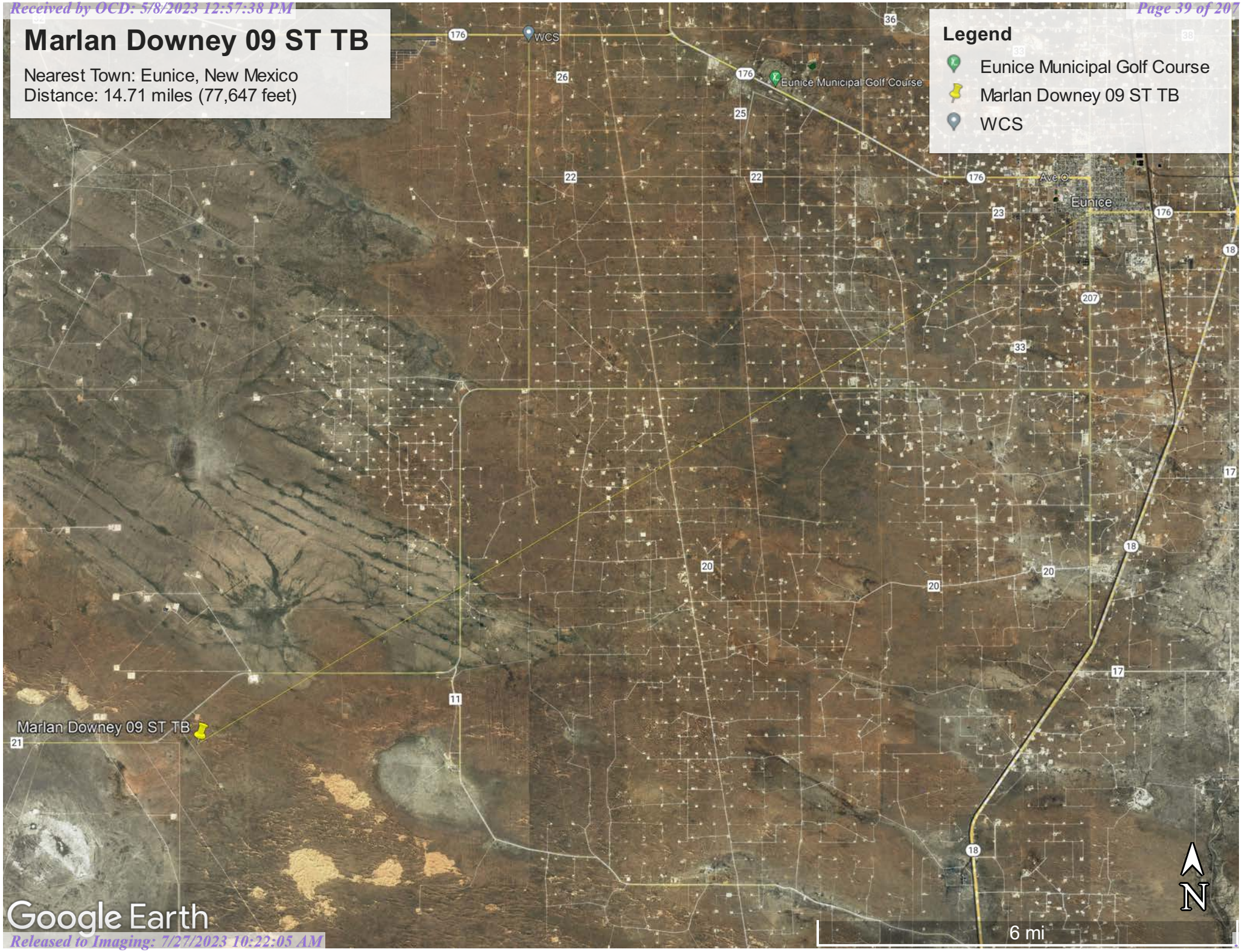
Q 256	Q 64	Q16	Q4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
							0	3		PLS	12/31/1911	DCL	NO PLACE OF USE GIVEN

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	3		PLS	12/31/1911	GW	

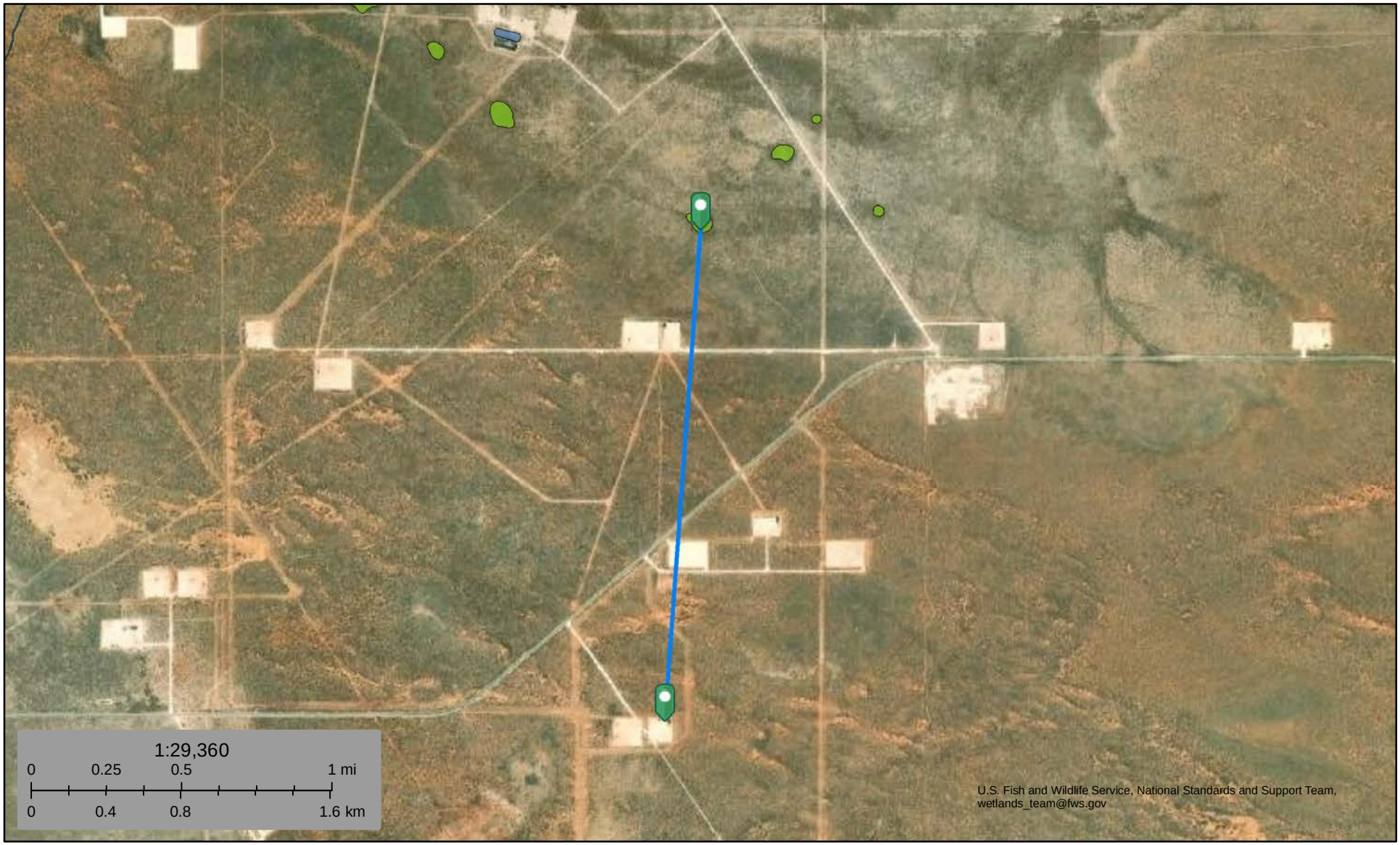
Marlan Downey 09 ST TB

Nearest Town: Eunice, New Mexico
Distance: 14.71 miles (77,647 feet)



U.S. Fish and Wildlife Service
National Wetlands Inventory

Marlan Downey 09 ST TB



February 14, 2023

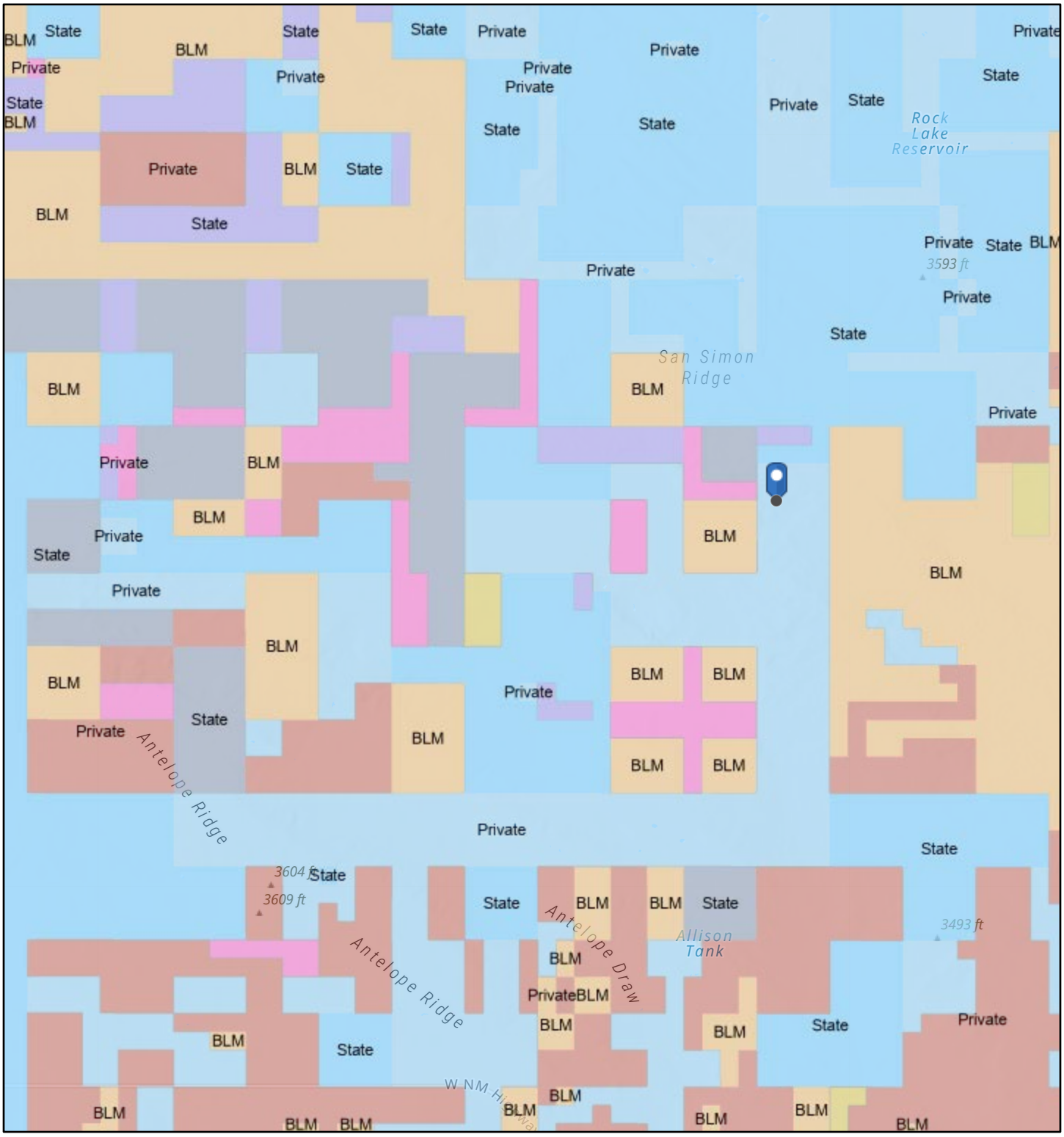
Wetlands

- 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

Marlan Downey 09 ST TB



2/14/2023, 3:37:35 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Mineral Ownership

- A-All minerals are owned by U.S.
- N-No minerals are owned by the U.S.
- O-Only oil and gas are owned by the U.S.
- T-Other minerals are owned by the U.S.

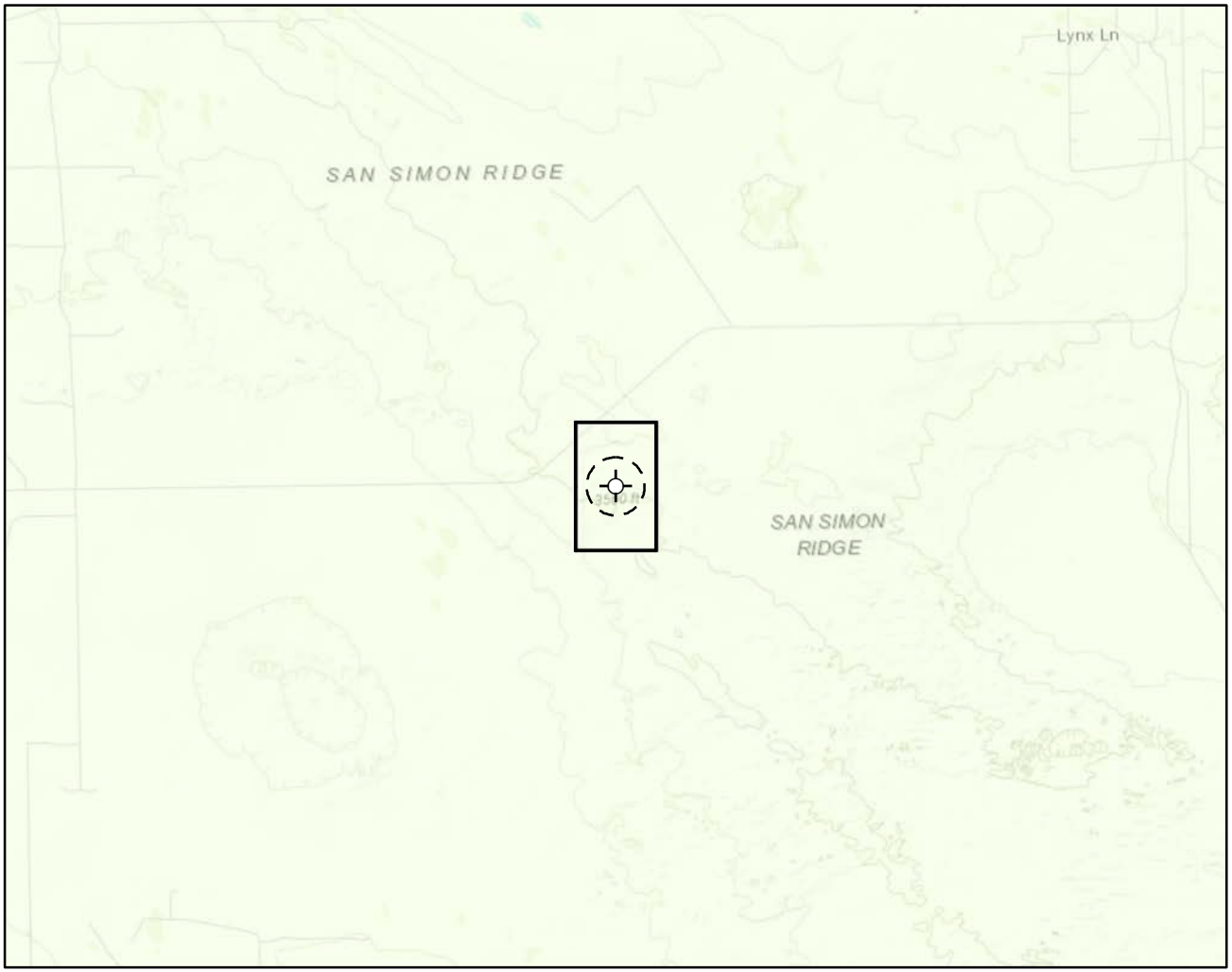
Land Ownership

- BLM
- P
- S

U.S. BLM, Esri, NASA, NGA, USGS, NM Coal Mine Reclamation Program, NM EMNRD, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

EMNRD MMD GIS Coordinator

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



Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.326000, -103.376430

NAD 1983 UTM Zone 13N
Date: Feb 17/23

N

Karst Potential Schematic
Marlan Downey 09 ST TB

FIGURE:
X

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

Note: Inset Map, ESRI 2022; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Matador Resources\23E-01019\Figure X - Karst Potential Schematic (Marlan Downey 09 ST TB).mxd

National Flood Hazard Layer FIRMette

FEMA

103°22'54"W 32°19'50"N

103°22'16"W 32°19'19"N

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

1:6,000

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

Legend

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

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

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

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/14/2023 at 5:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Lea County, New Mexico

Map Scale: 1:1,060 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KM	Kermit soils and Dune land, 0 to 12 percent slopes	4.6	91.8%
MN	Ratliff-Wink fine sandy loams	0.4	8.2%
Totals for Area of Interest		**5.0**	**100.0%**

Lea County, New Mexico

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

Map Unit Setting

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

Map Unit Composition

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

Description of Kermit

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BC022NM - Sandhills
Hydric soil rating: No

Description of Dune Land

Setting

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

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 60 inches: fine sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Palomas

Percent of map unit: 3 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Pyote

Percent of map unit: 3 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Wink

Percent of map unit: 2 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Maljamar

Percent of map unit: 2 percent
Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

Data Source Information

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

Lea County, New Mexico

MN—Ratliff-Wink fine sandy loams

Map Unit Setting

National map unit symbol: dmqf
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ratliff and similar soils: 45 percent
Wink and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ratliff

Setting

Landform: Plains
Landform position (three-dimensional): Dip
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 4 inches: fine sandy loam
Bw - 4 to 22 inches: clay loam
Bk - 22 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

Description of Wink

Setting

Landform: Plains
Landform position (three-dimensional): Dip
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous sandy alluvium and/or calcareous sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 12 inches: fine sandy loam
Bk - 12 to 23 inches: sandy loam
BCk - 23 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): 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 content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD004NM - Sandy
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 6 percent
Ecological site: R070BC022NM - Sandhills
Hydric soil rating: No

Maljamar
Percent of map unit: 5 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Palomas
Percent of map unit: 4 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Data Source Information

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

USDA Natural Resources Conservation Service

Ecological site R070BD003NM
Loamy Sand

Accessed: 02/14/2023

General information

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

Figure 1. Mapped extent

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

Associated sites

R070BD004NM	**Sandy** Sandy
R070BD005NM	**Deep Sand** Deep Sand

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes.

The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period for cool season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

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

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

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

Characteristic soils are:
Maljamar
Berino
Parjarito
Palomas
Wink
Pyote

Table 4. Representative soil features

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid

Soil depth	40–72 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–7 in
Calcium carbonate equivalent (0-40in)	3–40%
Electrical conductivity (0-40in)	2–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

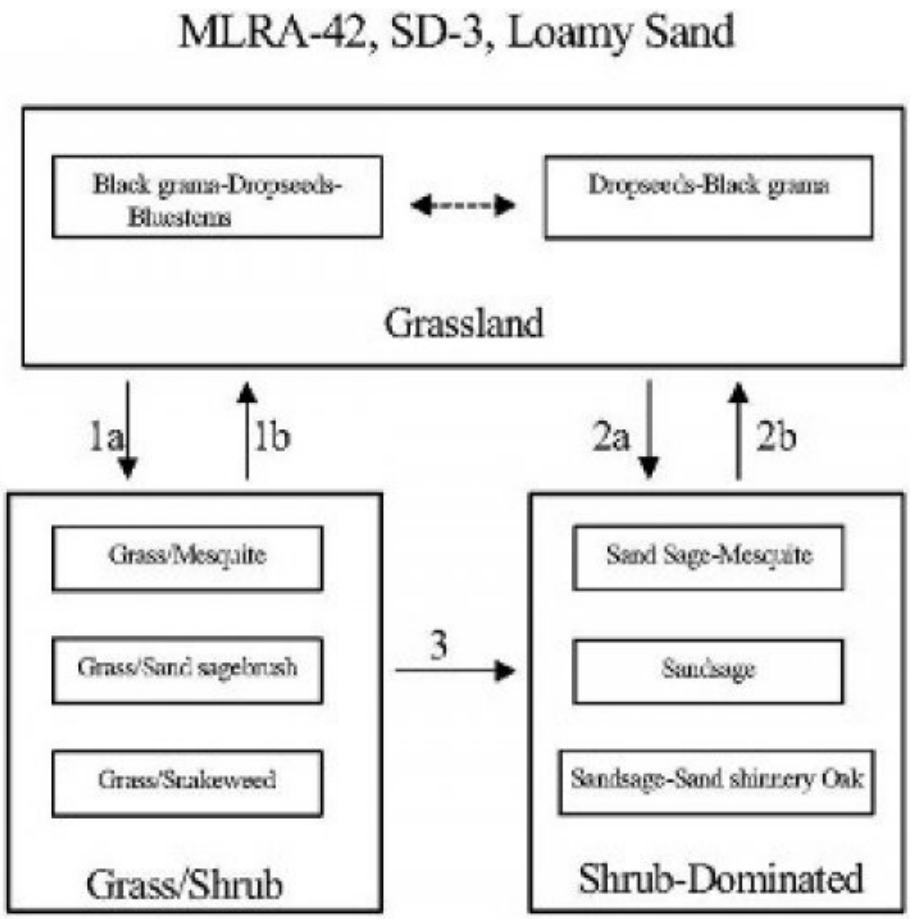
Overview

The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-dominated historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram):



1a. Drought, over grazing, fire suppression.
1b. Brush control, prescribed grazing

2.a Severe loss of grass cover, fire suppression, erosion.
2b. Brush control, seeding, prescribed grazing.

3. Continued loss of grass cover, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil

surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species. Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
Total	**650**	**1225**	**1800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 5. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

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

State 2
Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub State: The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971). Diagnosis: This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution. Transition to Grass/Shrub State (1a): The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984). Key indicators of approach to transition: • Loss of black grama cover • Surface soil erosion • Bare patch expansion • Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances Transition to Historic Plant Community (1b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state's primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an

aggressive rhizome system. Shinnery oak's extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986). Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state. Key indicators of approach to transition: • Severe loss of grass species cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite abundance Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state. Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite. Key indicators of approach to transition: • Continual loss of dropseeds/threeawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threeawn and mesquite/snakeweed abundance

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			61–123	
	little bluestem	SCSC	*Schizachyrium scoparium*	61–123	–
2	**Warm Season**			37–61	
	sand bluestem	ANHA	*Andropogon hallii*	37–61	–
3	**Warm Season**			37–61	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	37–61	–
	silver bluestem	BOSA	*Bothriochloa saccharoides*	37–61	–
4	**Warm Season**			123–184	
	black grama	BOER4	*Bouteloua eriopoda*	123–184	–
	bush muhly	MUPO2	*Muhlenbergia porteri*	123–184	–
5	**Warm Season**			123–184	
	thin paspalum	PASE5	*Paspalum setaceum*	123–184	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	123–184	–
	fringed signalgrass	URCI	*Urochloa ciliatissima*	123–184	–
6	**Warm Season**			123–184	
	spike dropseed	SPCO4	*Sporobolus contractus*	123–184	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	123–184	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	123–184	–
7	**Warm Season**			61–123	
	hooded windmill grass	CHCU2	*Chloris cucullata*	61–123	–
	Arizona cottontop	DICA8	*Digitaria californica*	61–123	–
9	**Other Perennial Grasses**			37–61	
	Grass, perennial	2GP	*Grass, perennial*	37–61	–
Shrub/Vine					
8	**Warm Season**			37–61	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	37–61	–
	giant dropseed	SPGI	*Sporobolus giganteus*	37–61	–
10	**Shrub**			61–123	

	sand sagebrush	ARFI2	*Artemisia filifolia*	61–123	–
	Havard oak	QUHA3	*Quercus havardii*	61–123	–
11	**Shrub**			34–61	
	fourwing saltbush	ATCA2	*Atriplex canescens*	37–61	–
	featherplume	DAFO	*Dalea formosa*	37–61	–
12	**Shrub**			37–61	
	jointfir	EPHED	*Ephedra*	37–61	–
	littleleaf ratany	KRER	*Krameria erecta*	37–61	–
13	**Other Shrubs**			37–61	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	37–61	–
Forb					
14	**Forb**			61–123	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	61–123	–
	Indian blanket	GAPU	*Gaillardia pulchella*	61–123	–
	globemallow	SPHAE	*Sphaeralcea*	61–123	–
15	**Forb**			12–37	
	woolly groundsel	PACA15	*Packera cana*	12–37	–
16	**Forb**			61–123	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	61–123	–
	woolly plantain	PLPA2	*Plantago patagonica*	61–123	–
17	**Other Forbs**			37–61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	37–61	–

Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord’s kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.
Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson’s hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Berino B
Kinco A
Maljamar B
Pajarito B
Palomas B
Wink B
Pyote A

Recreational uses

This site offers recreation potential for hiking, borseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, blsck grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shinery oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.3 – 3.5
75 – 51 3.0 – 4.5
50 – 26 4.6 – 9.0
25 – 0 9.1 +

Inventory data references

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

Other references

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Contributors

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Rangeland health reference sheet

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

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

Indicators

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

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

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

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

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

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

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

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

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

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

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

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

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

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

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

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

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17. **Perennial plant reproductive capability:**

USDA Natural Resources Conservation Service

Ecological site R070BC007NM
Loamy

Accessed: 02/14/2023

General information

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

Figure 1. Mapped extent

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

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on uplands landforms, mainly on hill slopes, ridges, plains, terraces and some fan remnants. Slopes range from 1 to 5 percent and average about 3 percent. Average annual precipitation is about 8 to 14 inches. Elevations range from 2,842 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Terrace (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–5,000 ft
Slope	0–5%
Aspect	E, S, W

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity short duration thunderstorms.

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

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

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest in January through June rapidly drying out the soil during a critical time for cool season plant growth.

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

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced by wetland or streams.

Soil features

The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches.

Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate. The Atoka, Reeves, Russler, Milner soils may have highr amounts of CaC03, ranging as high as 40 percent in the subsoil. Rock fragments range fro 5 to 50 percent in the subsoil. Reeves, Rusler, Milner, Holloman soils will have 40 to 80 percent gypsum in the underlying material.

Maximum and minimum values listed below represent the characteristic soils for this site.

Characteristic Soils:

Atoka (petrocalcic)
Bigetty
Reagan
Reakor
Reeves (gypsum)
Russler (gypsum)
Largo
Russler (gypsum)
Largo
Berino
Tinney
Midessa
Ratliff
Holloman (gypsum)
Milner (gypsum)

Table 4. Representative soil features

Surface texture	(1) Loam (2) Very fine sandy loam (3) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to slow
Soil depth	30–72 in

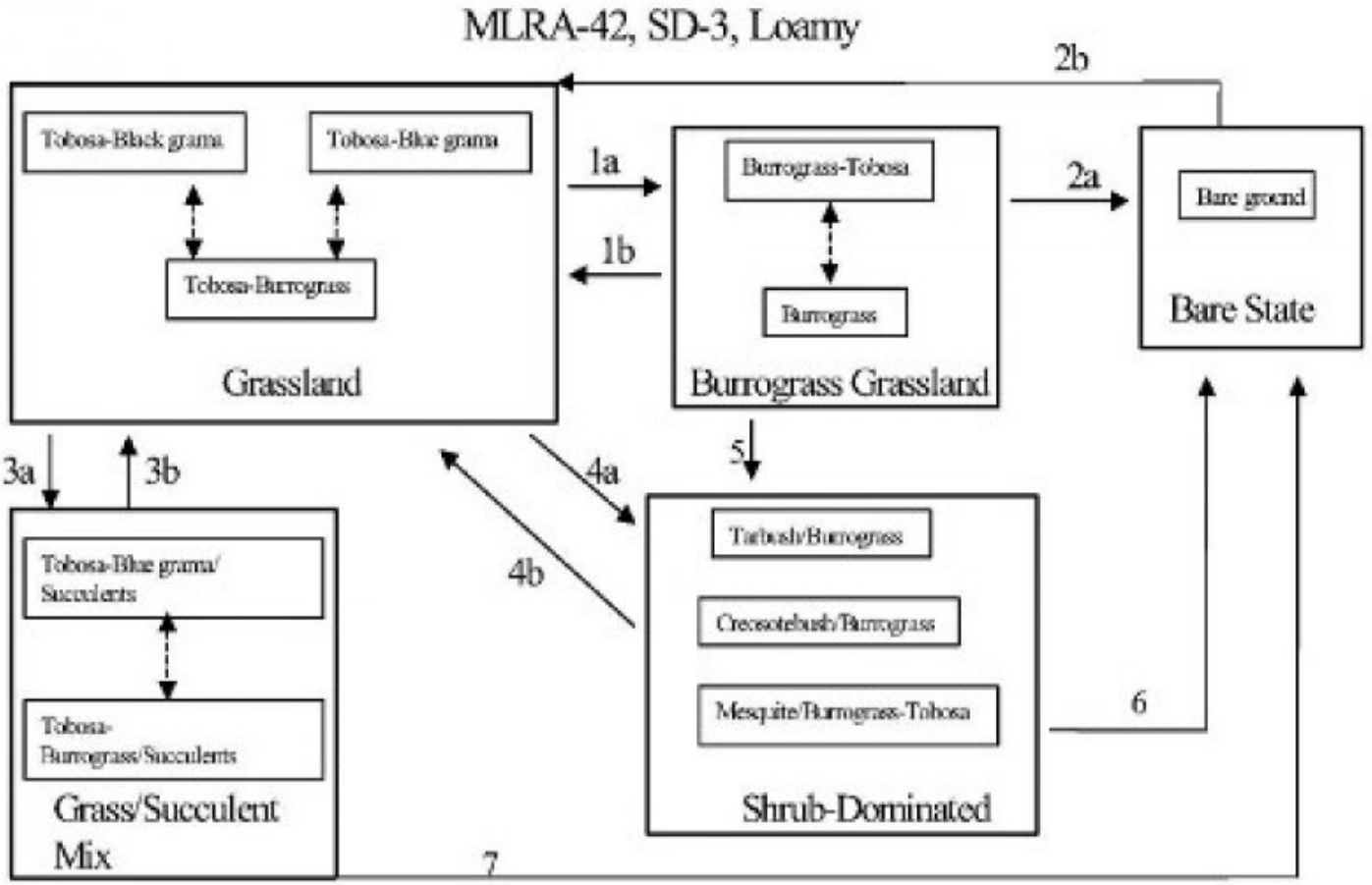
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–12 in
Calcium carbonate equivalent (0-40in)	0–10%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–6
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Overview: The Loamy site is associated with the Gyp Upland ecological site with which it intergrades. There is a pronounced increase in alkali sacaton along this interface. The loamy site is also associated with the Gravelly and Shallow ecological sites from which it receives run-on water. The Draw site often dissects Loamy sites and is distinguished from the Loamy site by increased production or greater densities of woody species. The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Tobosa, black grama and blue grama are the dominant species. Retrogression within this state is characterized by a decrease in black and blue grama and an increase in burrograss. Continuous overgrazing and drought can initiate a transition to a Burrograss- Grassland state. Continued reduction in grass cover and resulting infiltration problems may eventually effect a change to a Bare State, with very little or no remaining grass cover. Alternatively, creosotebush, tarbush or mesquite may expand or invade. Transitions back to a Grassland State from a Bare or Shrub-Dominated state are costly and may not be economically feasible. Decreased fire frequency may play a part in the transition to the Grass/Succulent Mix state with increased amounts of cholla and prickly pear.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Soil drying, overgrazing, drought, soil surface sealing. 1b. Restore natural overland flow, increase infiltration, prescribed grazing.

2a. Severe reduction in cover, soil surface sealing, decreased infiltration, erosion. 2b. Restore hydrology, break up physical crust, range seeding, prescribed grazing.

3a. Lack of fire, overgrazing, hail storms or other physical disturbance, drought. 3b. Prescribed fire, brush control, prescribed grazing.

4a. Seed dispersal of shrubs, persistent loss of grass cover, competition by shrubs, lack of fire. 4b. Brush control, range seeding -dependent on amount of grass (seed bank) remaining.

5. Loss of grass cover, seed dispersal of shrubs, competition by shrubs.

6. & 7. Brush control with continued loss of grass cover, soil sealing, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

State Containing Historic Climax Plant Community Grassland: The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. There are a variety of perennial forbs and their production varies widely by season and year. Globemallow, verbena, groundsels, croton and filaree are forbs commonly found on this site. Fourwing saltbush and winterfat are two of the more palatable shrubs. The Loamy ecological site encompasses a

wide variety of soils, with surface textures ranging from sandy loams to clay loams. Soil depths range from shallow to very deep and can include sub surface features such as calcic, petrocalcic, and gypsic horizons. These variations cause differences in plant community composition and dynamics. Black grama is found at highest densities on coarser textured sandy loams, with blue grama preferring finer textured loam and silt loam, and tobosa favoring lower landscape positions and loam to clay loam surface textures. Burrograss may often be the dominant grass species on silty soils, perhaps in part due to the seedlings ability to auger into and establish on physically crusted soils. Gypsum influenced soils typically have greater amounts of tobosa, burrograss, and ephedra. There is greater representation of sideoats and vine mesquite within the tobosa-blue grama community. Retrogression under continuous heavy grazing results in a decrease of black grama, blue grama, sideoats grama, plains bristlegrass, bush muhly, cane bluestem, vine mesquite, winterfat, and fourwing saltbush. Species such as burrograss, threeawns, sand dropseed, sand muhly, and broom snakeweed increase under continuous heavy grazing or prolonged periods of drought. Under continued retrogression burrograss can completely dominate the site. Creosotebush, tarbush, and mesquite, can also dominate. Cholla and prickly pear can increase on areas that are disturbed or overgrazed. Diagnosis: Tobosa, black grama, and blue grama are the dominant species. Grass cover is uniformly distributed with few large bare areas. Shrubs are sparse and evenly distributed. Slopes range from level to gently sloping and usually display limited evidence of active rills and gully formation if plant cover remains intact. Litter movement associated with overland flow is limited to smaller size class litter and short distances. Other shrubs include: yucca, mesquite, tarbush, cholla and creosote bush. Other forbs include: desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, Indian blanket flower, groundcherry, deerstongue, and rayless goldenrod.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	585	833	1080
Forb	39	55	72
Shrub/Vine	26	37	48
Total	**650**	**925**	**1200**

Table 6. Ground cover

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

Figure 5. Plant community growth curve (percent production by month). NM2807, R042XC007NM Loamy HCPC. R042XC007NM Loamy HCPC Warm Season Plant Community..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	10	10	25	30	15	5	0	0

State 2

Burrograss-Grassland

Community 2.1
Burrograss-Grassland

Burrograss-Grassland: Changes in hydrology resulting in decreased available soil moisture, reduces grass cover and increases bare ground. Burrograss is the dominant grass. Tobosa cover is variable and can range from sizeable areas to small patches occupying only depressions or the lowest and wettest positions within the site. Threeawns, ear muhly, sand muhly, and fluffgrass occur at increased densities compared to the grassland state. Shrub densities may increase especially mesquite, creosotebush or tarbush. Retrogression within this state is characterized by a further decrease in grass cover and increased bare ground. Further deterioration of this site can result in the transition to a bare state or becoming shrub dominated. Diagnosis: Burrograss is the dominant species. Grass cover is no longer uniformly distributed, instead tending to be patchy with large areas of bare ground present. Physical crusts are present in bare areas reducing infiltration and suppressing seedling establishment by any grass species other than burrograss. Transition to Burrograss-Grassland (1a): Transitions from grassland to a burrograss-grassland state may occur due to changes in hydrology. Gullies, roads or obstructions that alter natural water flow patterns may cause this transition. Changes in surface hydrology may also occur due to overgrazing or drought. The reduction in grass cover promotes increased soil physical crusts and reduces infiltration. 5 Key indicators of approach to transition: ? Diversion of overland flow resulting in decreased soil moisture. ? Increase in amount of burrograss cover ? Reduction in grass cover and increase in size and frequency of bare patches. ? Formation of physical crusts—indicating reduced infiltration. ? Evidence of litter movement—indicating loss or redistribution of organic matter. Transition back to Grassland (1b) The natural hydrology of the site must be returned. Culverts, turnouts, or rerouting roads may help re-establish natural overland flow, if roads or trails have altered the hydrology. Erosion control structures or shaping and filling gullies may help regain natural flow patterns and establish vegetation if the flow has been channeled. Breaking up physical crusts by soil disturbance may promote infiltration and seedling emergence. Allow natural revegetation to take place. Prescribed grazing will help ensure proper forage utilization and reduce grass loss due to grazing.

State 3
Bare State

Community 3.1
Bare State

Bare State: Extremely low ground cover, soil degradation and erosion characterize this state. Very little vegetation remains. Burrograss is the dominant grass and cover is extremely patchy. Physical soil crusts are extensive. Erosion and resource depletion increase as site degrades. Diagnosis: Very little cover remains. Erosion is evident by soil sealing, water flow patterns, pedestals or terracettes. Rills and gullies may be present and active. Transition to Bare State (2a): Extended drought, continuous heavy grazing, or other disturbance that severely depletes grass cover can effect this transition. As grass cover decreases, sheet flow and erosion increase, and physical soil crusts form, thereby further reducing infiltration. Key indicators of approach to transition: ? Continued reduction in grass cover. ? Increased soil surface sealing. ? Increased erosion. ? Reduced aggregate stability in bare areas. Transition back to Grassland (2b) Restore the hydrology, see (1a). With the extent of grass loss range seeding may be necessary. Utilizing livestock or mechanical means to break up the physical crusts may increase infiltration and aid seedling establishment. Prescribed grazing will help ensure adequate deferment period following seeding, and proper forage utilization once the grass stand is well established. The degree to which this site is capable of recovery depends on the restoration of hydrology, extent of degradation to soil resources, and adequate rainfall necessary to establish grasses.

State 4
Grass/Succulent Mix

Community 4.1
Grass/Succulent Mix

Grass / Succulent Mix: Increased representations of succulents characterize this site. Increased densities of cholla or pricklypear is recognized as a management concern, but their impact on grass production is unclear. Light to

medium cholla or prickly pear infestation doesn't seem to greatly reduce grass production, however it limits access to palatable grasses and interferes with livestock movement and handling. Tobosa and blue grama are the dominant species on this site. Retrogression within this site is characterized by a decrease in blue grama and an increase in succulents, tobosa and burrograss. Diagnosis: Cholla or prickly pear is found at increased densities. Grass cover is variable ranging from uniformly distributed to patchy with frequent areas of bare ground present. Tobosa or blue grama is the dominant grass species. Transition to Grass/Succulent Mix (3a): If fire was historically a part of desert grassland ecosystem and played a role in suppressing seedlings of shrubs and succulents, then fire suppression may favor the increase of succulents.1 Heavy grazing by livestock or other physical disturbances may help disseminate seed and increase the establishment of succulents. Areas historically overgrazed by sheep are sometimes associated with higher densities of Succulents. Intense hailstorms can spread pricklypear by breaking off joints causing new plants to take root.3 During severe drought perennial grass cover can decline significantly, leaving resources available for use by more drought tolerant succulents. Cholla and pricklypear are both adapted to and favored by drought due to the ability of their shallow, wide spreading root systems to absorb and store water.4 Key indicators of approach to transition: ? Decrease or change in distribution of grass cover. ? Increase in amount of succulent seedlings. ? Increased cover of succulents. Transition back to Grassland (3b) Fire is an effective means of controlling cholla and prickly pear if adequate grass cover remains to carry fire.2 Cholla greater than two feet tall or pricklypear with a large amount of pads (>15-20) are harder to kill. Chemical control is effective in controlling prickly pear and cholla; apply when growth starts in May. Hand grubbing is also effective if cholla or pricklypear is severed 2-4 inches below ground and care is taken not to let broken joints or pads take root. Stacking and burning piles and grubbing during winter or drought help keeps broken joints and pads from rooting. Prescribed grazing will help ensure proper forage utilization and sustain grass cover.

State 5
Shrub Dominated

Community 5.1
Shrub Dominated

Shrub Dominated: Increased shrub cover characterizes this state. Mesquite, creosotebush, and/or tarbush are the dominant shrub species. Burrograss or tobosa is the dominant grass species. Grass cover is decreased, typically patchy with large bare areas present; however, sometimes grass cover can remain relatively high for extended periods when associated with light to moderate infestations of mesquite. Variations in soil characteristics play a part in determining which shrub species increase. Mesquite is well adapted to a wide range of soil types, but increases more often on deep soils low in carbonates, that have a sandy surface overlying finer textured soils. Tarbush prefers finer textured, calcareous soils, usually in lower positions that receive some extra water. Creosotebush is less tolerant of fine textured soils, preferring sandy, calcareous soils that have some gravel. Creosotebush also does well on soils that are shallow over caliche. Retrogression within this state is characterized by a decrease in tobosa, and an increase in burrograss. As the site continues to degrade shrub cover continues to increase and grass cover is severely reduced. Diagnosis: Mesquite, Creosotebush, and/or tarbush are the dominant shrubs. Blue grama and black grama cover is low or absent. Burrograss or tobosa are the dominant grasses. Typically grass cover is patchy with large interconnected bare areas present. Physical soil crusts are present, especially on silt loam surface soils. Transition to Shrub Dominated (4a): Wildlife and livestock consume and disperse mesquite seeds. Flood events may wash creosote or tarbush seeds off adjacent gravelly sites onto the loamy site and supply adequate moisture for germination. Persistent loss of grass cover due to overgrazing or drought can cause large bare patches, providing competition free areas for shrub seedling establishment. As shrub cover increases, competition for soil resources, especially water, becomes a major factor in further reducing grass cover. Reduction of fire, due to either fire suppression policy or loss of adequate fine fuels may increase the probability of shrub encroachment. Increased soil surface physical crusts and associated decreased infiltration, may prevent the establishment of grass seedlings. Transition to Shrub Dominated (5): The dispersal of creosotebush, tarbush or mesquite seed, combined with loss of grass cover and resource competition by shrubs may cause this transition. Key indicators of approach to transition: ? Decreased grass and litter cover. ? Increased bare patch size. ? Increased physical soil crusts. ? Increased amount of mesquite, creosotebush, or tarbush seedlings. ? Increased shrub cover. Transition back to Grassland (4b) Brush control will be necessary to remove shrubs and eliminate competition for resources necessary for grass establishment or reproduction. Seeding may be necessary on those sites where desired grass species are absent or very limited. Pitting and seeding may increase the chances of successful grass establishment. Prescribed grazing will help ensure adequate time is elapsed before grazing seeded area is allowed and proper forage utilization following seeding establishment. Transition to Bare State (6): If grass cover on the shrub-dominated state is

severely limited and shrubs are removed a bare state may result. This transition will depend on amount of grasses or seed remaining, whether site is seeded, or if seeding is successful. Transition to Bare State (7): Removal of succulents and continued overgrazing or drought may cause loss of remaining grasses and erosion. Soil surface physical crusting may also be an important factor in inhibiting grass seedling establishment

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			278–324	
	tobosagrass	PLMU3	*Pleuraphis mutica*	278–324	–
2	**Warm Season**			9–46	
	burrograss	SCBR2	*Scleropogon brevifolius*	9–46	–
3	**Warm Season**			231–278	
	black grama	BOER4	*Bouteloua eriopoda*	231–278	–
	blue grama	BOGR2	*Bouteloua gracilis*	231–278	–
4	**Warm Season**			28–46	
	sideoats grama	BOCU	*Bouteloua curtipendula*	28–46	–
5	**Warm Season**			46–93	
	bush muhly	MUPO2	*Muhlenbergia porteri*	46–93	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	46–93	–
6	**Warm Season**			9–28	
	Arizona cottontop	DICA8	*Digitaria californica*	9–28	–
7	**Warm Season**			46–93	
	threeawn	ARIST	*Aristida*	46–93	–
	muhly	MUHLE	*Muhlenbergia*	46–93	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	46–93	–
8	**Warm Season**			28–46	
	Graminoid (grass or grass-like)	2GRAM	*Graminoid (grass or grass-like)*	28–46	–
Shrub/Vine					
9	**Shrub**			9–28	
	fourwing saltbush	ATCA2	*Atriplex canescens*	9–28	–
	jointfir	EPHED	*Ephedra*	9–28	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	9–28	–
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	5–24	–
	Arizona cottontop	DICA8	*Digitaria californica*	5–24	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	5–24	–
10	**Shrub**			9–28	
	javelina bush	COER5	*Condalia ericoides*	9–28	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	9–28	–
	Grass, annual	2GA	*Grass, annual*	5–15	–
11	**Shrubs**			9–28	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	9–28	–
Forb					

12	**Forb**			9–46	
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	9–46	–
	globemallow	SPHAE	*Sphaeralcea*	9–46	–
	verbena	VEPO4	*Verbena polystachya*	9–46	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	5–15	–
	pricklypear	OPUNT	*Opuntia*	5–15	–
13	**Forb**			9–28	
	croton	CROTO	*Croton*	9–28	–
	woolly groundsel	PACA15	*Packera cana*	9–28	–
14	**Forb**			9–28	
	Goodding's tansyaster	MAPIG2	*Machaeranthera pinnatifida ssp. gooddingii var. gooddingii*	9–28	–
	woolly paperflower	PSTA	*Psilostrophe tagetina*	9–28	–
15	**Forb**			9–28	
	redstem stork's bill	ERCI6	*Erodium cicutarium*	9–28	–
	Texas stork's bill	ERTE13	*Erodium texanum*	9–28	–
16	**Forb**			9–28	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	9–28	–

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, black tailed prairie dog, yellow-faced pocket gopher, banner-tailed kangaroo rat, hispid cotton rat, swift fox, burrowing owl, horned lark, mockingbird, meadowlark, mourning dove, scaled quail, Great Plains toad, plains spadefoot toad, prairie rattlesnake and western coachwhip shake.

Hydrological functions

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

Hydrologic Interpretations
Soil Series Hydrologic Group
Atoka C
Bigetty B
Ratliff B
Reyab B
Holloman B
Largo B
Holloman B
Bigetty B
Berino B
Reagan B
Reakor B
Reeves B
Russler C

Recreational uses

This site offers limited potential for hiking, horseback riding, nature observation and photography. Game bird, antelope and predator hunting are also limited.

Wood products

This site has no potential for wood products

Other products

This site is suitable for grazing by all kinds and classes of livestock, during all seasons of the year. Under retrogression, such plants as black grama, blue grama, sideoats grama, bush muhly, plains bristlegrass, Arizona cottontop, fourwing saltbush and winterfat decrease and there is an increase in burrograss, threeawns, sand dropseed, muhlys, broom snakeweed and javilinabush. Under continued retrogression, burrograss can completely dominate the site. Creosotebush, mesquite, and tarbush can also dominate. Grazing management alone will not improve the site in the above situation. This site is well suited to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM
100 - 76 3.0 – 4.2
75 – 51 4.1 – 5.5
50 – 26 5.3 – 7.0
25 – 0 7.1 +

Inventory data references

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

Other references

Literature References:

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2. Bunting, S.C., H.A. Wright, and L.F. Neuenschwander. 1980. Long-term effects of fire on cactus in the Southern Mixed Prairie of Texas. J. Range. Manage. 33: 85-88.

3. Laycock, W.A. 1982. Hail as an ecological factor in the increase of prickly
pear cactus. p. 359-361. In: J.A. Smith and V.W. Hays (eds.) Proc. XIV Int. Grassland Congr. Westview Press, Boulder, Colo.

4. Vallentine, J.F. 1989. Range Developments and Improvements. 3rd Edition. Academic Press. San Diego, California.

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Contributors

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Rangeland health reference sheet

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Author(s)/participant(s)	
Contact for lead author	
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Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

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

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

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

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

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

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

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

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

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial**

distribution on infiltration and runoff:

---

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

---

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

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

---

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

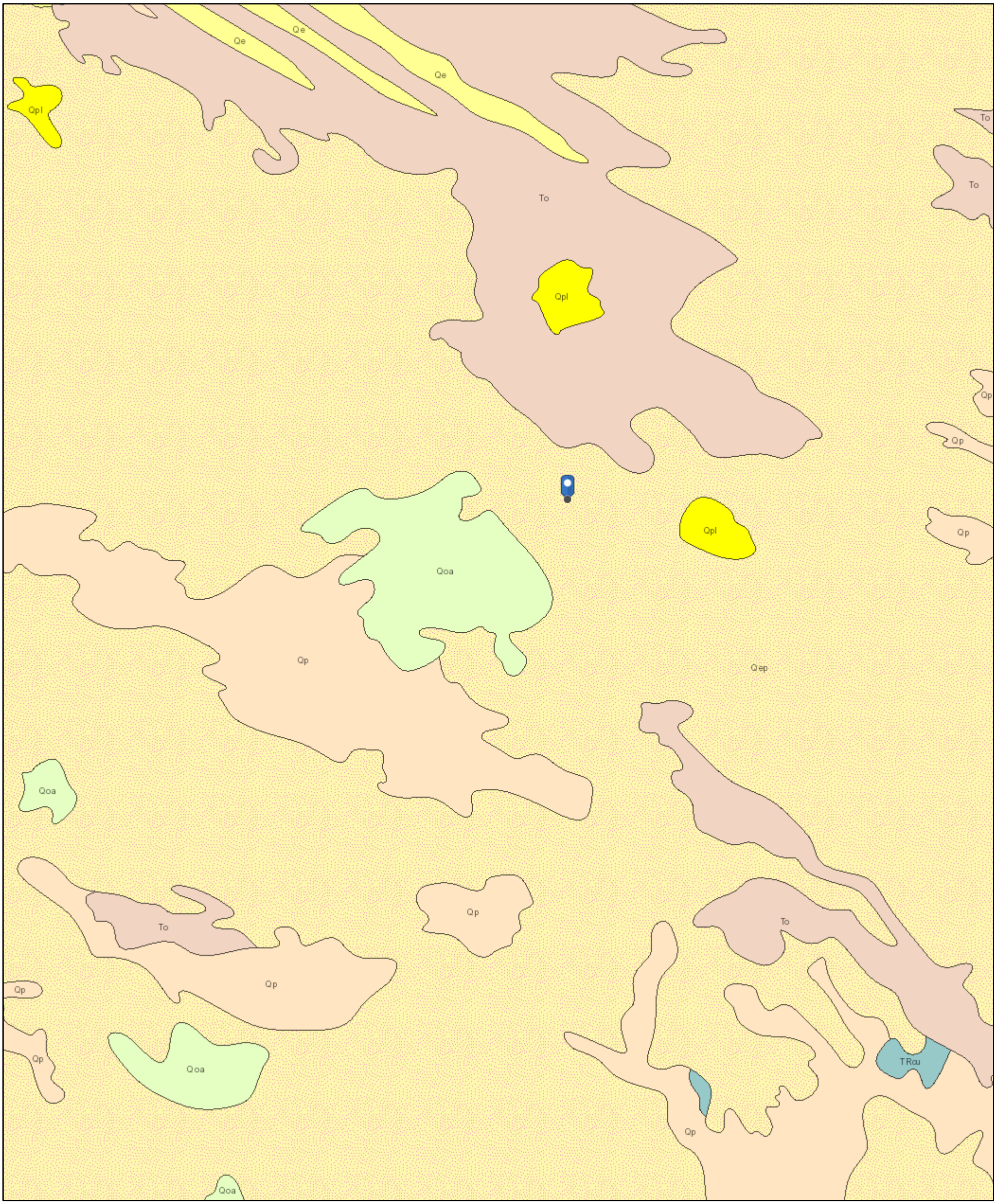
---

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

---

17. **Perennial plant reproductive capability:**

Marlan Downey 09 ST TB



2/14/2023, 4:01:51 PM

Lithologic Units

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

1:144,448

0 1.25 2.5 5 mi

0 2.25 4.5 9 km

Earthstar Geographics, NMBGMR

ATTACHMENT 6

Gmail Dhugal Hanton <vertexresourcegroupusa@gmail.com>

nAPP2304525840 Confirmatory Sample Notification Marlan Downey

2 messages

Dhugal Hanton <vertexresourcegroupusa@gmail.com> Mon, Apr 3, 2023 at 12:08 PM
To: "Enviro, OCD, EMNRD" <OCD.Enviro@emnrd.nm.gov>
Cc: clinton.talley@matadorresources.com, Arsenio Jones <arsenio.jones@matadorresources.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Marlan Downey 09 ST TB for the following release:

nAPP2304525840 DOR: February 12, 2023

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

Starting on Wednesday, April 5th and continuing through Saturday April 8th, 2023, at approximately 2:30 p.m., Monica Peppin of Vertex will be onsite to conduct confirmation sampling for the above release.

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

Thank you,
Monica

Monica Peppin, A.S.
Project Manager

Vertex Resource Services Inc.
3101 Boyd Drive,
Carlsbad, NM 88220

P 575.725.5001 Ext. 711
C 575.361.9880
F

www.vertex.ca

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> Mon, Apr 3, 2023 at 1:03 PM
To: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov>, "Nobui, Jennifer, EMNRD" <Jennifer.Nobui@emnrd.nm.gov>

Monica,

Please be aware that notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to insure inclusion in the project file.

JH

Jocelyn Harimon ● Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

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

(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http:// **www.emnrd.nm.gov**

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Monday, April 3, 2023 12:08 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: clinton.talley@matadorresources.com; Arsenio Jones <arsenio.jones@matadorresources.com>
Subject: [EXTERNAL] nAPP2304525840 Confirmatory Sample Notification Marlan Downey

[Quoted text hidden]

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

March 12, 2023

Monica Peppin

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Marlan Downey TB OrderNo.: 2303083

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 27 sample(s) on 3/2/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:30:00 AM
Lab ID: 2303083-001 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/3/2023 7:55:22 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 7:55:22 PM
Surr: DNOP	92.3	69-147		%Rec	1	3/3/2023 7:55:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 2:10:09 AM
Surr: BFB	98.9	37.7-212		%Rec	1	3/4/2023 2:10:09 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 2:10:09 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 2:10:09 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 2:10:09 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 2:10:09 AM
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	3/4/2023 2:10:09 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	7000	300		mg/Kg	100	3/6/2023 10:15:03 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:35:00 AM
Lab ID: 2303083-002 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/3/2023 8:34:46 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 8:34:46 PM
Surr: DNOP	96.7	69-147		%Rec	1	3/3/2023 8:34:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 3:20:49 AM
Surr: BFB	102	37.7-212		%Rec	1	3/4/2023 3:20:49 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 3:20:49 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 3:20:49 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 3:20:49 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/4/2023 3:20:49 AM
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	3/4/2023 3:20:49 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	790	60		mg/Kg	20	3/3/2023 4:47:09 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-01 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:40:00 AM
Lab ID: 2303083-003 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/3/2023 8:48:40 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 8:48:40 PM
Surr: DNOP	99.3	69-147		%Rec	1	3/3/2023 8:48:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 4:31:20 AM
Surr: BFB	103	37.7-212		%Rec	1	3/4/2023 4:31:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 4:31:20 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 4:31:20 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 4:31:20 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 4:31:20 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/4/2023 4:31:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1600	60		mg/Kg	20	3/6/2023 3:26:22 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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:45:00 AM
Lab ID: 2303083-004 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	11	9.2		mg/Kg	1	3/3/2023 9:02:25 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/3/2023 9:02:25 PM
Surr: DNOP	89.4	69-147		%Rec	1	3/3/2023 9:02:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 4:54:47 AM
Surr: BFB	99.9	37.7-212		%Rec	1	3/4/2023 4:54:47 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 4:54:47 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 4:54:47 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 4:54:47 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/4/2023 4:54:47 AM
Surr: 4-Bromofluorobenzene	90.2	70-130		%Rec	1	3/4/2023 4:54:47 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	5300	150		mg/Kg	50	3/7/2023 10:21:49 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:50:00 AM
Lab ID: 2303083-005 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/3/2023 9:16:22 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	3/3/2023 9:16:22 PM
Surr: DNOP	98.4	69-147		%Rec	1	3/3/2023 9:16:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 5:18:32 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 5:18:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 5:18:32 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 5:18:32 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 5:18:32 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 5:18:32 AM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/4/2023 5:18:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	900	60		mg/Kg	20	3/6/2023 3:51:12 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-02 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 7:55:00 AM
Lab ID: 2303083-006 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/3/2023 9:43:39 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/3/2023 9:43:39 PM
Surr: DNOP	101	69-147		%Rec	1	3/3/2023 9:43:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 5:41:56 AM
Surr: BFB	100	37.7-212		%Rec	1	3/4/2023 5:41:56 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 5:41:56 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 5:41:56 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 5:41:56 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/4/2023 5:41:56 AM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/4/2023 5:41:56 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 4:03:36 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-03 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:00:00 AM
Lab ID: 2303083-007 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	61	9.6		mg/Kg	1	3/3/2023 9:57:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 9:57:10 PM
Surr: DNOP	89.5	69-147		%Rec	1	3/3/2023 9:57:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/4/2023 6:05:52 AM
Surr: BFB	98.7	37.7-212		%Rec	1	3/4/2023 6:05:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	3/4/2023 6:05:52 AM
Toluene	ND	0.046		mg/Kg	1	3/4/2023 6:05:52 AM
Ethylbenzene	ND	0.046		mg/Kg	1	3/4/2023 6:05:52 AM
Xylenes, Total	ND	0.092		mg/Kg	1	3/4/2023 6:05:52 AM
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	3/4/2023 6:05:52 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	7000	300		mg/Kg	100	3/7/2023 10:46:39 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 2'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 8:05:00 AM
Lab ID: 2303083-008 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/3/2023 10:11:13 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 10:11:13 PM
Surr: DNOP	103	69-147		%Rec	1	3/3/2023 10:11:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 6:29:23 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 6:29:23 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 6:29:23 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 6:29:23 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 6:29:23 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 6:29:23 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/4/2023 6:29:23 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	3500	150		mg/Kg	50	3/7/2023 10:34:14 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-03 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:10:00 AM
Lab ID: 2303083-009 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/3/2023 10:25:02 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 10:25:02 PM
Surr: DNOP	99.2	69-147		%Rec	1	3/3/2023 10:25:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 6:53:19 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 6:53:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 6:53:19 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 6:53:19 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 6:53:19 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/4/2023 6:53:19 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/4/2023 6:53:19 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 5:05:39 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-04 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:30:00 AM
Lab ID: 2303083-010 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	3/3/2023 10:38:46 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	3/3/2023 10:38:46 PM
Surr: DNOP	88.5	69-147		%Rec	1	3/3/2023 10:38:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 7:16:46 AM
Surr: BFB	102	37.7-212		%Rec	1	3/4/2023 7:16:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 7:16:46 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 7:16:46 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 7:16:46 AM
Xylenes, Total	0.18	0.097		mg/Kg	1	3/4/2023 7:16:46 AM
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	3/4/2023 7:16:46 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 5:18:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 2'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 8:35:00 AM
Lab ID: 2303083-011 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/3/2023 10:52:23 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 10:52:23 PM
Surr: DNOP	83.4	69-147		%Rec	1	3/3/2023 10:52:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 8:04:04 AM
Surr: BFB	99.2	37.7-212		%Rec	1	3/4/2023 8:04:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 8:04:04 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 8:04:04 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 8:04:04 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/4/2023 8:04:04 AM
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	1	3/4/2023 8:04:04 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 5:55:18 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 4'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 8:40:00 AM
Lab ID: 2303083-012 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/3/2023 11:06:19 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/3/2023 11:06:19 PM
Surr: DNOP	73.1	69-147		%Rec	1	3/3/2023 11:06:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 8:27:30 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 8:27:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 8:27:30 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 8:27:30 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 8:27:30 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/4/2023 8:27:30 AM
Surr: 4-Bromofluorobenzene	91.5	70-130		%Rec	1	3/4/2023 8:27:30 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 6:07:44 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:45:00 AM
Lab ID: 2303083-013 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/3/2023 11:20:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/3/2023 11:20:08 PM
Surr: DNOP	79.8	69-147		%Rec	1	3/3/2023 11:20:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 8:51:04 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 8:51:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 8:51:04 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 8:51:04 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 8:51:04 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/4/2023 8:51:04 AM
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	3/4/2023 8:51:04 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	300	60		mg/Kg	20	3/6/2023 7:22:13 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:50:00 AM
Lab ID: 2303083-014 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/3/2023 11:34:00 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/3/2023 11:34:00 PM
Surr: DNOP	104	69-147		%Rec	1	3/3/2023 11:34:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 9:14:34 AM
Surr: BFB	102	37.7-212		%Rec	1	3/4/2023 9:14:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 9:14:34 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 9:14:34 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 9:14:34 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/4/2023 9:14:34 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/4/2023 9:14:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 8:24:16 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 8:55:00 AM
Lab ID: 2303083-015 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/3/2023 11:47:44 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 11:47:44 PM
Surr: DNOP	101	69-147		%Rec	1	3/3/2023 11:47:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 9:38:07 AM
Surr: BFB	102	37.7-212		%Rec	1	3/4/2023 9:38:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 9:38:07 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 9:38:07 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 9:38:07 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 9:38:07 AM
Surr: 4-Bromofluorobenzene	92.2	70-130		%Rec	1	3/4/2023 9:38:07 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 8:36:40 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:00:00 AM
Lab ID: 2303083-016 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	68	9.3		mg/Kg	1	3/4/2023 12:01:42 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/4/2023 12:01:42 AM
Surr: DNOP	101	69-147		%Rec	1	3/4/2023 12:01:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 10:01:38 AM
Surr: BFB	99.7	37.7-212		%Rec	1	3/4/2023 10:01:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 10:01:38 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 10:01:38 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 10:01:38 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 10:01:38 AM
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	3/4/2023 10:01:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	7000	300		mg/Kg	100	3/7/2023 10:59:03 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:05:00 AM
Lab ID: 2303083-017 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/4/2023 12:15:22 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/4/2023 12:15:22 AM
Surr: DNOP	98.5	69-147		%Rec	1	3/4/2023 12:15:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 10:25:15 AM
Surr: BFB	104	37.7-212		%Rec	1	3/4/2023 10:25:15 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 10:25:15 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 10:25:15 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 10:25:15 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/4/2023 10:25:15 AM
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	3/4/2023 10:25:15 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	760	60		mg/Kg	20	3/6/2023 9:01:30 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-06 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:10:00 AM
Lab ID: 2303083-018 **Matrix:** SOIL
Received Date: 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/4/2023 12:29:15 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/4/2023 12:29:15 AM
Surr: DNOP	93.8	69-147		%Rec	1	3/4/2023 12:29:15 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/4/2023 10:48:59 AM
Surr: BFB	102	37.7-212		%Rec	1	3/4/2023 10:48:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 10:48:59 AM
Toluene	ND	0.049		mg/Kg	1	3/4/2023 10:48:59 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/4/2023 10:48:59 AM
Xylenes, Total	ND	0.098		mg/Kg	1	3/4/2023 10:48:59 AM
Surr: 4-Bromofluorobenzene	93.1	70-130		%Rec	1	3/4/2023 10:48:59 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 9:13:54 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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-07 0'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:30:00 AM
Lab ID: 2303083-019 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/4/2023 12:43:07 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/4/2023 12:43:07 AM
Surr: DNOP	78.0	69-147		%Rec	1	3/4/2023 12:43:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 11:12:43 AM
Surr: BFB	101	37.7-212		%Rec	1	3/4/2023 11:12:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 11:12:43 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 11:12:43 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 11:12:43 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/4/2023 11:12:43 AM
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	1	3/4/2023 11:12:43 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	61		mg/Kg	20	3/6/2023 9:26:19 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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-07 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:35:00 AM
Lab ID: 2303083-020 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/4/2023 12:56:54 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/4/2023 12:56:54 AM
Surr: DNOP	98.2	69-147		%Rec	1	3/4/2023 12:56:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 11:36:30 AM
Surr: BFB	105	37.7-212		%Rec	1	3/4/2023 11:36:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 11:36:30 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 11:36:30 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 11:36:30 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/4/2023 11:36:30 AM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	3/4/2023 11:36:30 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 9:38:43 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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 4'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 9:40:00 AM
Lab ID: 2303083-021 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/3/2023 10:39:44 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/3/2023 10:39:44 PM
Surr: DNOP	108	69-147		%Rec	1	3/3/2023 10:39:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 9:51:08 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 3:10:10 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 3:10:10 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 3:10:10 AM
Xylenes, Total	ND	0.099		mg/Kg	1	3/4/2023 3:10:10 AM
Surr: 1,2-Dichloroethane-d4	118	70-130		%Rec	1	3/4/2023 3:10:10 AM
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	3/4/2023 3:10:10 AM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	3/4/2023 3:10:10 AM
Surr: Toluene-d8	107	70-130		%Rec	1	3/4/2023 3:10:10 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 3:10:10 AM
Surr: BFB	109	70-130		%Rec	1	3/4/2023 3:10:10 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 0'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 9:45:00 AM
Lab ID: 2303083-022 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/3/2023 11:12:12 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/3/2023 11:12:12 PM
Surr: DNOP	84.0	69-147		%Rec	1	3/3/2023 11:12:12 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 10:03:32 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 4:31:15 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 4:31:15 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 4:31:15 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 4:31:15 AM
Surr: 1,2-Dichloroethane-d4	122	70-130		%Rec	1	3/4/2023 4:31:15 AM
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	3/4/2023 4:31:15 AM
Surr: Dibromofluoromethane	109	70-130		%Rec	1	3/4/2023 4:31:15 AM
Surr: Toluene-d8	106	70-130		%Rec	1	3/4/2023 4:31:15 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 4:31:15 AM
Surr: BFB	107	70-130		%Rec	1	3/4/2023 4:31:15 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-08 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 9:50:00 AM
Lab ID: 2303083-023 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/3/2023 11:22:57 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/3/2023 11:22:57 PM
Surr: DNOP	86.2	69-147		%Rec	1	3/3/2023 11:22:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 10:15:57 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 4:58:13 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 4:58:13 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 4:58:13 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/4/2023 4:58:13 AM
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	3/4/2023 4:58:13 AM
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	3/4/2023 4:58:13 AM
Surr: Dibromofluoromethane	112	70-130		%Rec	1	3/4/2023 4:58:13 AM
Surr: Toluene-d8	108	70-130		%Rec	1	3/4/2023 4:58:13 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 4:58:13 AM
Surr: BFB	114	70-130		%Rec	1	3/4/2023 4:58:13 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 4'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 9:55:00 AM
Lab ID: 2303083-024 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/3/2023 11:33:44 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/3/2023 11:33:44 PM
Surr: DNOP	107	69-147		%Rec	1	3/3/2023 11:33:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 10:53:12 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	3/4/2023 5:25:17 AM
Toluene	ND	0.050		mg/Kg	1	3/4/2023 5:25:17 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/4/2023 5:25:17 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/4/2023 5:25:17 AM
Surr: 1,2-Dichloroethane-d4	118	70-130		%Rec	1	3/4/2023 5:25:17 AM
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	3/4/2023 5:25:17 AM
Surr: Dibromofluoromethane	107	70-130		%Rec	1	3/4/2023 5:25:17 AM
Surr: Toluene-d8	104	70-130		%Rec	1	3/4/2023 5:25:17 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/4/2023 5:25:17 AM
Surr: BFB	113	70-130		%Rec	1	3/4/2023 5:25:17 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-09 0'
Project: Marlan Downey TB **Collection Date:** 2/28/2023 10:00:00 AM
Lab ID: 2303083-025 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	3/9/2023 12:03:57 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/9/2023 12:03:57 PM
Surr: DNOP	72.1	69-147		%Rec	1	3/9/2023 12:03:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	1400	60		mg/Kg	20	3/6/2023 11:05:36 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	3/4/2023 5:52:14 AM
Toluene	ND	0.047		mg/Kg	1	3/4/2023 5:52:14 AM
Ethylbenzene	ND	0.047		mg/Kg	1	3/4/2023 5:52:14 AM
Xylenes, Total	ND	0.094		mg/Kg	1	3/4/2023 5:52:14 AM
Surr: 1,2-Dichloroethane-d4	122	70-130		%Rec	1	3/4/2023 5:52:14 AM
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	3/4/2023 5:52:14 AM
Surr: Dibromofluoromethane	109	70-130		%Rec	1	3/4/2023 5:52:14 AM
Surr: Toluene-d8	103	70-130		%Rec	1	3/4/2023 5:52:14 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/4/2023 5:52:14 AM
Surr: BFB	108	70-130		%Rec	1	3/4/2023 5:52:14 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 2'
Project: Marlan Downey TB
Collection Date: 2/28/2023 10:05:00 AM
Lab ID: 2303083-026 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/3/2023 11:55:11 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/3/2023 11:55:11 PM
Surr: DNOP	95.8	69-147		%Rec	1	3/3/2023 11:55:11 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 11:18:01 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	3/4/2023 6:19:14 AM
Toluene	ND	0.048		mg/Kg	1	3/4/2023 6:19:14 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/4/2023 6:19:14 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/4/2023 6:19:14 AM
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	3/4/2023 6:19:14 AM
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	3/4/2023 6:19:14 AM
Surr: Dibromofluoromethane	106	70-130		%Rec	1	3/4/2023 6:19:14 AM
Surr: Toluene-d8	107	70-130		%Rec	1	3/4/2023 6:19:14 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/4/2023 6:19:14 AM
Surr: BFB	109	70-130		%Rec	1	3/4/2023 6:19:14 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2303083**
Date Reported: **3/12/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-09 4'
Project: Marlan Downey TB
Collection Date: 2/28/2023 10:10:00 AM
Lab ID: 2303083-027 **Matrix:** SOIL **Received Date:** 3/2/2023 7:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/4/2023 12:05:55 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/4/2023 12:05:55 AM
Surr: DNOP	76.2	69-147		%Rec	1	3/4/2023 12:05:55 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	3/6/2023 11:30:25 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	3/4/2023 6:46:11 AM
Toluene	ND	0.046		mg/Kg	1	3/4/2023 6:46:11 AM
Ethylbenzene	ND	0.046		mg/Kg	1	3/4/2023 6:46:11 AM
Xylenes, Total	ND	0.093		mg/Kg	1	3/4/2023 6:46:11 AM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	3/4/2023 6:46:11 AM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	3/4/2023 6:46:11 AM
Surr: Dibromofluoromethane	105	70-130		%Rec	1	3/4/2023 6:46:11 AM
Surr: Toluene-d8	104	70-130		%Rec	1	3/4/2023 6:46:11 AM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/4/2023 6:46:11 AM
Surr: BFB	109	70-130		%Rec	1	3/4/2023 6:46:11 AM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **MB-73498**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73498**	RunNo: **95029**							
Prep Date: **3/3/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436122**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73498**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73498**	RunNo: **95029**							
Prep Date: **3/3/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436123**	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			

Sample ID: **MB-73517**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73517**	RunNo: **95055**							
Prep Date: **3/6/2023**	Analysis Date: **3/6/2023**	SeqNo: **3437412**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73517**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73517**	RunNo: **95055**							
Prep Date: **3/6/2023**	Analysis Date: **3/6/2023**	SeqNo: **3437413**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Sample ID: **MB-73533**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73533**	RunNo: **95055**							
Prep Date: **3/6/2023**	Analysis Date: **3/6/2023**	SeqNo: **3437444**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73533**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73533**	RunNo: **95055**							
Prep Date: **3/6/2023**	Analysis Date: **3/6/2023**	SeqNo: **3437445**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **2303083-021AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-07 4'** Batch ID: **73486** RunNo: **95019**
Prep Date: **3/2/2023** Analysis Date: **3/3/2023** SeqNo: **3436805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.0	44.96	0	94.6	54.2	135			
Surr: DNOP	4.7		4.496		104	69	147			

Sample ID: **2303083-021AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-07 4'** Batch ID: **73486** RunNo: **95019**
Prep Date: **3/2/2023** Analysis Date: **3/3/2023** SeqNo: **3436806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.2	46.00	0	94.0	54.2	135	1.56	29.2	
Surr: DNOP	4.6		4.600		99.7	69	147	0	0	

Sample ID: **LCS-73486** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **73486** RunNo: **95019**
Prep Date: **3/2/2023** Analysis Date: **3/3/2023** SeqNo: **3436841** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	61.9	130			
Surr: DNOP	4.5		5.000		89.9	69	147			

Sample ID: **MB-73486** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **73486** RunNo: **95019**
Prep Date: **3/2/2023** Analysis Date: **3/3/2023** SeqNo: **3436845** 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		99.8	69	147			

Sample ID: **MB-73485** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **73485** RunNo: **95039**
Prep Date: **3/2/2023** Analysis Date: **3/3/2023** SeqNo: **3437497** 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	9.2		10.00		91.6	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **LCS-73485**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73485**	RunNo: **95039**
Prep Date: **3/2/2023**	Analysis Date: **3/3/2023**	SeqNo: **3437498** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	35	10	50.00	0	70.7	61.9	130			
Surr: DNOP	4.3		5.000		86.3	69	147			

Sample ID: **2303083-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-01 0'**	Batch ID: **73485**	RunNo: **95039**
Prep Date: **3/2/2023**	Analysis Date: **3/3/2023**	SeqNo: **3437500** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.5	47.71	0	87.6	54.2	135			
Surr: DNOP	4.4		4.771		92.6	69	147			

Sample ID: **2303083-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-01 0'**	Batch ID: **73485**	RunNo: **95039**
Prep Date: **3/2/2023**	Analysis Date: **3/3/2023**	SeqNo: **3437501** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.1	45.50	0	94.6	54.2	135	3.01	29.2	
Surr: DNOP	4.4		4.550		96.8	69	147	0	0	

Sample ID: **LCS-73532**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **73532**	RunNo: **95077**
Prep Date: **3/6/2023**	Analysis Date: **3/7/2023**	SeqNo: **3438281** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.7	69	147			

Sample ID: **MB-73532**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **73532**	RunNo: **95077**
Prep Date: **3/6/2023**	Analysis Date: **3/7/2023**	SeqNo: **3438285** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.9		10.00		89.2	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **2303083-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-01 0'**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.83	0	95.8	70	130			
Surr: BFB	1900		993.0		194	37.7	212			

Sample ID: **2303083-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-01 0'**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	24.80	0	101	70	130	5.54	20	
Surr: BFB	2000		992.1		200	37.7	212	0	0	

Sample ID: **lcs-73478**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436736** 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	96.5	72.3	137			
Surr: BFB	2000		1000		196	37.7	212			

Sample ID: **mb-73478**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436737** 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		101	37.7	212			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **2303083-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-01 2'**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9823	0	85.2	68.8	120			
Toluene	0.88	0.049	0.9823	0.01755	87.7	73.6	124			
Ethylbenzene	0.88	0.049	0.9823	0	89.7	72.7	129			
Xylenes, Total	2.6	0.098	2.947	0	89.0	75.7	126			
Surr: 4-Bromofluorobenzene	0.92		0.9823		93.5	70	130			

Sample ID: **2303083-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-01 2'**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436709** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	0.9814	0	91.0	68.8	120	6.57	20	
Toluene	0.94	0.049	0.9814	0.01755	93.6	73.6	124	6.37	20	
Ethylbenzene	0.93	0.049	0.9814	0	94.7	72.7	129	5.34	20	
Xylenes, Total	2.8	0.098	2.944	0	94.9	75.7	126	6.32	20	
Surr: 4-Bromofluorobenzene	0.91		0.9814		92.6	70	130	0	0	

Sample ID: **LCS-73478**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436739** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	81.7	80	120			
Toluene	0.85	0.050	1.000	0	84.7	80	120			
Ethylbenzene	0.84	0.050	1.000	0	84.1	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.1	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.3	70	130			

Sample ID: **mb-73478**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **73478**	RunNo: **95021**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436740** 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	0.92		1.000		92.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **LCS-73483**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3437032** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	80	120			
Toluene	0.96	0.050	1.000	0	96.2	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.9	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		109	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID: **MB-73483**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/3/2023**	SeqNo: **3437033** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		108	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.54		0.5000		108	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303083**

12-Mar-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey TB

Sample ID: **2303083-021ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **BH23-07 4'**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.75	0	108	65.9	123			
Surr: BFB	570		495.0		114	70	130			

Sample ID: **2303083-021amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **BH23-07 4'**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.73	0	108	65.9	123	0.211	20	
Surr: BFB	560		494.6		112	70	130	0	0	

Sample ID: **LCS-73483**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/4/2023**	SeqNo: **3436961** 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	84.7	70	130			
Surr: BFB	530		500.0		106	70	130			

Sample ID: **MB-73483**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **73483**	RunNo: **95042**
Prep Date: **3/2/2023**	Analysis Date: **3/3/2023**	SeqNo: **3436963** 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	530		500.0		107	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2303083

RcptNo: 1

Received By: Tracy Casarrubias 3/2/2023 7:25:00 AM

Completed By: Tracy Casarrubias 3/2/2023 8:09:49 AM

Reviewed By: JK 3-2-23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: SC 3/2/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Yes	Morty		

Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☒ Rush 5 Day

Project Name: Marlan Downey TB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJP/HK

On Ice: ☑ Yes ☐ No many

# of Coolers: 1

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

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2303083	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)
2/28	7:30	Soil	BH23-01 0'	4 oz	ice	001	✓	✓					✓			
	7:35		2'			002										
	7:40		4'			003										
	7:45		BH23-02 0'			004										
	7:50		2'			005										
	7:55		4'			006										
	8:00		BH23-03 0'			007										
	8:05		2'			008										
	8:10		4'			009										
	8:30		BH23-04 0'			010										
	8:35		2'			011										
	8:40		4			012										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/1/23	945				3/1/23	945
3/1/23	1900			courier	3/2/23	7:25

Remarks: Matador

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:
☐ Standard ☒ Rush 5 Day

Project Name: Marlan Downey TB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJP/HK

On Ice: ☒ Yes ☐ No marty

# of Coolers: 1

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

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2303083
2/28	8:45	Soil	BH23-05 0'	4oz	ice	013
	8:50		2'			014
	8:55		4'			015
	9:00		BH23-06 0'			016
	9:05		2'			017
	9:10		4'			018
	9:30		BH23-07 0'			019
	9:35		2'			020
	9:40		4			021
	9:45		BH23-08 0'			022
	9:50		2'			023
	9:55		4'			024

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)

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/1/23	945				3/1/23	945
3/1/23	1900			Courier	3/2/23	7:25

Remarks: Matador

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:
☑ Standard ☒ Rush 5 Day

Project Name: Marlan Downey

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MDP/HK

On Ice: ☑ Yes ☐ No marks

# of Coolers: 1

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2303083	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)
2/28	10:00	Soil	BH23-09 0'	H02	ice	025	✓	✓					✓			
✓	10:05	✓	2'	✓	✓	026	✓	✓								
✓	10:10	✓	4'	✓	✓	027	✓	✓								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/1/23	945				3/1/23	945
3/1/23	1900			courier	3/2/23	7:25

Remarks: Matador

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 19, 2023

Monica Peppin

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Marlan Downey 09ST TB OrderNo.: 2304486

Dear Monica Peppin:

Hall Environmental Analysis Laboratory received 65 sample(s) on 4/12/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-01 5'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:00:00 AM
Lab ID: 2304486-001 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/13/2023 6:24:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/13/2023 6:24:07 PM
Surr: DNOP	91.4	69-147		%Rec	1	4/13/2023 6:24:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 11:35:50 AM
Surr: BFB	101	37.7-212		%Rec	1	4/13/2023 11:35:50 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 11:35:50 AM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 11:35:50 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 11:35:50 AM
Xylenes, Total	ND	0.098		mg/Kg	1	4/13/2023 11:35:50 AM
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	1	4/13/2023 11:35:50 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	160	60		mg/Kg	20	4/13/2023 2:08:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-02 5'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:05:00 AM
Lab ID: 2304486-002 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2023 6:35:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2023 6:35:00 PM
Surr: DNOP	87.3	69-147		%Rec	1	4/13/2023 6:35:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/13/2023 12:46:34 PM
Surr: BFB	94.0	37.7-212		%Rec	1	4/13/2023 12:46:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 12:46:34 PM
Toluene	ND	0.047		mg/Kg	1	4/13/2023 12:46:34 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/13/2023 12:46:34 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/13/2023 12:46:34 PM
Surr: 4-Bromofluorobenzene	97.5	70-130		%Rec	1	4/13/2023 12:46:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	120	59		mg/Kg	20	4/13/2023 2:20:33 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-03 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:10:00 AM
Lab ID: 2304486-003 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/13/2023 6:46:03 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/13/2023 6:46:03 PM
Surr: DNOP	89.1	69-147		%Rec	1	4/13/2023 6:46:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/13/2023 1:57:00 PM
Surr: BFB	87.4	37.7-212		%Rec	1	4/13/2023 1:57:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 1:57:00 PM
Toluene	ND	0.047		mg/Kg	1	4/13/2023 1:57:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/13/2023 1:57:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/13/2023 1:57:00 PM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	4/13/2023 1:57:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	120	60		mg/Kg	20	4/13/2023 2:32:58 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-04 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:15:00 AM
Lab ID: 2304486-004 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	11		mg/Kg	1	4/13/2023 6:57:06 PM
Motor Oil Range Organics (MRO)	ND	53		mg/Kg	1	4/13/2023 6:57:06 PM
Surr: DNOP	90.2	69-147		%Rec	1	4/13/2023 6:57:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/13/2023 2:20:23 PM
Surr: BFB	116	37.7-212		%Rec	1	4/13/2023 2:20:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	4/13/2023 2:20:23 PM
Toluene	ND	0.047		mg/Kg	1	4/13/2023 2:20:23 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/13/2023 2:20:23 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/13/2023 2:20:23 PM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	4/13/2023 2:20:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	150	60		mg/Kg	20	4/13/2023 3:35:00 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-05 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:20:00 AM
Lab ID: 2304486-005 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/13/2023 7:08:07 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2023 7:08:07 PM
Surr: DNOP	94.1	69-147		%Rec	1	4/13/2023 7:08:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2023 2:43:49 PM
Surr: BFB	103	37.7-212		%Rec	1	4/13/2023 2:43:49 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 2:43:49 PM
Toluene	ND	0.048		mg/Kg	1	4/13/2023 2:43:49 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2023 2:43:49 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 2:43:49 PM
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	4/13/2023 2:43:49 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	110	60		mg/Kg	20	4/13/2023 3:47:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-06 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:25:00 AM
Lab ID: 2304486-006 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/13/2023 7:19:08 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/13/2023 7:19:08 PM
Surr: DNOP	93.8	69-147		%Rec	1	4/13/2023 7:19:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 3:07:10 PM
Surr: BFB	92.2	37.7-212		%Rec	1	4/13/2023 3:07:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 3:07:10 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 3:07:10 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 3:07:10 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/13/2023 3:07:10 PM
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	4/13/2023 3:07:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	120	60		mg/Kg	20	4/13/2023 3:59:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-07 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:30:00 AM
Lab ID: 2304486-007 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/13/2023 7:40:53 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 7:40:53 PM
Surr: DNOP	95.9	69-147		%Rec	1	4/13/2023 7:40:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 3:30:37 PM
Surr: BFB	107	37.7-212		%Rec	1	4/13/2023 3:30:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 3:30:37 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 3:30:37 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 3:30:37 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 3:30:37 PM
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	1	4/13/2023 3:30:37 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/13/2023 4:12:15 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-08 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:35:00 AM
Lab ID: 2304486-008 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	4/13/2023 7:51:53 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/13/2023 7:51:53 PM
Surr: DNOP	97.9	69-147		%Rec	1	4/13/2023 7:51:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 3:53:56 PM
Surr: BFB	98.0	37.7-212		%Rec	1	4/13/2023 3:53:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 3:53:56 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 3:53:56 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 3:53:56 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/13/2023 3:53:56 PM
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	4/13/2023 3:53:56 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/13/2023 4:24:39 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-09 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:40:00 AM
Lab ID: 2304486-009 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/13/2023 8:02:50 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2023 8:02:50 PM
Surr: DNOP	93.1	69-147		%Rec	1	4/13/2023 8:02:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2023 4:17:20 PM
Surr: BFB	110	37.7-212		%Rec	1	4/13/2023 4:17:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 4:17:20 PM
Toluene	ND	0.048		mg/Kg	1	4/13/2023 4:17:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2023 4:17:20 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 4:17:20 PM
Surr: 4-Bromofluorobenzene	99.9	70-130		%Rec	1	4/13/2023 4:17:20 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	80	60		mg/Kg	20	4/13/2023 4:37:04 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-10 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:45:00 AM
Lab ID: 2304486-010 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/13/2023 8:13:48 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2023 8:13:48 PM
Surr: DNOP	102	69-147		%Rec	1	4/13/2023 8:13:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2023 4:41:05 PM
Surr: BFB	107	37.7-212		%Rec	1	4/13/2023 4:41:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 4:41:05 PM
Toluene	ND	0.048		mg/Kg	1	4/13/2023 4:41:05 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2023 4:41:05 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2023 4:41:05 PM
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	4/13/2023 4:41:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/13/2023 5:39:07 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-11 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:50:00 AM
Lab ID: 2304486-011 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/13/2023 8:24:44 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 8:24:44 PM
Surr: DNOP	92.3	69-147		%Rec	1	4/13/2023 8:24:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 5:27:46 PM
Surr: BFB	81.5	37.7-212		%Rec	1	4/13/2023 5:27:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 5:27:46 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 5:27:46 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 5:27:46 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/13/2023 5:27:46 PM
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	4/13/2023 5:27:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	100	61		mg/Kg	20	4/13/2023 5:51:32 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-12 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 9:55:00 AM
Lab ID: 2304486-012 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2023 8:35:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2023 8:35:40 PM
Surr: DNOP	90.5	69-147		%Rec	1	4/13/2023 8:35:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 5:51:04 PM
Surr: BFB	99.2	37.7-212		%Rec	1	4/13/2023 5:51:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 5:51:04 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 5:51:04 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 5:51:04 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/13/2023 5:51:04 PM
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	4/13/2023 5:51:04 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	86	60		mg/Kg	20	4/13/2023 6:03:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-13 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:00:00 AM
Lab ID: 2304486-013 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/13/2023 8:46:35 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2023 8:46:35 PM
Surr: DNOP	89.7	69-147		%Rec	1	4/13/2023 8:46:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2023 6:14:24 PM
Surr: BFB	96.4	37.7-212		%Rec	1	4/13/2023 6:14:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 6:14:24 PM
Toluene	ND	0.050		mg/Kg	1	4/13/2023 6:14:24 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2023 6:14:24 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/13/2023 6:14:24 PM
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	4/13/2023 6:14:24 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	68	50		mg/Kg	20	4/13/2023 6:16:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-14 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:05:00 AM
Lab ID: 2304486-014 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/13/2023 8:57:28 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2023 8:57:28 PM
Surr: DNOP	88.7	69-147		%Rec	1	4/13/2023 8:57:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 6:37:51 PM
Surr: BFB	89.5	37.7-212		%Rec	1	4/13/2023 6:37:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 6:37:51 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 6:37:51 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 6:37:51 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 6:37:51 PM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	4/13/2023 6:37:51 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/13/2023 6:28:46 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-15 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:10:00 AM
Lab ID: 2304486-015 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/13/2023 9:08:20 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2023 9:08:20 PM
Surr: DNOP	96.0	69-147		%Rec	1	4/13/2023 9:08:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2023 7:01:26 PM
Surr: BFB	81.8	37.7-212		%Rec	1	4/13/2023 7:01:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 7:01:26 PM
Toluene	ND	0.049		mg/Kg	1	4/13/2023 7:01:26 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2023 7:01:26 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 7:01:26 PM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	4/13/2023 7:01:26 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	4/13/2023 6:41:11 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-16 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:15:00 AM
Lab ID: 2304486-016 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/13/2023 9:19:11 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 9:19:11 PM
Surr: DNOP	91.0	69-147		%Rec	1	4/13/2023 9:19:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2023 7:24:59 PM
Surr: BFB	84.8	37.7-212		%Rec	1	4/13/2023 7:24:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 7:24:59 PM
Toluene	ND	0.050		mg/Kg	1	4/13/2023 7:24:59 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2023 7:24:59 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2023 7:24:59 PM
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	1	4/13/2023 7:24:59 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	200	60		mg/Kg	20	4/13/2023 6:53:36 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-17 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:20:00 AM
Lab ID: 2304486-017 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	4/13/2023 9:30:02 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/13/2023 9:30:02 PM
Surr: DNOP	101	69-147		%Rec	1	4/13/2023 9:30:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2023 7:48:26 PM
Surr: BFB	88.1	37.7-212		%Rec	1	4/13/2023 7:48:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 7:48:26 PM
Toluene	ND	0.050		mg/Kg	1	4/13/2023 7:48:26 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2023 7:48:26 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/13/2023 7:48:26 PM
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	4/13/2023 7:48:26 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	160	60		mg/Kg	20	4/13/2023 7:06:00 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-18 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:25:00 AM
Lab ID: 2304486-018 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/13/2023 9:40:52 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2023 9:40:52 PM
Surr: DNOP	89.2	69-147		%Rec	1	4/13/2023 9:40:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/13/2023 8:12:03 PM
Surr: BFB	94.9	37.7-212		%Rec	1	4/13/2023 8:12:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/13/2023 8:12:03 PM
Toluene	ND	0.050		mg/Kg	1	4/13/2023 8:12:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/13/2023 8:12:03 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2023 8:12:03 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/13/2023 8:12:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	170	60		mg/Kg	20	4/13/2023 7:18:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-19 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:30:00 AM
Lab ID: 2304486-019 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/13/2023 9:51:41 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 9:51:41 PM
Surr: DNOP	87.3	69-147		%Rec	1	4/13/2023 9:51:41 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2023 8:35:38 PM
Surr: BFB	95.1	37.7-212		%Rec	1	4/13/2023 8:35:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 8:35:38 PM
Toluene	ND	0.048		mg/Kg	1	4/13/2023 8:35:38 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2023 8:35:38 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 8:35:38 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/13/2023 8:35:38 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	110	60		mg/Kg	20	4/13/2023 7:30:49 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-20 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:35:00 AM
Lab ID: 2304486-020 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	4/13/2023 10:02:28 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/13/2023 10:02:28 PM
Surr: DNOP	90.5	69-147		%Rec	1	4/13/2023 10:02:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2023 8:59:09 PM
Surr: BFB	91.5	37.7-212		%Rec	1	4/13/2023 8:59:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/13/2023 8:59:09 PM
Toluene	ND	0.048		mg/Kg	1	4/13/2023 8:59:09 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2023 8:59:09 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/13/2023 8:59:09 PM
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	1	4/13/2023 8:59:09 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	190	60		mg/Kg	20	4/13/2023 8:08:02 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-21 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:40:00 AM
Lab ID: 2304486-021 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2023 10:23:54 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2023 10:23:54 PM
Surr: DNOP	92.5	69-147		%Rec	1	4/13/2023 10:23:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 12:19:00 PM
Surr: BFB	83.4	37.7-212		%Rec	1	4/14/2023 12:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 12:19:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 12:19:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 12:19:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2023 12:19:00 PM
Surr: 4-Bromofluorobenzene	83.3	70-130		%Rec	1	4/14/2023 12:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	4/14/2023 10:34:44 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-22 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:45:00 AM
Lab ID: 2304486-022 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	4/13/2023 10:34:36 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/13/2023 10:34:36 PM
Surr: DNOP	87.8	69-147		%Rec	1	4/13/2023 10:34:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 1:24:00 PM
Surr: BFB	91.2	37.7-212		%Rec	1	4/14/2023 1:24:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 1:24:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 1:24:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 1:24:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 1:24:00 PM
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	4/14/2023 1:24:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	59		mg/Kg	20	4/14/2023 10:47:05 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-23 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:50:00 AM
Lab ID: 2304486-023 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/13/2023 10:45:22 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2023 10:45:22 PM
Surr: DNOP	85.8	69-147		%Rec	1	4/13/2023 10:45:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 2:28:00 PM
Surr: BFB	90.1	37.7-212		%Rec	1	4/14/2023 2:28:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 2:28:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 2:28:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 2:28:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 2:28:00 PM
Surr: 4-Bromofluorobenzene	82.1	70-130		%Rec	1	4/14/2023 2:28:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 10:59:26 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-24 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 10:55:00 AM
Lab ID: 2304486-024 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/13/2023 10:56:06 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 10:56:06 PM
Surr: DNOP	93.1	69-147		%Rec	1	4/13/2023 10:56:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 2:50:00 PM
Surr: BFB	87.1	37.7-212		%Rec	1	4/14/2023 2:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 2:50:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 2:50:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 2:50:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 2:50:00 PM
Surr: 4-Bromofluorobenzene	82.5	70-130		%Rec	1	4/14/2023 2:50:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 11:36:27 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-25 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:00:00 AM
Lab ID: 2304486-025 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2023 11:06:48 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2023 11:06:48 PM
Surr: DNOP	87.2	69-147		%Rec	1	4/13/2023 11:06:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 3:11:00 PM
Surr: BFB	86.9	37.7-212		%Rec	1	4/14/2023 3:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:11:00 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 3:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 3:11:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2023 3:11:00 PM
Surr: 4-Bromofluorobenzene	84.5	70-130		%Rec	1	4/14/2023 3:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 11:48:48 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-26 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:05:00 AM
Lab ID: 2304486-026 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/13/2023 11:17:30 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/13/2023 11:17:30 PM
Surr: DNOP	85.7	69-147		%Rec	1	4/13/2023 11:17:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 3:32:00 PM
Surr: BFB	86.2	37.7-212		%Rec	1	4/14/2023 3:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:32:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 3:32:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 3:32:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/14/2023 3:32:00 PM
Surr: 4-Bromofluorobenzene	82.2	70-130		%Rec	1	4/14/2023 3:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 12:01:08 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-27 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:10:00 AM
Lab ID: 2304486-027 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2023 11:28:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2023 11:28:09 PM
Surr: DNOP	92.6	69-147		%Rec	1	4/13/2023 11:28:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 3:54:00 PM
Surr: BFB	85.7	37.7-212		%Rec	1	4/14/2023 3:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:54:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 3:54:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 3:54:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 3:54:00 PM
Surr: 4-Bromofluorobenzene	85.4	70-130		%Rec	1	4/14/2023 3:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	75	60		mg/Kg	20	4/14/2023 12:38:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-28 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:15:00 AM
Lab ID: 2304486-028 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/13/2023 11:38:48 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2023 11:38:48 PM
Surr: DNOP	93.1	69-147		%Rec	1	4/13/2023 11:38:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 4:16:00 PM
Surr: BFB	84.9	37.7-212		%Rec	1	4/14/2023 4:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 4:16:00 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 4:16:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 4:16:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/14/2023 4:16:00 PM
Surr: 4-Bromofluorobenzene	84.8	70-130		%Rec	1	4/14/2023 4:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	72	60		mg/Kg	20	4/14/2023 12:50:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-29 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:20:00 AM
Lab ID: 2304486-029 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/13/2023 11:49:26 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/13/2023 11:49:26 PM
Surr: DNOP	92.9	69-147		%Rec	1	4/13/2023 11:49:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 4:37:00 PM
Surr: BFB	96.8	37.7-212		%Rec	1	4/14/2023 4:37:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 4:37:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 4:37:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 4:37:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 4:37:00 PM
Surr: 4-Bromofluorobenzene	84.8	70-130		%Rec	1	4/14/2023 4:37:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	66	60		mg/Kg	20	4/14/2023 1:02:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-30 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:25:00 AM
Lab ID: 2304486-030 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/14/2023 12:00:05 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 12:00:05 AM
Surr: DNOP	94.9	69-147		%Rec	1	4/14/2023 12:00:05 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 4:59:00 PM
Surr: BFB	86.8	37.7-212		%Rec	1	4/14/2023 4:59:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 4:59:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 4:59:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 4:59:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 4:59:00 PM
Surr: 4-Bromofluorobenzene	85.6	70-130		%Rec	1	4/14/2023 4:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	160	60		mg/Kg	20	4/14/2023 1:39:52 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-31 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:30:00 AM
Lab ID: 2304486-031 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/14/2023 12:10:45 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 12:10:45 AM
Surr: DNOP	95.7	69-147		%Rec	1	4/14/2023 12:10:45 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 5:42:00 PM
Surr: BFB	86.5	37.7-212		%Rec	1	4/14/2023 5:42:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 5:42:00 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 5:42:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 5:42:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2023 5:42:00 PM
Surr: 4-Bromofluorobenzene	83.4	70-130		%Rec	1	4/14/2023 5:42:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	170	60		mg/Kg	20	4/14/2023 1:52:12 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-32 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:35:00 AM
Lab ID: 2304486-032 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/14/2023 12:21:26 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 12:21:26 AM
Surr: DNOP	101	69-147		%Rec	1	4/14/2023 12:21:26 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 6:03:00 PM
Surr: BFB	88.3	37.7-212		%Rec	1	4/14/2023 6:03:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	4/14/2023 6:03:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 6:03:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 6:03:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/14/2023 6:03:00 PM
Surr: 4-Bromofluorobenzene	86.1	70-130		%Rec	1	4/14/2023 6:03:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	69	59		mg/Kg	20	4/14/2023 2:04:33 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-33 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:40:00 AM
Lab ID: 2304486-033 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/14/2023 12:32:08 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2023 12:32:08 AM
Surr: DNOP	91.0	69-147		%Rec	1	4/14/2023 12:32:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 6:25:00 PM
Surr: BFB	88.3	37.7-212		%Rec	1	4/14/2023 6:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 6:25:00 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 6:25:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 6:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/14/2023 6:25:00 PM
Surr: 4-Bromofluorobenzene	83.5	70-130		%Rec	1	4/14/2023 6:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	82	60		mg/Kg	20	4/14/2023 2:16:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-34 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:45:00 AM
Lab ID: 2304486-034 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/14/2023 12:42:50 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2023 12:42:50 AM
Surr: DNOP	87.2	69-147		%Rec	1	4/14/2023 12:42:50 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 6:46:00 PM
Surr: BFB	88.6	37.7-212		%Rec	1	4/14/2023 6:46:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 6:46:00 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 6:46:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 6:46:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/14/2023 6:46:00 PM
Surr: 4-Bromofluorobenzene	86.5	70-130		%Rec	1	4/14/2023 6:46:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 2:29:15 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-35 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:50:00 AM
Lab ID: 2304486-035 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	4/14/2023 12:53:33 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/14/2023 12:53:33 AM
Surr: DNOP	87.4	69-147		%Rec	1	4/14/2023 12:53:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 7:08:00 PM
Surr: BFB	84.9	37.7-212		%Rec	1	4/14/2023 7:08:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 7:08:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 7:08:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 7:08:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 7:08:00 PM
Surr: 4-Bromofluorobenzene	83.7	70-130		%Rec	1	4/14/2023 7:08:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	67	60		mg/Kg	20	4/14/2023 3:06:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-36 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 11:55:00 AM
Lab ID: 2304486-036 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/14/2023 1:14:53 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 1:14:53 AM
Surr: DNOP	83.2	69-147		%Rec	1	4/14/2023 1:14:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 7:29:00 PM
Surr: BFB	85.2	37.7-212		%Rec	1	4/14/2023 7:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 7:29:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 7:29:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 7:29:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 7:29:00 PM
Surr: 4-Bromofluorobenzene	83.0	70-130		%Rec	1	4/14/2023 7:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	72	60		mg/Kg	20	4/14/2023 3:18:37 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-37 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:00:00 PM
Lab ID: 2304486-037 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 1:25:37 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 1:25:37 AM
Surr: DNOP	89.6	69-147		%Rec	1	4/14/2023 1:25:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 7:51:00 PM
Surr: BFB	85.8	37.7-212		%Rec	1	4/14/2023 7:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 7:51:00 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 7:51:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 7:51:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/14/2023 7:51:00 PM
Surr: 4-Bromofluorobenzene	84.7	70-130		%Rec	1	4/14/2023 7:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	68	60		mg/Kg	20	4/14/2023 3:30:58 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-38 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:05:00 PM
Lab ID: 2304486-038 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/14/2023 1:36:22 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2023 1:36:22 AM
Surr: DNOP	90.7	69-147		%Rec	1	4/14/2023 1:36:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 8:12:00 PM
Surr: BFB	89.1	37.7-212		%Rec	1	4/14/2023 8:12:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.023		mg/Kg	1	4/14/2023 8:12:00 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 8:12:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 8:12:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/14/2023 8:12:00 PM
Surr: 4-Bromofluorobenzene	83.1	70-130		%Rec	1	4/14/2023 8:12:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 3:43:18 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-39 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:10:00 PM
Lab ID: 2304486-039 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/14/2023 1:47:07 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/14/2023 1:47:07 AM
Surr: DNOP	90.1	69-147		%Rec	1	4/14/2023 1:47:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 8:34:00 PM
Surr: BFB	86.7	37.7-212		%Rec	1	4/14/2023 8:34:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 8:34:00 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 8:34:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 8:34:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 8:34:00 PM
Surr: 4-Bromofluorobenzene	84.9	70-130		%Rec	1	4/14/2023 8:34:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	4/14/2023 3:55:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-40 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:15:00 PM
Lab ID: 2304486-040 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/14/2023 1:57:54 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 1:57:54 AM
Surr: DNOP	90.6	69-147		%Rec	1	4/14/2023 1:57:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 8:55:00 PM
Surr: BFB	89.6	37.7-212		%Rec	1	4/14/2023 8:55:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 8:55:00 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 8:55:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 8:55:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2023 8:55:00 PM
Surr: 4-Bromofluorobenzene	83.4	70-130		%Rec	1	4/14/2023 8:55:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	67	60		mg/Kg	20	4/14/2023 4:07:59 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-41 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:20:00 PM
Lab ID: 2304486-041 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	4/14/2023 2:08:49 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/14/2023 2:08:49 AM
Surr: DNOP	92.2	69-147		%Rec	1	4/14/2023 2:08:49 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 12:52:56 PM
Surr: BFB	105	37.7-212		%Rec	1	4/14/2023 12:52:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	4/14/2023 12:52:56 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 12:52:56 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 12:52:56 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/14/2023 12:52:56 PM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	4/14/2023 12:52:56 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	70	60		mg/Kg	20	4/14/2023 4:45:00 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-42 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:25:00 PM
Lab ID: 2304486-042 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	4/14/2023 2:19:43 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	4/14/2023 2:19:43 AM
Surr: DNOP	95.1	69-147		%Rec	1	4/14/2023 2:19:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 2:02:59 PM
Surr: BFB	96.3	37.7-212		%Rec	1	4/14/2023 2:02:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 2:02:59 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 2:02:59 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 2:02:59 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2023 2:02:59 PM
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	4/14/2023 2:02:59 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 4:57:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-43 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:30:00 PM
Lab ID: 2304486-043 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/14/2023 2:30:37 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2023 2:30:37 AM
Surr: DNOP	93.1	69-147		%Rec	1	4/14/2023 2:30:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 3:13:06 PM
Surr: BFB	84.3	37.7-212		%Rec	1	4/14/2023 3:13:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:13:06 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 3:13:06 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 3:13:06 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 3:13:06 PM
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	4/14/2023 3:13:06 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	86	60		mg/Kg	20	4/14/2023 5:34:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-44 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:35:00 PM
Lab ID: 2304486-044 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/14/2023 2:41:28 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 2:41:28 AM
Surr: DNOP	98.8	69-147		%Rec	1	4/14/2023 2:41:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 3:36:29 PM
Surr: BFB	90.1	37.7-212		%Rec	1	4/14/2023 3:36:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:36:29 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 3:36:29 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 3:36:29 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2023 3:36:29 PM
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	4/14/2023 3:36:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	4/14/2023 6:11:24 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-45 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:40:00 PM
Lab ID: 2304486-045 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 2:52:18 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 2:52:18 AM
Surr: DNOP	92.9	69-147		%Rec	1	4/14/2023 2:52:18 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 3:59:47 PM
Surr: BFB	88.5	37.7-212		%Rec	1	4/14/2023 3:59:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 3:59:47 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 3:59:47 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 3:59:47 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2023 3:59:47 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/14/2023 3:59:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 6:23:44 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-46 3'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 12:45:00 PM
Lab ID: 2304486-046 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 3:03:07 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 3:03:07 AM
Surr: DNOP	97.0	69-147		%Rec	1	4/14/2023 3:03:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 4:23:05 PM
Surr: BFB	86.5	37.7-212		%Rec	1	4/14/2023 4:23:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 4:23:05 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 4:23:05 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 4:23:05 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/14/2023 4:23:05 PM
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	4/14/2023 4:23:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	110	60		mg/Kg	20	4/14/2023 6:36:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-47 1'
Project: Marlan Downey 09ST TB **Collection Date:** 4/7/2023 12:50:00 PM
Lab ID: 2304486-047 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	4/14/2023 3:13:56 AM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	4/14/2023 3:13:56 AM
Surr: DNOP	81.5	69-147		%Rec	1	4/14/2023 3:13:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 4:46:19 PM
Surr: BFB	92.8	37.7-212		%Rec	1	4/14/2023 4:46:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 4:46:19 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 4:46:19 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 4:46:19 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 4:46:19 PM
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	4/14/2023 4:46:19 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	170	60		mg/Kg	20	4/14/2023 6:48:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BS23-48 1'
Project: Marlan Downey 09ST TB **Collection Date:** 4/7/2023 12:55:00 PM
Lab ID: 2304486-048 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/14/2023 3:24:42 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 3:24:42 AM
Surr: DNOP	86.8	69-147		%Rec	1	4/14/2023 3:24:42 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 5:09:50 PM
Surr: BFB	85.6	37.7-212		%Rec	1	4/14/2023 5:09:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 5:09:50 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 5:09:50 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 5:09:50 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/14/2023 5:09:50 PM
Surr: 4-Bromofluorobenzene	94.9	70-130		%Rec	1	4/14/2023 5:09:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	77	60		mg/Kg	20	4/14/2023 7:00:45 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BS23-49 1'
Project: Marlan Downey 09ST TB
Collection Date: 4/7/2023 1:00:00 PM
Lab ID: 2304486-049 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/14/2023 3:35:28 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 3:35:28 AM
Surr: DNOP	87.6	69-147		%Rec	1	4/14/2023 3:35:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 5:33:12 PM
Surr: BFB	82.3	37.7-212		%Rec	1	4/14/2023 5:33:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 5:33:12 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 5:33:12 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 5:33:12 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 5:33:12 PM
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	4/14/2023 5:33:12 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	100	59		mg/Kg	20	4/14/2023 8:02:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-01 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:00:00 AM
Lab ID: 2304486-050 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/14/2023 3:46:13 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 3:46:13 AM
Surr: DNOP	92.7	69-147		%Rec	1	4/14/2023 3:46:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 5:56:39 PM
Surr: BFB	88.0	37.7-212		%Rec	1	4/14/2023 5:56:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 5:56:39 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 5:56:39 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 5:56:39 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 5:56:39 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/14/2023 5:56:39 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	110	60		mg/Kg	20	4/14/2023 8:14:50 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-02 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:05:00 AM
Lab ID: 2304486-051 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 4:07:29 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 4:07:29 AM
Surr: DNOP	93.0	69-147		%Rec	1	4/14/2023 4:07:29 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 6:43:08 PM
Surr: BFB	97.3	37.7-212		%Rec	1	4/14/2023 6:43:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 6:43:08 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 6:43:08 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 6:43:08 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/14/2023 6:43:08 PM
Surr: 4-Bromofluorobenzene	98.9	70-130		%Rec	1	4/14/2023 6:43:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	140	60		mg/Kg	20	4/14/2023 8:27:11 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-03 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:10:00 AM
Lab ID: 2304486-052 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/14/2023 4:18:12 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 4:18:12 AM
Surr: DNOP	96.7	69-147		%Rec	1	4/14/2023 4:18:12 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 7:06:30 PM
Surr: BFB	87.0	37.7-212		%Rec	1	4/14/2023 7:06:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 7:06:30 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 7:06:30 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 7:06:30 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 7:06:30 PM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/14/2023 7:06:30 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	190	60		mg/Kg	20	4/14/2023 8:39:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-04 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:15:00 AM
Lab ID: 2304486-053 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	89	9.7		mg/Kg	1	4/14/2023 4:28:53 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 4:28:53 AM
Surr: DNOP	93.0	69-147		%Rec	1	4/14/2023 4:28:53 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 7:29:50 PM
Surr: BFB	91.6	37.7-212		%Rec	1	4/14/2023 7:29:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 7:29:50 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 7:29:50 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 7:29:50 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/14/2023 7:29:50 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	4/14/2023 7:29:50 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	200	61		mg/Kg	20	4/14/2023 8:51:53 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-05 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:20:00 AM
Lab ID: 2304486-054 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/14/2023 4:39:32 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/14/2023 4:39:32 AM
Surr: DNOP	89.8	69-147		%Rec	1	4/14/2023 4:39:32 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 7:53:03 PM
Surr: BFB	93.7	37.7-212		%Rec	1	4/14/2023 7:53:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 7:53:03 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 7:53:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 7:53:03 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/14/2023 7:53:03 PM
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	4/14/2023 7:53:03 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	140	60		mg/Kg	20	4/14/2023 9:04:14 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-06 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:25:00 AM
Lab ID: 2304486-055 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 4:50:11 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 4:50:11 AM
Surr: DNOP	91.9	69-147		%Rec	1	4/14/2023 4:50:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 8:16:16 PM
Surr: BFB	93.0	37.7-212		%Rec	1	4/14/2023 8:16:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 8:16:16 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 8:16:16 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 8:16:16 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2023 8:16:16 PM
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	4/14/2023 8:16:16 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	110	60		mg/Kg	20	4/14/2023 9:16:35 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-07 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:30:00 AM
Lab ID: 2304486-056 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	11	9.9		mg/Kg	1	4/14/2023 5:00:48 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 5:00:48 AM
Surr: DNOP	98.4	69-147		%Rec	1	4/14/2023 5:00:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/14/2023 8:39:29 PM
Surr: BFB	102	37.7-212		%Rec	1	4/14/2023 8:39:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 8:39:29 PM
Toluene	ND	0.047		mg/Kg	1	4/14/2023 8:39:29 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/14/2023 8:39:29 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/14/2023 8:39:29 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	4/14/2023 8:39:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	4/14/2023 9:28:56 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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-08 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:35:00 AM
Lab ID: 2304486-057 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	34	9.5		mg/Kg	1	4/14/2023 5:11:21 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/14/2023 5:11:21 AM
Surr: DNOP	97.8	69-147		%Rec	1	4/14/2023 5:11:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2023 9:02:46 PM
Surr: BFB	89.4	37.7-212		%Rec	1	4/14/2023 9:02:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 9:02:46 PM
Toluene	ND	0.049		mg/Kg	1	4/14/2023 9:02:46 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2023 9:02:46 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2023 9:02:46 PM
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	1	4/14/2023 9:02:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	210	60		mg/Kg	20	4/14/2023 9:41:17 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-09 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:40:00 AM
Lab ID: 2304486-058 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/14/2023 5:21:52 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/14/2023 5:21:52 AM
Surr: DNOP	91.2	69-147		%Rec	1	4/14/2023 5:21:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 9:26:08 PM
Surr: BFB	90.3	37.7-212		%Rec	1	4/14/2023 9:26:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 9:26:08 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 9:26:08 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 9:26:08 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 9:26:08 PM
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	1	4/14/2023 9:26:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	120	60		mg/Kg	20	4/14/2023 9:53:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-10 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:45:00 AM
Lab ID: 2304486-059 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/14/2023 5:32:22 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 5:32:22 AM
Surr: DNOP	99.0	69-147		%Rec	1	4/14/2023 5:32:22 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/14/2023 9:49:36 PM
Surr: BFB	79.8	37.7-212		%Rec	1	4/14/2023 9:49:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/14/2023 9:49:36 PM
Toluene	ND	0.048		mg/Kg	1	4/14/2023 9:49:36 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/14/2023 9:49:36 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/14/2023 9:49:36 PM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	4/14/2023 9:49:36 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/14/2023 10:30:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-11 0-5'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:50:00 AM
Lab ID: 2304486-060 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	20	9.3		mg/Kg	1	4/14/2023 5:42:50 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 5:42:50 AM
Surr: DNOP	99.4	69-147		%Rec	1	4/14/2023 5:42:50 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2023 10:13:09 PM
Surr: BFB	81.6	37.7-212		%Rec	1	4/14/2023 10:13:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/14/2023 10:13:09 PM
Toluene	ND	0.050		mg/Kg	1	4/14/2023 10:13:09 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2023 10:13:09 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/14/2023 10:13:09 PM
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	4/14/2023 10:13:09 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	160	60		mg/Kg	20	4/14/2023 10:43:03 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-12 0-1'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 10:55:00 AM
Lab ID: 2304486-061 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 5:17:51 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 5:17:51 PM
Surr: DNOP	101	69-147		%Rec	1	4/14/2023 5:17:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2023 2:07:20 AM
Surr: BFB	80.6	37.7-212		%Rec	1	4/15/2023 2:07:20 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/15/2023 2:07:20 AM
Toluene	ND	0.049		mg/Kg	1	4/15/2023 2:07:20 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2023 2:07:20 AM
Xylenes, Total	ND	0.097		mg/Kg	1	4/15/2023 2:07:20 AM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	4/15/2023 2:07:20 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	4/14/2023 3:26:05 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-13 0-1'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 11:00:00 AM
Lab ID: 2304486-062 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/14/2023 5:28:42 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 5:28:42 PM
Surr: DNOP	97.5	69-147		%Rec	1	4/14/2023 5:28:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/15/2023 3:17:44 AM
Surr: BFB	92.6	37.7-212		%Rec	1	4/15/2023 3:17:44 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/15/2023 3:17:44 AM
Toluene	ND	0.047		mg/Kg	1	4/15/2023 3:17:44 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/15/2023 3:17:44 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/15/2023 3:17:44 AM
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	1	4/15/2023 3:17:44 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	120	60		mg/Kg	20	4/14/2023 3:38:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-14 0-3'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 11:05:00 AM
Lab ID: 2304486-063 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	27	9.3		mg/Kg	1	4/14/2023 5:39:30 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/14/2023 5:39:30 PM
Surr: DNOP	97.6	69-147		%Rec	1	4/14/2023 5:39:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/15/2023 3:41:08 AM
Surr: BFB	75.1	37.7-212		%Rec	1	4/15/2023 3:41:08 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	4/15/2023 3:41:08 AM
Toluene	ND	0.047		mg/Kg	1	4/15/2023 3:41:08 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/15/2023 3:41:08 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/15/2023 3:41:08 AM
Surr: 4-Bromofluorobenzene	93.0	70-130		%Rec	1	4/15/2023 3:41:08 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	160	60		mg/Kg	20	4/14/2023 3:50:54 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-15 0-3'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 11:10:00 AM
Lab ID: 2304486-064 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	27	9.3		mg/Kg	1	4/14/2023 5:50:19 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/14/2023 5:50:19 PM
Surr: DNOP	103	69-147		%Rec	1	4/14/2023 5:50:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/15/2023 4:04:24 AM
Surr: BFB	77.3	37.7-212		%Rec	1	4/15/2023 4:04:24 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	4/15/2023 4:04:24 AM
Toluene	ND	0.046		mg/Kg	1	4/15/2023 4:04:24 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/15/2023 4:04:24 AM
Xylenes, Total	ND	0.092		mg/Kg	1	4/15/2023 4:04:24 AM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	4/15/2023 4:04:24 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	190	60		mg/Kg	20	4/14/2023 4:28:08 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2304486**
Date Reported: **4/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: WS23-16 0-3'
Project: Marlan Downey 09ST TB
Collection Date: 4/8/2023 11:15:00 AM
Lab ID: 2304486-065 **Matrix:** SOIL **Received Date:** 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/14/2023 6:01:10 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/14/2023 6:01:10 PM
Surr: DNOP	96.7	69-147		%Rec	1	4/14/2023 6:01:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/15/2023 4:27:48 AM
Surr: BFB	82.5	37.7-212		%Rec	1	4/15/2023 4:27:48 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	4/15/2023 4:27:48 AM
Toluene	ND	0.049		mg/Kg	1	4/15/2023 4:27:48 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/15/2023 4:27:48 AM
Xylenes, Total	ND	0.099		mg/Kg	1	4/15/2023 4:27:48 AM
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	4/15/2023 4:27:48 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	110	61		mg/Kg	20	4/14/2023 4:40:33 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	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **MB-74307**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **74307**	RunNo: **96016**							
Prep Date: **4/13/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477015**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74307**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **74307**	RunNo: **96016**							
Prep Date: **4/13/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477016**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Sample ID: **MB-74317**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **74317**	RunNo: **96040**							
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477515**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74317**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **74317**	RunNo: **96040**							
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477516**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Sample ID: **MB-74329**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **74329**	RunNo: **96040**							
Prep Date: **4/14/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477545**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-74329**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **74329**	RunNo: **96040**							
Prep Date: **4/14/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477546**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **MB-74330**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74330**	RunNo: **96043**
Prep Date: **4/14/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477686** Units: **mg/Kg**

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

Sample ID: **LCS-74330**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74330**	RunNo: **96043**
Prep Date: **4/14/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477687** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **2304486-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS23-01 5'** Batch ID: **74299** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.7	48.45	0	85.3	54.2	135			
Surr: DNOP	4.8		4.845		99.8	69	147			

Sample ID: **2304486-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS23-01 5'** Batch ID: **74299** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476661** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.8	48.92	0	88.3	54.2	135	4.53	29.2	
Surr: DNOP	4.8		4.892		98.8	69	147	0	0	

Sample ID: **2304486-021AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS23-21 3'** Batch ID: **74308** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476682** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.4	46.90	0	90.8	54.2	135			
Surr: DNOP	4.9		4.690		104	69	147			

Sample ID: **2304486-021AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS23-21 3'** Batch ID: **74308** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476683** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.8	49.16	0	87.1	54.2	135	0.583	29.2	
Surr: DNOP	5.1		4.916		103	69	147	0	0	

Sample ID: **2304486-060AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS23-11 0-5'** Batch ID: **74312** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476723** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	8.4	42.23	20.11	74.1	54.2	135			
Surr: DNOP	4.1		4.223		98.3	69	147			

Sample ID: **2304486-060AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS23-11 0-5'** Batch ID: **74312** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476724** 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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **2304486-060AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS23-11 0-5'** Batch ID: **74312** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3476724** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	49.85	20.11	73.4	54.2	135	9.84	29.2	
Surr: DNOP	5.5		4.985		111	69	147	0	0	

Sample ID: **LCS-74299** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **74299** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/13/2023** SeqNo: **3476726** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.5	61.9	130			
Surr: DNOP	4.6		5.000		92.4	69	147			

Sample ID: **LCS-74308** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **74308** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/13/2023** SeqNo: **3476727** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	10	50.00	0	76.9	61.9	130			
Surr: DNOP	4.6		5.000		91.4	69	147			

Sample ID: **LCS-74312** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **74312** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/13/2023** SeqNo: **3476728** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	10	50.00	0	78.8	61.9	130			
Surr: DNOP	4.8		5.000		96.4	69	147			

Sample ID: **MB-74299** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **74299** RunNo: **96013**
Prep Date: **4/13/2023** Analysis Date: **4/13/2023** SeqNo: **3476730** 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	8.4		10.00		84.4	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **MB-74308**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74308**	RunNo: **96013**
Prep Date: **4/13/2023**	Analysis Date: **4/13/2023**	SeqNo: **3476731** 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	8.6		10.00		86.3	69	147			

Sample ID: **MB-74312**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74312**	RunNo: **96013**
Prep Date: **4/13/2023**	Analysis Date: **4/13/2023**	SeqNo: **3476732** 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	9.0		10.00		90.1	69	147			

Sample ID: **MB-74321**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74321**	RunNo: **96062**
Prep Date: **4/14/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478496** 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	8.9		10.00		88.9	69	147			

Sample ID: **MB-74347**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74347**	RunNo: **96078**
Prep Date: **4/17/2023**	Analysis Date: **4/17/2023**	SeqNo: **3479110** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.4		10.00		93.5	69	147			

Sample ID: **LCS-74347**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74347**	RunNo: **96078**
Prep Date: **4/17/2023**	Analysis Date: **4/17/2023**	SeqNo: **3479111** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.6	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **LCS-74321**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74321**	RunNo: **96078**
Prep Date: **4/14/2023**	Analysis Date: **4/17/2023**	SeqNo: **3479505** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.8	61.9	130			
Surr: DNOP	4.6		5.000		92.1	69	147			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **lcs-74287** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **74287** RunNo: **96020**
Prep Date: **4/12/2023** Analysis Date: **4/13/2023** SeqNo: **3477081** 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	98.5	70	130			
Surr: BFB	5300		1000		526	37.7	212			S

Sample ID: **mb-74287** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **74287** RunNo: **96020**
Prep Date: **4/12/2023** Analysis Date: **4/13/2023** SeqNo: **3477082** 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	930		1000		92.7	37.7	212			

Sample ID: **2304486-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-01 5'** Batch ID: **74287** RunNo: **96020**
Prep Date: **4/12/2023** Analysis Date: **4/13/2023** SeqNo: **3477084** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.9	24.46	0	115	70	130			
Surr: BFB	5800		978.5		593	37.7	212			S

Sample ID: **2304486-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-01 5'** Batch ID: **74287** RunNo: **96020**
Prep Date: **4/12/2023** Analysis Date: **4/13/2023** SeqNo: **3477085** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.9	24.61	0	113	70	130	0.987	20	
Surr: BFB	5900		984.3		597	37.7	212	0	0	S

Sample ID: **lcs-74306** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **74306** RunNo: **96035**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3477421** 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	94.4	70	130			
Surr: BFB	5000		1000		496	37.7	212			S

Sample ID: **mb-74306** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **74306** RunNo: **96035**
Prep Date: **4/13/2023** Analysis Date: **4/14/2023** SeqNo: **3477422** 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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **mb-74306**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477422** 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		95.9	37.7	212			

Sample ID: **2304486-041ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-41 3'**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477424** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.39	0	109	70	130			
Surr: BFB	5300		935.5		566	37.7	212			S

Sample ID: **2304486-041amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-41 3'**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477425** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.7	23.67	0	108	70	130	0.325	20	
Surr: BFB	5500		947.0		584	37.7	212	0	0	S

Sample ID: **lcs-74300**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478160** 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	92.2	70	130			
Surr: BFB	1900		1000		192	37.7	212			

Sample ID: **mb-74300**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478161** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.8	37.7	212			

Sample ID: **2304486-021ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-21 3'**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478163** 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 Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **2304486-021ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-21 3'**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478163** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	24.06	0	93.8	70	130			
Surr: BFB	1900		962.5		199	37.7	212			

Sample ID: **2304486-021amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS23-21 3'**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478164** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	24.04	0	95.5	70	130	1.72	20	
Surr: BFB	1900		961.5		199	37.7	212	0	0	

Sample ID: **lcs-74309**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478210** 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	95.4	70	130			
Surr: BFB	5000		1000		504	37.7	212			S

Sample ID: **mb-74309**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/15/2023**	SeqNo: **3478211** 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	850		1000		85.3	37.7	212			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **LCS-74287**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74287**	RunNo: **96020**
Prep Date: **4/12/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477108** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.2	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.3	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	70	130			

Sample ID: **mb-74287**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74287**	RunNo: **96020**
Prep Date: **4/12/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477109** 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	0.95		1.000		95.0	70	130			

Sample ID: **2304486-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-02 5'**	Batch ID: **74287**	RunNo: **96020**
Prep Date: **4/12/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477112** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9434	0	97.3	68.8	120			
Toluene	0.93	0.047	0.9434	0.01676	96.8	73.6	124			
Ethylbenzene	0.95	0.047	0.9434	0	100	72.7	129			
Xylenes, Total	2.8	0.094	2.830	0	100	75.7	126			
Surr: 4-Bromofluorobenzene	0.95		0.9434		101	70	130			

Sample ID: **2304486-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-02 5'**	Batch ID: **74287**	RunNo: **96020**
Prep Date: **4/12/2023**	Analysis Date: **4/13/2023**	SeqNo: **3477113** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.024	0.9497	0	104	68.8	120	7.53	20	
Toluene	1.0	0.047	0.9497	0.01676	104	73.6	124	8.06	20	
Ethylbenzene	1.0	0.047	0.9497	0	107	72.7	129	7.47	20	
Xylenes, Total	3.1	0.095	2.849	0	108	75.7	126	8.17	20	
Surr: 4-Bromofluorobenzene	0.97		0.9497		102	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **LCS-74306**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477430** 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	90.5	80	120			
Toluene	0.91	0.050	1.000	0	90.9	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	70	130			

Sample ID: **mb-74306**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477431** 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	0.97		1.000		97.0	70	130			

Sample ID: **2304486-042ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-42 3'**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477434** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9823	0	93.9	68.8	120			
Toluene	0.94	0.049	0.9823	0.01706	94.0	73.6	124			
Ethylbenzene	0.97	0.049	0.9823	0	98.8	72.7	129			
Xylenes, Total	2.9	0.098	2.947	0	99.4	75.7	126			
Surr: 4-Bromofluorobenzene	0.96		0.9823		97.4	70	130			

Sample ID: **2304486-042amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-42 3'**	Batch ID: **74306**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3477435** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9728	0	96.4	68.8	120	1.64	20	
Toluene	0.95	0.049	0.9728	0.01706	96.4	73.6	124	1.49	20	
Ethylbenzene	0.97	0.049	0.9728	0	99.9	72.7	129	0.170	20	
Xylenes, Total	2.9	0.097	2.918	0	101	75.7	126	0.202	20	
Surr: 4-Bromofluorobenzene	0.97		0.9728		99.8	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **LCS-74309**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478282** 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	87.9	80	120			
Toluene	0.88	0.050	1.000	0	88.1	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.2	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.3	70	130			

Sample ID: **mb-74309**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/15/2023**	SeqNo: **3478283** 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	0.96		1.000		95.7	70	130			

Sample ID: **2304486-061ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS23-12 0-1'**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/15/2023**	SeqNo: **3478317** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9690	0	97.0	68.8	120			
Toluene	0.95	0.048	0.9690	0.01676	96.8	73.6	124			
Ethylbenzene	0.98	0.048	0.9690	0	101	72.7	129			
Xylenes, Total	2.9	0.097	2.907	0	101	75.7	126			
Surr: 4-Bromofluorobenzene	0.93		0.9690		95.6	70	130			

Sample ID: **2304486-061amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS23-12 0-1'**	Batch ID: **74309**	RunNo: **96035**
Prep Date: **4/13/2023**	Analysis Date: **4/15/2023**	SeqNo: **3478318** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9662	0	96.6	68.8	120	0.683	20	
Toluene	0.95	0.048	0.9662	0.01676	96.1	73.6	124	1.00	20	
Ethylbenzene	0.96	0.048	0.9662	0	99.5	72.7	129	1.52	20	
Xylenes, Total	2.9	0.097	2.899	0	99.9	75.7	126	1.68	20	
Surr: 4-Bromofluorobenzene	0.94		0.9662		96.9	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304486**

19-Apr-23

Client: Vertex Resources Services, Inc.

Project: Marlan Downey 09ST TB

Sample ID: **lcs-74300**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478370** 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	90.0	80	120			
Toluene	0.89	0.050	1.000	0	89.2	80	120			
Ethylbenzene	0.87	0.050	1.000	0	86.8	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.8	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		87.6	70	130			

Sample ID: **mb-74300**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478371** 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	0.86		1.000		86.0	70	130			

Sample ID: **2304486-022ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-22 3'**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478374** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9407	0	94.7	68.8	120			
Toluene	0.89	0.047	0.9407	0	94.8	73.6	124			
Ethylbenzene	0.88	0.047	0.9407	0	94.1	72.7	129			
Xylenes, Total	2.6	0.094	2.822	0	92.7	75.7	126			
Surr: 4-Bromofluorobenzene	0.79		0.9407		84.4	70	130			

Sample ID: **2304486-022amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS23-22 3'**	Batch ID: **74300**	RunNo: **96058**
Prep Date: **4/13/2023**	Analysis Date: **4/14/2023**	SeqNo: **3478375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.023	0.9398	0	94.4	68.8	120	0.472	20	
Toluene	0.90	0.047	0.9398	0	95.4	73.6	124	0.536	20	
Ethylbenzene	0.87	0.047	0.9398	0	93.0	72.7	129	1.26	20	
Xylenes, Total	2.6	0.094	2.820	0	92.4	75.7	126	0.431	20	
Surr: 4-Bromofluorobenzene	0.82		0.9398		87.0	70	130	0	0	

Qualifiers:

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

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 Resources Services, Inc.

Work Order Number: 2304486

RcptNo: 1

Received By: Tracy Casarrubias 4/12/2023 8:42:00 AM

Completed By: Tracy Casarrubias 4/12/2023 9:03:38 AM

Reviewed By: KPA 4.12.23

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: JR 4/12/23

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions: Mailing Address, phone number and email missing on COC- TMC 4/12/23

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.5	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Vertex
M. Peppin

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 Day

Project Name: Marbon Downey 09ST TB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☒ Yes ☐ No (mgj)

# of Coolers: 1

Cooler Temp(including CF): 5.5-0.3=5.2 (°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. 2304486	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)
4/7	9:00	Soil	BS23-01 5'	402	ice	001	✓	✓					✓			
	9:05		BS23-02 5'			002										
	9:10		BS23-03 3'			003										
	9:15		BS23-04 3'			004										
	9:20		BS23-05 3'			005										
	9:25		BS23-06 3'			006										
	9:30		BS23-07 3'			007										
	9:35		BS23-08 3'			009										
	9:40		BS23-09 3'			009										
	9:45		BS23-10 3'			010										
	9:50		BS23-11 3'			011										
	9:55		BS23-12 3'			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/11/23	1245				4/11/23	1245
4/11/23	1900			Courier	4/12/23	8:42

Remarks: cc: M. Peppin

1 of 6

Matador

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:
☑ Standard ☒ Rush 5 Day

Project Name: Marlan Downey 09 5T TB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.4 - 0.3 = 4.1 (°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. 2304486	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)
4/7	10:00	Soil	BS23 - 13 3'	4 oz	Ice	013							✓			
	10:05		BS23 - 14 3'			014										
	10:10		BS23 - 15 3'			015										
	10:15		BS23 - 16 3'			016										
	10:20		BS23 - 17 3'			017										
	10:25		BS23 - 18 3'			018										
	10:30		BS23 - 19 3'			019										
	10:35		BS23 - 20 3'			020										
	10:40		BS23 - 21 3'			021										
	10:45		BS23 - 22 3'			022										
	10:50		BS23 - 23 3'			023										
	10:55		BS23 - 24 3'			024										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/11/23	1245				4/11/23	1245
4/11/23	1900			Courier	4/12/23	8:42

Remarks: CC: M. Peppin

2 of 6

Matador

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:
☑ Standard ☐ Rush 5 Days

Project Name: Marlan Downey 09 ST TB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.4-0.3 =4.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2304486	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)
4/7	11:00	Soil	BS23-25 3'	4 oz	ice	025	✓	✓								
	11:05		BS23-26 3'			026										
	11:10		BS23-27 3'			027										
	11:15		BS23-28 3'			028										
	11:20		BS23-29 3'			029										
	11:25		BS23-30 3'			030										
	11:30		BS23-31 3'			031										
	11:35		BS23-32 3'			032										
	11:40		BS23-33 3'			033										
	11:45		BS23-34 3'			034										
	11:50		BS23-35 3'			035										
	11:55		BS23-36 3'			036										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/11/23	1245				4/11/23	1245
4/11/23	1900			Courier	4/12/23	8:42

Remarks:

3 of 6

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:
☑ Standard ☐ Rush 5 Day

Project Name: Marlan Downey 09 STTB

Project #: 23E-01019

Project Manager: Monica Peppin

Sampler: MJ

On Ice: ☑ Yes ☐ No Yuqi

# of Coolers: 1

Cooler Temp(including CF): 4.4 - 0.3 = 4.1 (°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. 2304486	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)
4/7	12:00	Soil	BS23-37 3'	4oz	ice	037										
	12:05		BS23-38 3'			038										
	12:10		BS23-39 3'			039										
	12:15		BS23-40 3'			040										
	12:20		BS23-41 3'			041										
	12:25		BS23-42 3'			042										
	12:30		BS23-43 3'			043										
	12:35		BS23-44 3'			044										
	12:40		BS23-45 3'			045										
	12:45		BS23-46 3'			046										
	12:50		BS23-47 1'			047										
	12:55		BS23-48 1'			048										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/11/23	1245				4/11/23	1245
4/11/23	1900			Courier	4/12/23	8:42

Remarks:

4 of 6

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:
☒ Standard ☐ Rush 5 Day

Project Name:
Marlon Downey 095TTD

Project #:
23E-01019

Project Manager:
Monica Kapin

Sampler: MJP

On Ice: ☒ Yes ☐ No 4.4 - 0.3 = 4.1 (°C) 4/12/23

# of Coolers: 1

Cooler Temp(including CF): 4.4 - 0.3 = 4.1 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2304486	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)
4/7	1000	Soil	BS23-49 1'	4oz jar	ice	049	X	X					X			
4/8	1000		WS23-01 0-5			050										
	1005		WS23-02 0-5			051										
	1010		WS23-03 0-5			052										
	1015		WS23-04 0-5			053										
	1020		WS23-05 0-5			054										
	1025		WS23-06 0-5			055										
	1030		WS23-07 0-5			056										
	1035		WS23-08 0-5			057										
	1040		WS23-09 0-5			058										
	1045		WS23-10 0-5			059										
	1050		WS23-11 0-5			060										

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					4/11/23	1245
Date: 4/11/23	Time: 1900	Relinquished by:	Received by:	Via: courier	Date 4/12/23	Time 8:42

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.

Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☒ Rush 5 Day

Project Name: Marlan Downey 095TB

Project #: 03E-01019

Project Manager: Monica Peppin

Sampler: MJP

On Ice: ☑ Yes ☐ No 4001

# of Coolers: 1

Cooler Temp(including CF): 4.4-0.3=4.1 (°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. 2344880	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)
4/8	10:55	Soil	WS23-12 0-1'	4 oz	ice	061	✓	✓					✓			
4/8	11:00		WS23-13 0-1'			062										
4/8	11:05		WS23-14 0-3'			063										
4/8	11:10		WS23-15 0-3'			064										
4/8	11:15		WS23-16 0-3'			065										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/11/23	1245				4/11/23	1245
4/11/23	1900			Courier	4/12/23	8:42

Remarks:

6 of 6

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.

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 214665

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 214665
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	7/27/2023