Incident Number: nAPP2324234725

Release Assessment and Closure

PLU Pierce Canyon 20-24-30 Battery

Section 20, Township 24 South, Range 30 East

County: Eddy

Vertex File Number: 23E-05218

Prepared for:
XTO Energy

Prepared by:
Vertex Resource Services Inc.

Date:
November 2023

Release Assessment and Closure
PLU Pierce Canyon 20-24-30 Battery
Section 20, Township 24 South, Range 30 East
County: Eddy

Prepared for:
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11/29/2023
Date

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11/29/2023
Date

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1.0 Introduction

XTO Energy (XTO) retained Vertex Resource Services Inc. (Vertex) to conduct a Release Assessment and Closure for a crude oil flare release that occurred on August 16, 2023, at PLU Pierce Canyon 20-24-30 Battery (hereafter referred to as the "site"). XTO submitted an initial C-141 Release Notification (Appendix A) to New Mexico Oil Conservation Division (NMOCD) District 2 on August 29, 2023. Incident ID number nAPP2324234725 was assigned to this incident.

This report provides a description of the release assessment and remediation activities associated with the site. The information presented demonstrates that closure criteria established in Table I of 19.15.29.12 of the *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) related to NMOCD has been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release, with the understanding that the characterization and remediation followed all requirements set forth per NMAC 19.15.29.12.

2.0 Incident Description

The release occurred on August 16, 2023, due to a flare pilot gas line filling up with crude oil which caused the release of crude oil onto the surrounding pad and pasture. The incident was reported on August 29, 2023, and involved the release of approximately 0.33 barrels (bbl.) of crude oil on the pad site and the surrounding pasture. All the materials that were released onto the pad and surrounding pasture burnt up in a ground fire. Additional details relevant to the release are presented in the C--141 Report. Daily Field Reports (DFRs) with site photographs are included in Appendix C.

3.0 Site Characteristics

The site is located approximately 10.14 miles east of Malaga, New Mexico. The legal location for the site is Section 20, Township 24 South, and Range 30 East in Eddy County, New Mexico. The release area is located on Bureau of Land Management (BLM) property. An aerial photograph and Characterization site schematic are presented in Figure 1. The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas production and storage. The following sections specifically describe the release area PLU Pierce Canyon 20-24-30 Battery on or in proximity to the constructed pad (Figure 1).

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2023) indicates the site's surface geology primarily comprises Qep - Eolian and piedmont deposits (Holocene to middle Pleistocene) and is interlayered eolian sands and piedmont-slope deposits. The predominant soil texture on the site is KM – Kermit-Berino fine sands, 0 to 3 percent slopes. Additional soil characteristics include a drainage class of Excessively Drained with a runoff class of Negligeable. The karst geology potential for the site is Low (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with plains and alluvial fans with elevations ranging between 3,100 and 4,200 feet. The climate is semiarid with average annual precipitation ranging between 10 and 14 inches. Grasses with shrubs

and half-shrubs dominate the historic plant community (United States Department of Agriculture, Natural Resources Conservation Service, 2023). Limited to no vegetation is allowed to grow on the compacted production pad, right-of-way and access road.

4.0 Closure Criteria Determination

The nearest active well to the site is a United States Geological Survey (USGS) well located approximately 0.95 miles southwest of the location (United States Geological Survey, 2023). Data from 2022 shows the USGS borehole recorded a depth to groundwater that was greater than 120 feet below ground surface (bgs). Information pertaining to the depth to ground water determination is included in Appendix B.

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Nearest Watercourse (National Wetlands Inventory) located approximately 0.19 miles south of the site (United States Fish and Wildlife Service, 2023).

At the site, there are no continuously 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.

Table 1. Closure Criteria Worksheet			
Site Name: PLU Pierce Canyon 20-24-30 Battery			
Spill Coordinates: 32.20992, -103.90083		**X: 32.20992**	**Y: -103.90083**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**<50**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	1,005	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	12,583	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	53,522	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**		feet
	ii) Within 1000 feet of any fresh water well or spring	5,000	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	8,874	feet
8	Within the area overlying a subsurface mine		(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	>500	year
11	Soil Type	Kermit-Berino fine sands	
12	Ecological Classification		Deep sand
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 2.

Table 2. 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 solides

TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics

BTEX – benzene, toluene, ethylbenzene and xylenes

5.0 Remedial Actions Taken

An initial site inspection of the release area was completed on October 31, 2023, which identified the area of the release specified in the initial C-141 Report. The impacted area was determined to be approximately 33 feet long and 17 feet wide; the total affected area is 324 square feet. The DFR associated with the site inspection is included in Appendix C. Samples were collected within the vicinity of the release area and it was determined that there were no impacts exceeding the closure criteria for the site. XTO and Vertex agreed to excavate the staining that remained from the release and to collect confirmatory samples at 0.5 feet bgs after the scrape.

Remediation efforts began and ended on October 31, 2023. Vertex personnel supervised the excavation of the stained area. Field screening was completed on two sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and titration (chlorides). Soils were removed to a depth of 0.5 feet bgs. 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 October 18, 2023, and is included in Appendix D. Confirmatory composite samples were collected from the base and walls of the excavation in 200-square-foot increments. Two samples were collected for laboratory analysis following NMOCD soil sampling procedures. One of the samples represented the base of the scrape while the other was collected as a composite wall sample to represent all four cardinal directions within the scraped area. Samples were submitted to Eurofins Xenco 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, and the laboratory data reports are included in Appendix E. All confirmatory samples collected and analyzed were below the closure criteria for the site.

6.0 Closure Request

The release area was fully delineated and remediated by October 31, 2023. 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, XTO Energy requests that this release be closed.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or cdixon@vertex.ca.

7.0 References

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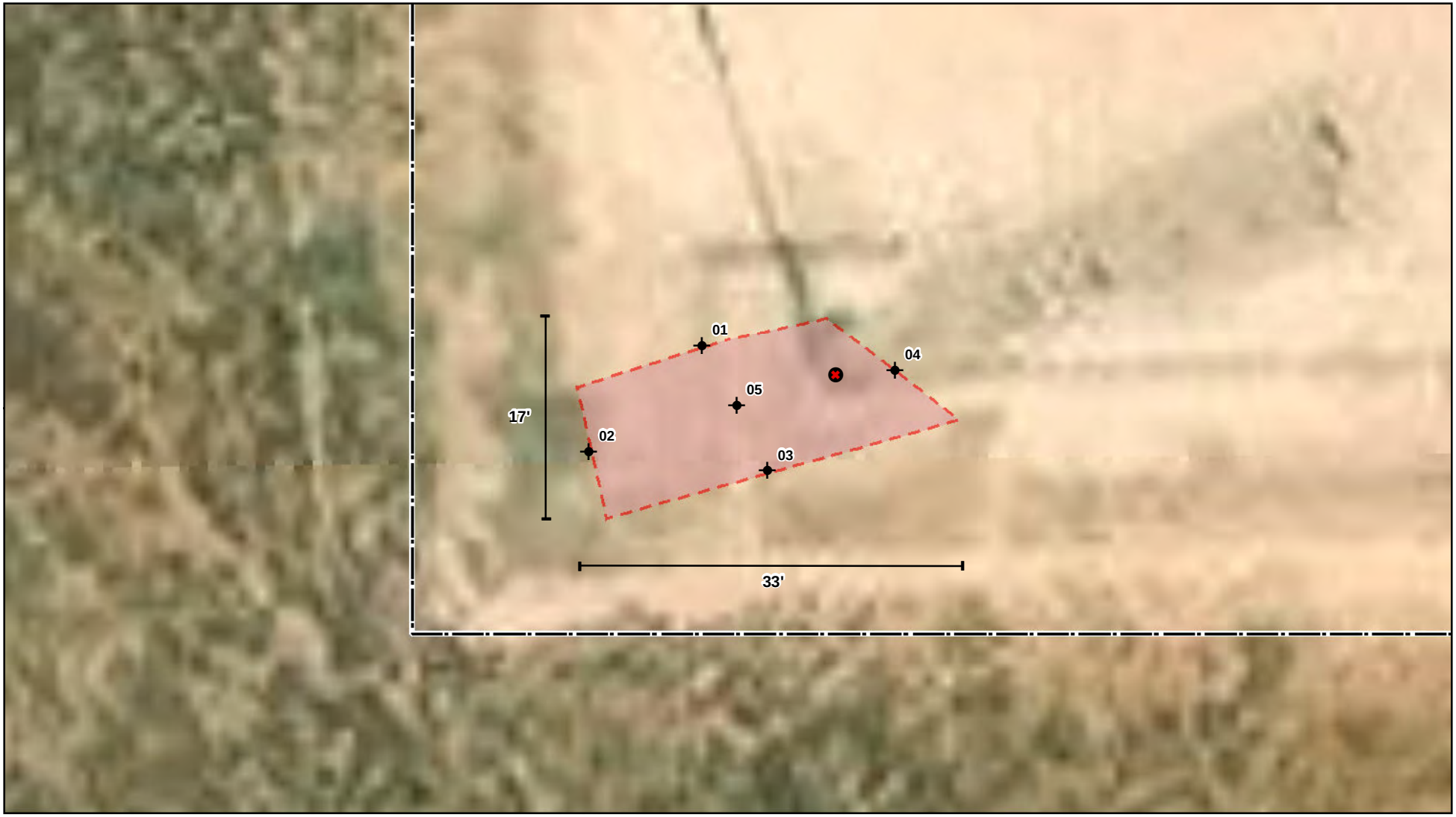
8.0 Limitations

This report has been prepared for the sole benefit of XTO Energy. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division and the Bureau of Land Management, without the express written consent of Vertex Resource Services Inc. (Vertex) and XTO Energy. 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.

FIGURES



Borehole (Prefixed by "BH23-")

Point of Release

Approximate Release Area (~324 sq.ft.)

Lease Boundary

VERTEX

0 2.5 5 10 ft

Map Center:
Lat/Long: 32.209909, -103.900925

NAD 1983 UTM Zone 13N
Date: Oct 13/23

N

Delineation Site Schematic
PLU Pierce Canyon 20-24-30 Battery

FIGURE:
1

XTO ENERGY

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: Georeferenced image from Esri, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\XTO Energy\23E-05218 (PLU Pierce Canyon Battery)\Figure 1 DelineationSchematic (23E-05218)ID17185.mxd

● Base Sample (Prefixed by "BES23-")
▲ Wall Sample (Prefixed by "WES23-")
Lease Boundary
Surface Scrape to 0.2' (~ 195 sq. ft.)

VERTEX

0 3 6 12 ft

Map Center:
Lat/Long: 32.209898, -103.900875

NAD 1983 UTM Zone 13N
Date: Nov 03/23

N

Confirmation Site Schematic
PLU Pierce Canyon 20-24-30 Battery

FIGURE:
2

XTO ENERGY

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Note: Georeferenced image from Esri, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\XTO Energy\23E-05218 (PLU Pierce Canyon Battery)\Figure 2 Confirmation Site Schematic (23E-05218)ID17344.mxd

TABLES

Client Name: XTO ENERGY
Site Name: PLU Pierce Canyon 20-24-30 Battery
NMOCD Tracking #: nAPP2324234725
Project #: 23E-05218
Lab Report(sX): 890-5379-1

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-01	0	9/29/2023	-	45	ND	ND	ND	ND	ND	ND	ND	ND	34.2
BH23-01	2	9/29/2023	-	54	ND	ND	ND	ND	ND	ND	ND	ND	159
BH23-02	0	9/29/2023	-	67	ND	ND	ND	ND	ND	ND	ND	ND	62
BH23-02	2	9/29/2023	-	57	ND	ND	ND	ND	ND	ND	ND	ND	33
BH23-03	0	9/29/2023	-	65	ND	ND	ND	ND	ND	ND	ND	ND	96
BH23-03	2	9/29/2023	-	31	ND	ND	ND	ND	ND	ND	ND	ND	34
BH23-04	0	9/29/2023	-	61	ND	ND	ND	ND	ND	ND	ND	ND	70.9
BH23-04	2	9/29/2023	-	59	ND	ND	ND	ND	ND	ND	ND	ND	115
BH23-05	0	9/29/2023	-	1,164	ND	ND	ND	ND	ND	ND	ND	ND	31.9
BH23-05	2	9/29/2023	-	59	ND	ND	ND	ND	ND	ND	ND	ND	171
BH23-05	4	9/29/2023	-	62	ND	ND	ND	ND	ND	ND	ND	ND	186

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed

Client Name: XTO Energy
Site Name: PLU Pierce Canyon 20-24-30 Battery
NMOCD Tracking #: nAPP2324234725
Project #: 23E-05218
Lab Report(sX): 880-35218-1

Table 4. Confirmatory Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BES23-01	0.5	10/31/2023	0	77	137	ND	ND	ND	82	ND	82	82	54
WES23-01	0-0.5	10/31/2023	0	38	508	ND	ND	ND	ND	ND	ND	ND	40

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed

APPENDIX A - NMOCD C-141 Report

APPENDIX B – Closure Criteria Research Documentation

New Mexico Office of the State Engineer
Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04676 POD1	1	2	2	19	24S	30E	602298	3564202

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

Driller Name: RUSSELL SOUTHERLAND

Drill Start Date: 11/22/2022 **Drill Finish Date:** 11/22/2022 **Plug Date:** 11/28/2022

Log File Date: 12/21/2022 **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** 120 feet **Depth Water:**

PLU Pierce Canyon 20-24-30 Battery

11/29/2023, 8:52:20 AM

GIS WATERS PODs
- Active
- Pending
- OSE District Boundary

New Mexico State Trust Lands
- Both Estates

NHD Flowlines
- Artificial Path
- Stream River

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

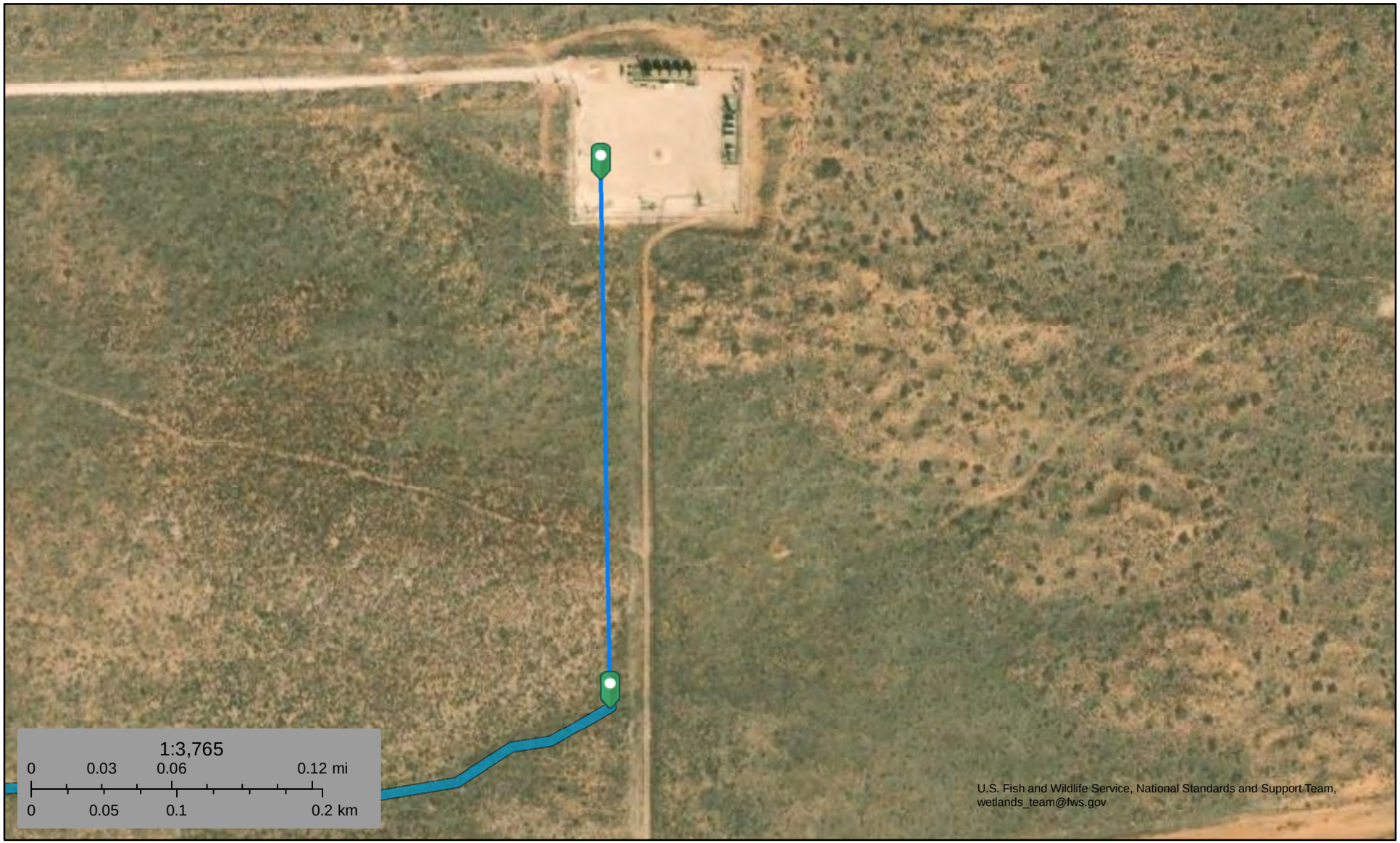
Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user

This is an unofficial map from the OSE's online application.

U.S. Fish and Wildlife Service
National Wetlands Inventory

PLU Pierce Canyon_Watercourse



September 19, 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

U.S. Fish and Wildlife Service
National Wetlands Inventory

PLU Pierce Canyon_Lake

September 19, 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

U.S. Fish and Wildlife Service
National Wetlands Inventory

PLU Pierce Canyon_Wetland

September 19, 2023

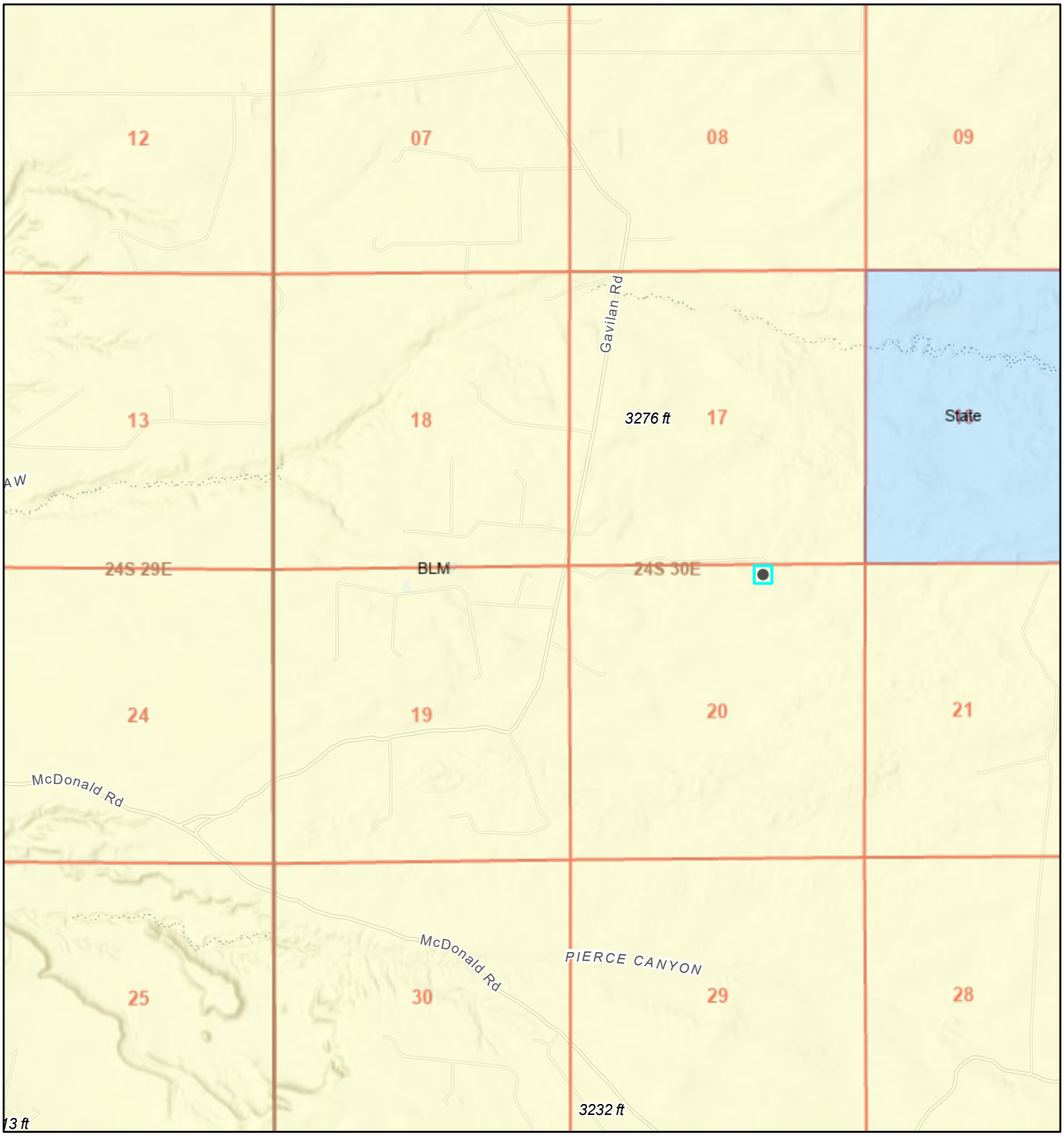
Wetlands

- 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

PLU Pierce Canyon 20-24-30 Battery_Mine



9/19/2023, 11:06:11 AM

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Land Ownership

BLM

S

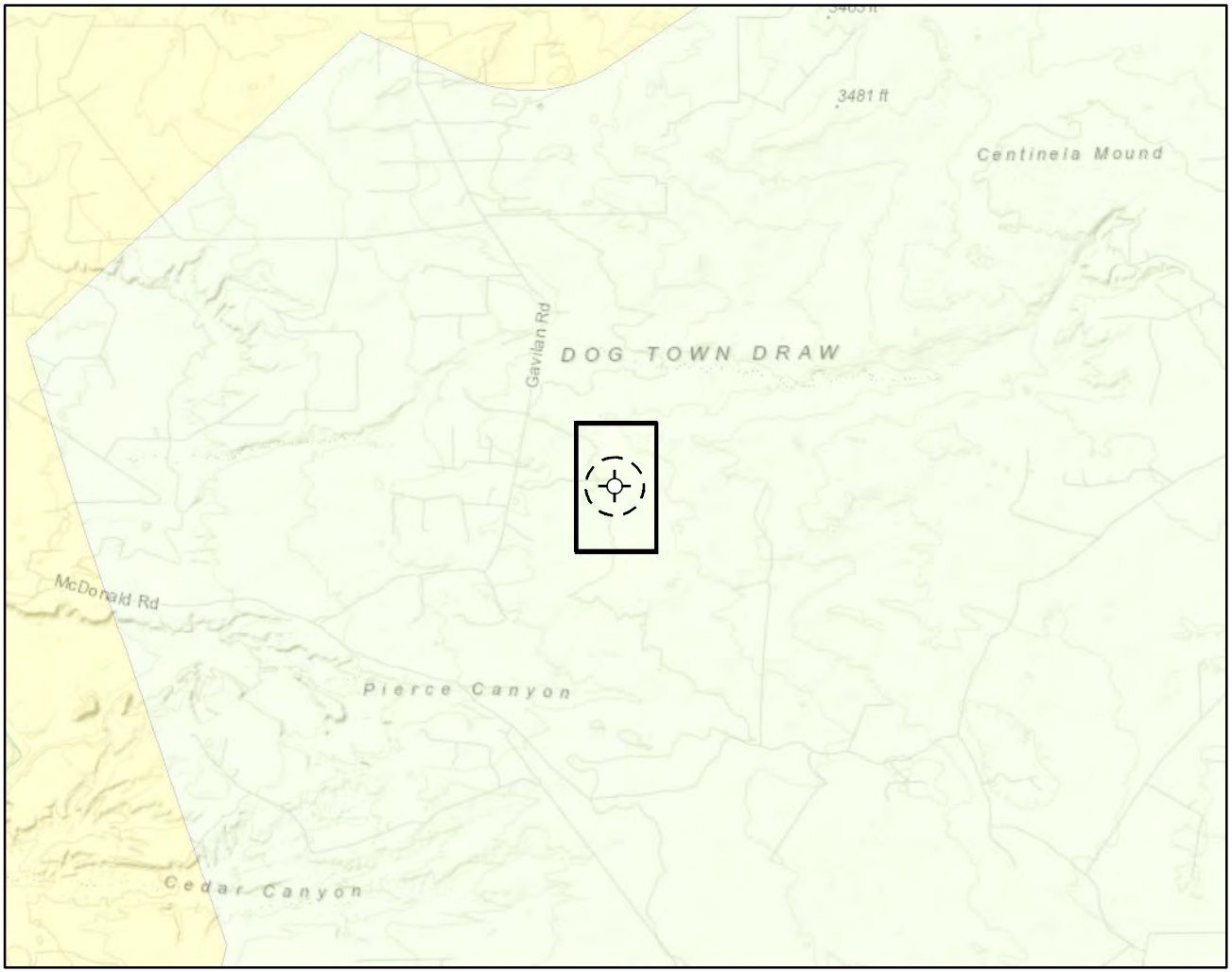
PLSS First Division

PLSS Townships

U.S. BLM, Esri, NASA, NGA, USGS, FEMA, BLM, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

EMNRD MMD GIS Coordinator

New Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)



Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Buffer Location (1,000 ft)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft

VERTEX

Map Center:
Lat/Long: 32.209909, -103.900925

NAD 1983 UTM Zone 13N
Date: Nov 02/23

N

Karst Potential Map
PLU Pierce Canyon 20-24-30 Battery

FIGURE:
X

XTO ENERGY

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 Roswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

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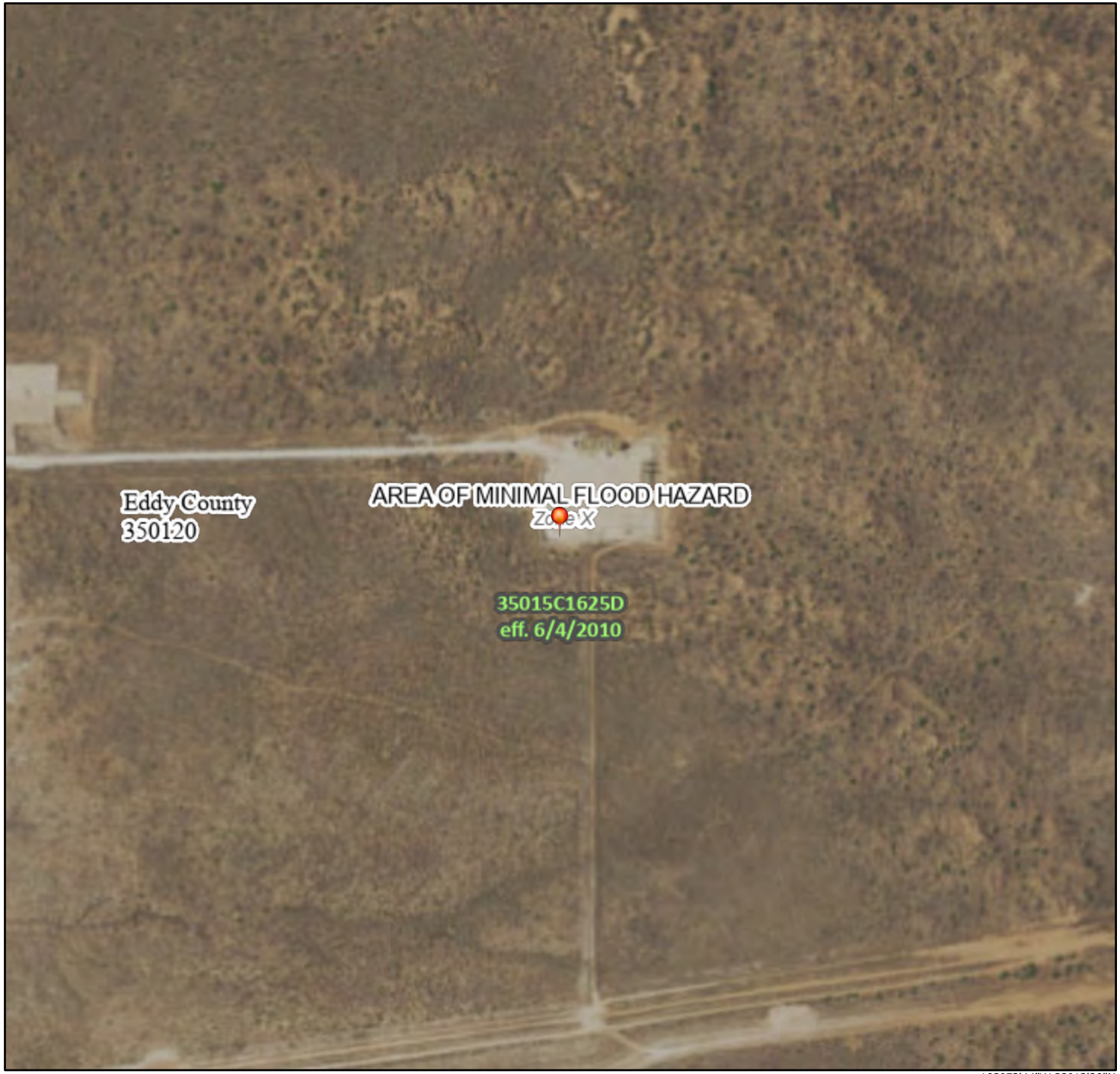
Document Path: G:\1-Projects_US PROJECTS\XTO Energy\23E-05218 (PLU Pierce Canyon Battery)\Figure X Karst Potential (23E-05218)ID17363.mxd

National Flood Hazard Layer FIRMette

FEMA

103°54'22"W 32°12'51"N



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

1:6,000

103°53'44"W 32°12'20"N

Basemap Imagery Source: USGS National Map 2023

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 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- 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 9/19/2023 at 1:33 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.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eddy Area, New Mexico

September 19, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 18, 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-Berino fine sands, 0 to 3 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eddy Area, New Mexico

KM—Kermit-Berino fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4q
Elevation: 3,100 to 4,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent
Berino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

Landform: Plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
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
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
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: R070BD005NM - Deep Sand
Hydric soil rating: No

Description of Berino

Setting

Landform: Plains, fan piedmonts
Landform position (three-dimensional): Riser

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

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: 40 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Active dune land

Percent of map unit: 15 percent
Hydric soil rating: No

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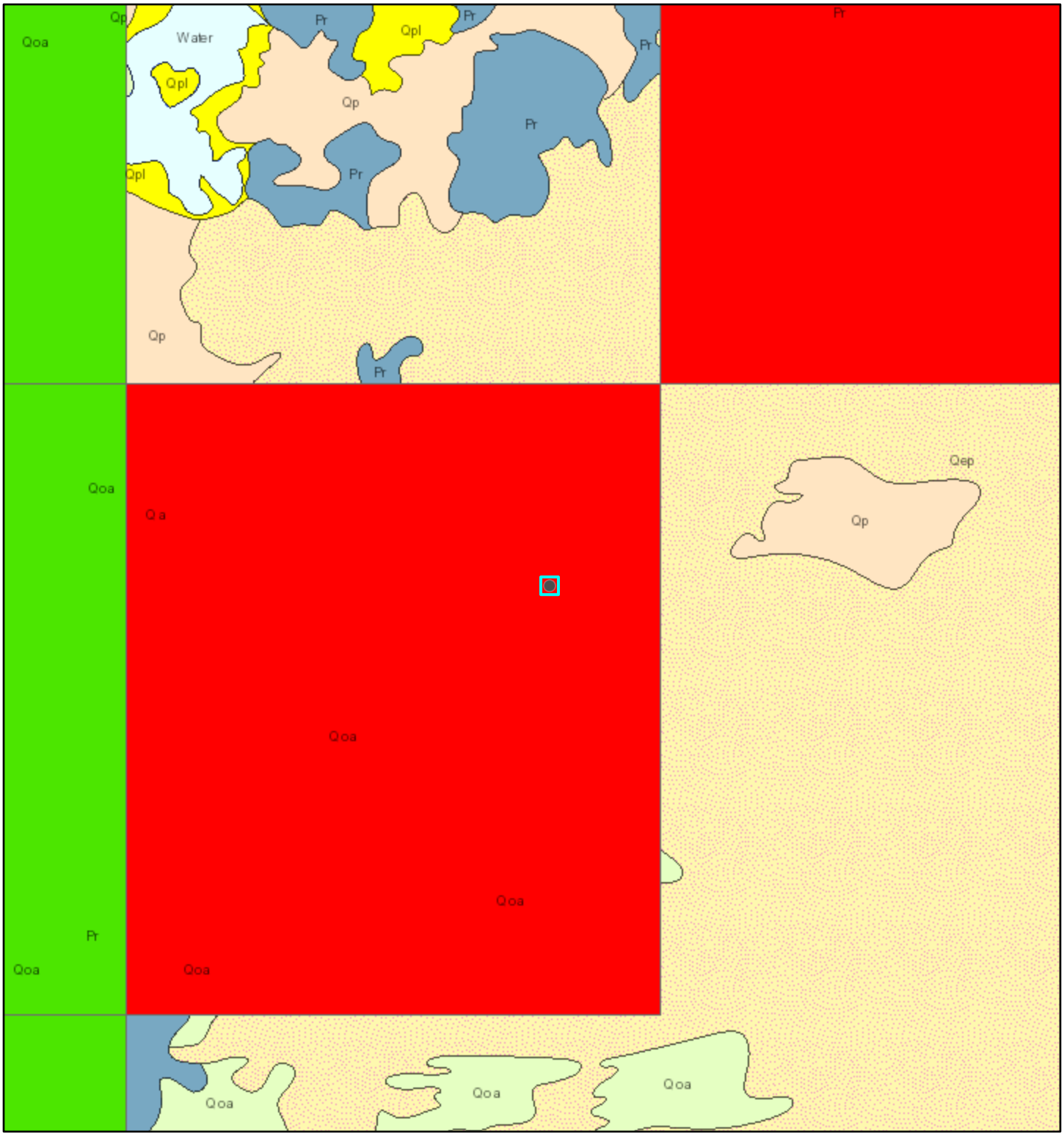
PLU Pierce Canyon_Geology_Qep



9/19/2023, 12:12:14 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Units

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

Esri, NASA, NGA, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS

ArcGIS Web AppBuilder

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National

APPENDIX C – Daily Field Reports

Daily Site Visit Report

Client:	XTO Energy Inc. (US)	Inspection Date:	9/29/2023
Site Location Name:	PLU 20-24-30	Report Run Date:	9/29/2023 9:35 PM
Client Contact Name:	Garrett Green	API #:	
Client Contact Phone #:	575-200-0729		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	9/29/2023 8:35 AM
Departed Site	9/29/2023 11:11 AM

Field Notes

11:07 Arrived on site and filled out safety paperwork.

11:10 Collected, field screened, and jarred samples BH23-01 through BH23-04 at 0’ and 2’ and BH23-05 at 0’, 2’,and 4’.

11:11 Spill was completely delineated pending lab analysis.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: East
	
Point of Release	Stained area.
Viewing Direction: North	**Viewing Direction**: West
	
Release area	Release area.

Daily Site Visit Report

Viewing Direction: South

Release area.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Hunter Klein

Signature: 

Daily Site Visit Report

Client:	XTO Energy Inc. (US)	Inspection Date:	10/31/2023
Site Location Name:	PLU 20-24-30	Report Run Date:	11/1/2023 2:22 PM
Client Contact Name:	Garrett Green	API #:	
Client Contact Phone #:	575-200-0729		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	10/31/2023 9:06 AM
Departed Site	10/31/2023 10:36 AM

Field Notes

9:12 Arrived on site and filled out safety paperwork.

9:14 Conducted tailgate safety discussion and site walkthrough with Tex Mex crew and XTO crew.

9:40 Laid out liner.

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: West

Liner for spoils.

Viewing Direction: South

Excavation surface staining.

Viewing Direction: East

Excavation area staining near pipes.

Viewing Direction: North

Excavation area before digging.

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: West
	
Surface scraping stained area.	Moving hand dug material into backhoe.
Viewing Direction: South	**Viewing Direction**: West
	
Excavation after scraping.	Excavation after scraping.

Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: West
	
Excavation after scraping.	Excavation after scraping.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Hunter Klein

Signature: 

APPENDIX D – Notifications

From: Collins, Melanie
To: ocd.enviro (ocd.enviro@emnrd.nm.gov)
Cc: Chance Dixon; Green, Garrett J; Lambert, Tommee L; DelawareSpills /SM
Subject: XTO Sampling Notification nAPP2324234725 PLU Pierce Canyon 20-24-30
Date: October 18, 2023 1:04:57 PM
Attachments: image001.png

All,

Please see the sampling schedule below for PLU Pierce Canyon 20-24-30. Sampling will take place 10/23/2023 from 8 a.m. to 5 p.m. Please reach out with questions or concerns.

Site Name	PLU Pierce Canyon 20-24-30
Location	B-20-24S-30E; Eddy County, NM
Incident ID	nAPP2324234725
Source & Description of Activities	Excavation and Sampling
Expected Duration for Activities	1 Day 10.23.2023
Env Consultant	Vertex
Contractor	TexMex
Sampling Notification Required	Yes, 10.23.2023 – 10.25.2023 (NMOCD District 2)
Surface Owner	BLM

Thank you,

Melanie Collins

XTO ENERGY

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: Collins, Melanie
To: ocd.enviro (ocd.enviro@emnrd.nm.gov); spills@slo.state.nm.us
Cc: Green, Garrett J; Chance Dixon; DelawareSpills /SM; Lambert, Tommee L
Subject: XTO Sampling Notifications 10/27/23-11/3/23
Date: October 25, 2023 1:11:39 PM
Attachments: image001.png

Please see the notifications below. Sites will be sampled beginning at 130 MT.

Site Name	Mis Amigos Tank Battery
Location	O-31-23S-33E; Eddy County, NM
Incident ID	nAPP2324951631
Source & Description of Activities	Excavation and Sampling
Expected Duration for Activities	4 Days 10.30.2023 – 11.03.2023
Env Consultant	Vertex
Contractor	TexMex
Sampling Notification Required	Yes, 10.27.2023 – 11.03.2023 at 12:00 p.m. (NMOCD District 1)
Surface Owner	SLO

Site Name	PLU Pierce Canyon 20-24-30
Location	B-20-24S-30E; Eddy County, NM
Incident ID	nAPP2324234725
Source & Description of Activities	Excavation and Sampling
Expected Duration for Activities	1 Day
Env Consultant	Vertex
Contractor	TexMex
Sampling Notification Required	Yes, 10.27.2023 – 11.01.2023 at 8:00 a.m. (NMOCD District 2)
Surface Owner	BLM

Thank you,

Melanie Collins
XTO ENERGY
Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

Collins, Melanie

From: Collins, Melanie
Sent: Thursday, August 17, 2023 9:44 AM
To: ocd.enviro@state.nm.us
Cc: Green, Garrett J; DelawareSpills /SM
Subject: 24-Hour notification PLU 20-24-30 Fire 08/16/2023

All,

This is notification of a flare fire that occurred yesterday at the PLU 20-24-30 Battery near the GPS coordinates below. Details will be provided with a Form C-141. No injuries were reported and the fire department was not contacted. Please reach out if you have questions, concerns, or if you would like additional information regarding this incident.

GPS: 32.210, -103.900

Thank you,

Melanie Collins

XTO ENERGY

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

Collins, Melanie

From: OCDOnline@state.nm.us
Sent: Wednesday, August 30, 2023 10:39 AM
To: Collins, Melanie
Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 259335

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) nAPP2324234725, with the following conditions:

- **When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.**

Please reference nAPP2324234725, on all subsequent C-141 submissions and communications regarding the remediation of this release.
NOTE: As of December 2019, NMOCD has discontinued the use of the "RP" number.
If you have any questions regarding this application, or don't know why you have received this email, please contact us.

ocd.enviro@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

APPENDIX E – Laboratory Data Reports and Chain of Custody Forms

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chance Dixon
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 10/10/2023 3:49:03 PM

JOB DESCRIPTION

PLU 20-24-30
SDG NUMBER 23E05218

JOB NUMBER

890-5379-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

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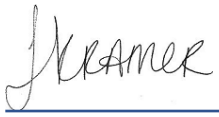
Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Client: Vertex
Project/Site: PLU 20-24-30

Laboratory Job ID: 890-5379-1
SDG: 23E05218

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Eurofins Carlsbad
10/10/2023

Definitions/Glossary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
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Qualifiers

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
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Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5379-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/29/2023 2:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.4°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: BH-23-01 (890-5379-1), BH-23-01 (890-5379-2), BH-23-02 (890-5379-3), BH-23-02 (890-5379-4), BH-23-03 (890-5379-5), BH-23-03 (890-5379-6), BH-23-04 (890-5379-7), BH-23-04 (890-5379-8), BH-23-05 (890-5379-9), BH-23-05 (890-5379-10) and BH-23-05 (890-5379-11).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63929 and analytical batch 880-64194 was outside the control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BH-23-02 (890-5379-4), BH-23-03 (890-5379-5), BH-23-03 (890-5379-6), BH-23-04 (890-5379-8) and BH-23-05 (890-5379-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-63901 and analytical batch 880-63913 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BH-23-01 (890-5379-1), BH-23-01 (890-5379-2), BH-23-02 (890-5379-3), (890-5331-A-1-D), (890-5331-A-1-E MS) and (890-5331-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-63901/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BH-23-03 (890-5379-6), BH-23-04 (890-5379-7), BH-23-04 (890-5379-8), BH-23-05 (890-5379-9), BH-23-05 (890-5379-10) and BH-23-05 (890-5379-11). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-63862 and analytical batch 880-63993 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because

Case Narrative

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
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Laboratory: Eurofins Carlsbad (Continued)

the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-01

Date Collected: 09/29/23 09:00
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-1
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 12:49	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 12:49	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 12:49	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/04/23 09:20	10/09/23 12:49	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 12:49	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/04/23 09:20	10/09/23 12:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*10/04/23 09:20*	*10/09/23 12:49*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*10/04/23 09:20*	*10/09/23 12:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/09/23 12:49	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			10/04/23 12:42	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/03/23 16:26	10/04/23 12:42	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/03/23 16:26	10/04/23 12:42	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/03/23 16:26	10/04/23 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 12:42*	*1*
o-Terphenyl	*128*		*70 - 130*	*10/03/23 16:26*	*10/04/23 12:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**34.2**		5.05		mg/Kg			10/05/23 15:55	1

Client Sample ID: BH-23-01

Date Collected: 09/29/23 09:05
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-2
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 13:16	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 13:16	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 13:16	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		10/04/23 09:20	10/09/23 13:16	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 13:16	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		10/04/23 09:20	10/09/23 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*10/04/23 09:20*	*10/09/23 13:16*	*1*

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-01

Date Collected: 09/29/23 09:05
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-2

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*10/04/23 09:20*	*10/09/23 13:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			10/09/23 13:16	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			10/04/23 13:05	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		10/03/23 16:26	10/04/23 13:05	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		10/03/23 16:26	10/04/23 13:05	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		10/03/23 16:26	10/04/23 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*139*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 13:05*	*1*
o-Terphenyl	*126*		*70 - 130*	*10/03/23 16:26*	*10/04/23 13:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**159**		5.04	mg/Kg			10/05/23 16:00	1

Client Sample ID: BH-23-02

Date Collected: 09/29/23 09:10
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-3

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 13:44	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 13:44	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 13:44	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/04/23 09:20	10/09/23 13:44	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 13:44	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/04/23 09:20	10/09/23 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*10/04/23 09:20*	*10/09/23 13:44*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*10/04/23 09:20*	*10/09/23 13:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/09/23 13:44	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/04/23 13:27	1

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:10
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-3
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 13:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 13:27	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 13:27*	*1*
o-Terphenyl	*114*		*70 - 130*	*10/03/23 16:26*	*10/04/23 13:27*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**62.4**		4.99		mg/Kg			10/05/23 16:14	1

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:15
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-4
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 14:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 14:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 14:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/04/23 09:20	10/09/23 14:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 14:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/04/23 09:20	10/09/23 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*70 - 130*	*10/04/23 09:20*	*10/09/23 14:10*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*10/04/23 09:20*	*10/09/23 14:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			10/09/23 14:10	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.5	U	49.5		mg/Kg			10/04/23 13:49	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.5	U	49.5		mg/Kg		10/03/23 16:26	10/04/23 13:49	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5		mg/Kg		10/03/23 16:26	10/04/23 13:49	1
OII Range Organics (Over C28-C36)	<49.5	U	49.5		mg/Kg		10/03/23 16:26	10/04/23 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*10/03/23 16:26*	*10/04/23 13:49*	*1*
o-Terphenyl	*110*		*70 - 130*	*10/03/23 16:26*	*10/04/23 13:49*	*1*

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:15
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.0		4.98		mg/Kg			10/05/23 16:19	1

Client Sample ID: BH-23-03
Date Collected: 09/29/23 09:20
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-5
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 14:36	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 14:36	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 14:36	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		10/04/23 09:20	10/09/23 14:36	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 14:36	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		10/04/23 09:20	10/09/23 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*	*10/04/23 09:20*	*10/09/23 14:36*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*10/04/23 09:20*	*10/09/23 14:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			10/09/23 14:36	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			10/04/23 14:11	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6		mg/Kg		10/03/23 16:26	10/04/23 14:11	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		10/03/23 16:26	10/04/23 14:11	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		10/03/23 16:26	10/04/23 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*10/03/23 16:26*	*10/04/23 14:11*	*1*
o-Terphenyl	*104*		*70 - 130*	*10/03/23 16:26*	*10/04/23 14:11*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	96.4		4.98		mg/Kg			10/05/23 16:24	1

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-03

Date Collected: 09/29/23 09:25
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-6
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 15:02	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 15:02	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 15:02	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		10/04/23 09:20	10/09/23 15:02	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/04/23 09:20	10/09/23 15:02	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		10/04/23 09:20	10/09/23 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*150*	*S1+*	*70 - 130*	*10/04/23 09:20*	*10/09/23 15:02*	*1*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*	*10/04/23 09:20*	*10/09/23 15:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			10/09/23 15:02	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3		mg/Kg			10/04/23 14:33	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3		mg/Kg		10/03/23 16:26	10/04/23 14:33	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		10/03/23 16:26	10/04/23 14:33	1
OII Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		10/03/23 16:26	10/04/23 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*131*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 14:33*	*1*
o-Terphenyl	*118*		*70 - 130*	*10/03/23 16:26*	*10/04/23 14:33*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.8**		4.98		mg/Kg			10/05/23 16:29	1

Client Sample ID: BH-23-04

Date Collected: 09/29/23 09:30
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-7
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 15:28	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 15:28	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 15:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/04/23 09:20	10/09/23 15:28	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/04/23 09:20	10/09/23 15:28	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/04/23 09:20	10/09/23 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*10/04/23 09:20*	*10/09/23 15:28*	*1*

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-04

Date Collected: 09/29/23 09:30
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-7
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*10/04/23 09:20*	*10/09/23 15:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/09/23 15:28	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			10/04/23 15:18	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		10/03/23 16:26	10/04/23 15:18	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		10/03/23 16:26	10/04/23 15:18	1
OII Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		10/03/23 16:26	10/04/23 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 15:18*	*1*
o-Terphenyl	*119*		*70 - 130*	*10/03/23 16:26*	*10/04/23 15:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**70.9**		5.03	mg/Kg			10/05/23 16:34	1

Client Sample ID: BH-23-04

Date Collected: 09/29/23 09:35
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-8
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 15:54	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 15:54	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 15:54	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/04/23 09:20	10/09/23 15:54	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/04/23 09:20	10/09/23 15:54	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/04/23 09:20	10/09/23 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*	*10/04/23 09:20*	*10/09/23 15:54*	*1*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*10/04/23 09:20*	*10/09/23 15:54*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/09/23 15:54	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			10/04/23 15:41	1

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Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-04

Date Collected: 09/29/23 09:35
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-8
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1		mg/Kg		10/03/23 16:26	10/04/23 15:41	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		10/03/23 16:26	10/04/23 15:41	1
OII Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		10/03/23 16:26	10/04/23 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*156*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 15:41*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 15:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**115**	**F1**	5.04		mg/Kg			10/05/23 16:39	1

Client Sample ID: BH-23-05

Date Collected: 09/29/23 09:40
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-9
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0998	U	0.0998		mg/Kg		10/04/23 09:20	10/09/23 16:46	50
Toluene	**0.237**		0.0998		mg/Kg		10/04/23 09:20	10/09/23 16:46	50
Ethylbenzene	**0.413**		0.0998		mg/Kg		10/04/23 09:20	10/09/23 16:46	50
m-Xylene & p-Xylene	**3.32**		0.200		mg/Kg		10/04/23 09:20	10/09/23 16:46	50
o-Xylene	**0.996**		0.0998		mg/Kg		10/04/23 09:20	10/09/23 16:46	50
Xylenes, Total	**4.32**		0.200		mg/Kg		10/04/23 09:20	10/09/23 16:46	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*	*10/04/23 09:20*	*10/09/23 16:46*	*50*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*10/04/23 09:20*	*10/09/23 16:46*	*50*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**4.97**		0.200		mg/Kg			10/09/23 16:46	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**2610**		50.0		mg/Kg			10/04/23 16:03	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**379**		50.0		mg/Kg		10/03/23 16:26	10/04/23 16:03	1
Diesel Range Organics (Over C10-C28)	**2230**		50.0		mg/Kg		10/03/23 16:26	10/04/23 16:03	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*155*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 16:03*	*1*
o-Terphenyl	*123*		*70 - 130*	*10/03/23 16:26*	*10/04/23 16:03*	*1*

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-05
Date Collected: 09/29/23 09:40
Date Received: 09/29/23 14:54
Sample Depth: 0'

Lab Sample ID: 890-5379-9
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.9		4.97		mg/Kg			10/05/23 16:53	1

Client Sample ID: BH-23-05
Date Collected: 09/29/23 09:45
Date Received: 09/29/23 14:54
Sample Depth: 2'

Lab Sample ID: 890-5379-10
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 16:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 16:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 16:20	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/04/23 09:20	10/09/23 16:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 16:20	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/04/23 09:20	10/09/23 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*10/04/23 09:20*	*10/09/23 16:20*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*10/04/23 09:20*	*10/09/23 16:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			10/09/23 16:20	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			10/04/23 16:25	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2		mg/Kg		10/03/23 16:26	10/04/23 16:25	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		10/03/23 16:26	10/04/23 16:25	1
OII Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		10/03/23 16:26	10/04/23 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*143*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 16:25*	*1*
o-Terphenyl	*126*		*70 - 130*	*10/03/23 16:26*	*10/04/23 16:25*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	171		4.96		mg/Kg			10/05/23 16:58	1

Client Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-05

Date Collected: 09/29/23 09:50
Date Received: 09/29/23 14:54
Sample Depth: 4'

Lab Sample ID: 890-5379-11

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		10/04/23 09:20	10/09/23 18:30	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/04/23 09:20	10/09/23 18:30	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/04/23 09:20	10/09/23 18:30	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/04/23 09:20	10/09/23 18:30	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/04/23 09:20	10/09/23 18:30	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/04/23 09:20	10/09/23 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*10/04/23 09:20*	*10/09/23 18:30*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*10/04/23 09:20*	*10/09/23 18:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			10/09/23 18:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**146**		49.8		mg/Kg			10/04/23 16:47	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		10/03/23 16:26	10/04/23 16:47	1
Diesel Range Organics (Over C10-C28)	**146**		49.8		mg/Kg		10/03/23 16:26	10/04/23 16:47	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		10/03/23 16:26	10/04/23 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*143*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 16:47*	*1*
o-Terphenyl	*125*		*70 - 130*	*10/03/23 16:26*	*10/04/23 16:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**186**		5.02		mg/Kg			10/05/23 17:13	1

Surrogate Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-5379-1	BH-23-01	106	94										
890-5379-1 MS	BH-23-01	111	91										
890-5379-1 MSD	BH-23-01	104	94										
890-5379-2	BH-23-01	113	103										
890-5379-3	BH-23-02	91	81										
890-5379-4	BH-23-02	131 S1+	104										
890-5379-5	BH-23-03	138 S1+	115										
890-5379-6	BH-23-03	150 S1+	118										
890-5379-7	BH-23-04	117	108										
890-5379-8	BH-23-04	135 S1+	112										
890-5379-9	BH-23-05	135 S1+	104										
890-5379-10	BH-23-05	107	89										
890-5379-11	BH-23-05	110	102										
LCS 880-63929/1-A	Lab Control Sample	116	109										
LCSD 880-63929/2-A	Lab Control Sample Dup	110	104										
MB 880-63929/5-A	Method Blank	66 S1-	95										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-5331-A-1-E MS	Matrix Spike	137 S1+	110										
890-5331-A-1-F MSD	Matrix Spike Duplicate	144 S1+	115										
890-5379-1	BH-23-01	147 S1+	128										
890-5379-2	BH-23-01	139 S1+	126										
890-5379-3	BH-23-02	132 S1+	114										
890-5379-4	BH-23-02	129	110										
890-5379-5	BH-23-03	123	104										
890-5379-6	BH-23-03	131 S1+	118										
890-5379-7	BH-23-04	137 S1+	119										
890-5379-8	BH-23-04	156 S1+	132 S1+										
890-5379-9	BH-23-05	155 S1+	123										
890-5379-10	BH-23-05	143 S1+	126										
890-5379-11	BH-23-05	143 S1+	125										
LCS 880-63901/2-A	Lab Control Sample	131 S1+	138 S1+										
LCSD 880-63901/3-A	Lab Control Sample Dup	102	107										
MB 880-63901/1-A	Method Blank	137 S1+	129										

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63929/5-A
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63929

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/04/23 09:20	10/09/23 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/23 09:20	10/09/23 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/04/23 09:20	10/09/23 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*	*S1-*	*70 - 130*	*10/04/23 09:20*	*10/09/23 12:21*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*10/04/23 09:20*	*10/09/23 12:21*	*1*

Lab Sample ID: LCS 880-63929/1-A
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63929

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1106		mg/Kg		111	70 - 130		
Toluene			0.100	0.1155		mg/Kg		115	70 - 130		
Ethylbenzene			0.100	0.1144		mg/Kg		114	70 - 130		
m-Xylene & p-Xylene			0.200	0.2234		mg/Kg		112	70 - 130		
o-Xylene			0.100	0.1117		mg/Kg		112	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: LCSD 880-63929/2-A
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1087		mg/Kg		109	70 - 130	2	35
Toluene			0.100	0.1091		mg/Kg		109	70 - 130	6	35
Ethylbenzene			0.100	0.1023		mg/Kg		102	70 - 130	11	35
m-Xylene & p-Xylene			0.200	0.2050		mg/Kg		102	70 - 130	9	35
o-Xylene			0.100	0.1114		mg/Kg		111	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 890-5379-1 MS
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: BH-23-01
Prep Type: Total/NA
Prep Batch: 63929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U	0.0998	0.09173		mg/Kg		92	70 - 130		
Toluene	<0.00199	U	0.0998	0.1103		mg/Kg		111	70 - 130		

QC Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-5379-1 MS
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: BH-23-01
Prep Type: Total/NA
Prep Batch: 63929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.1020		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1985		mg/Kg		99	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1027		mg/Kg		103	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 890-5379-1 MSD
Matrix: Solid
Analysis Batch: 64194

Client Sample ID: BH-23-01
Prep Type: Total/NA
Prep Batch: 63929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.1114		mg/Kg		111	70 - 130	19	35
Toluene	<0.00199	U	0.100	0.1111		mg/Kg		111	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.100	0.1050		mg/Kg		105	70 - 130	3	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2020		mg/Kg		101	70 - 130	2	35
o-Xylene	<0.00199	U	0.100	0.1001		mg/Kg		100	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-63901/1-A
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63901

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 07:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 07:45	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/03/23 16:26	10/04/23 07:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*10/03/23 16:26*	*10/04/23 07:45*	*1*
o-Terphenyl	*129*		*70 - 130*	*10/03/23 16:26*	*10/04/23 07:45*	*1*

Lab Sample ID: LCS 880-63901/2-A
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63901

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	912.7		mg/Kg		91	70 - 130
Diesel Range Organics (Over C10-C28)			1000	907.4		mg/Kg		91	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-63901/2-A
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63901

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	131	S1+	70 - 130
o-Terphenyl	138	S1+	70 - 130

Lab Sample ID: LCSD 880-63901/3-A
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63901

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	897.4		mg/Kg		90	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	894.8		mg/Kg		89	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	107		70 - 130

Lab Sample ID: 890-5331-A-1-E MS
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63901

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	813.5		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)	<49.7	U	999	1053		mg/Kg		103	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	137	S1+	70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: 890-5331-A-1-F MSD
Matrix: Solid
Analysis Batch: 63913

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63901

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	835.4		mg/Kg		81	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	1108		mg/Kg		108	70 - 130	5	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	144	S1+	70 - 130
o-Terphenyl	115		70 - 130

QC Sample Results

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-63862/1-A
Matrix: Solid
Analysis Batch: 63993

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/05/23 15:10	1

Lab Sample ID: LCS 880-63862/2-A
Matrix: Solid
Analysis Batch: 63993

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	244.3		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-63862/3-A
Matrix: Solid
Analysis Batch: 63993

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	239.7		mg/Kg		96	90 - 110	2	20

Lab Sample ID: 890-5379-8 MS
Matrix: Solid
Analysis Batch: 63993

Client Sample ID: BH-23-04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	115	F1	252	306.4	F1	mg/Kg		76	90 - 110		

Lab Sample ID: 890-5379-8 MSD
Matrix: Solid
Analysis Batch: 63993

Client Sample ID: BH-23-04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	115	F1	252	306.9	F1	mg/Kg		76	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

GC VOA

Prep Batch: 63929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	5035	
890-5379-2	BH-23-01	Total/NA	Solid	5035	
890-5379-3	BH-23-02	Total/NA	Solid	5035	
890-5379-4	BH-23-02	Total/NA	Solid	5035	
890-5379-5	BH-23-03	Total/NA	Solid	5035	
890-5379-6	BH-23-03	Total/NA	Solid	5035	
890-5379-7	BH-23-04	Total/NA	Solid	5035	
890-5379-8	BH-23-04	Total/NA	Solid	5035	
890-5379-9	BH-23-05	Total/NA	Solid	5035	
890-5379-10	BH-23-05	Total/NA	Solid	5035	
890-5379-11	BH-23-05	Total/NA	Solid	5035	
MB 880-63929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-63929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-63929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5379-1 MS	BH-23-01	Total/NA	Solid	5035	
890-5379-1 MSD	BH-23-01	Total/NA	Solid	5035	

Analysis Batch: 64194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	8021B	63929
890-5379-2	BH-23-01	Total/NA	Solid	8021B	63929
890-5379-3	BH-23-02	Total/NA	Solid	8021B	63929
890-5379-4	BH-23-02	Total/NA	Solid	8021B	63929
890-5379-5	BH-23-03	Total/NA	Solid	8021B	63929
890-5379-6	BH-23-03	Total/NA	Solid	8021B	63929
890-5379-7	BH-23-04	Total/NA	Solid	8021B	63929
890-5379-8	BH-23-04	Total/NA	Solid	8021B	63929
890-5379-9	BH-23-05	Total/NA	Solid	8021B	63929
890-5379-10	BH-23-05	Total/NA	Solid	8021B	63929
890-5379-11	BH-23-05	Total/NA	Solid	8021B	63929
MB 880-63929/5-A	Method Blank	Total/NA	Solid	8021B	63929
LCS 880-63929/1-A	Lab Control Sample	Total/NA	Solid	8021B	63929
LCSD 880-63929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	63929
890-5379-1 MS	BH-23-01	Total/NA	Solid	8021B	63929
890-5379-1 MSD	BH-23-01	Total/NA	Solid	8021B	63929

Analysis Batch: 64386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	Total BTEX	
890-5379-2	BH-23-01	Total/NA	Solid	Total BTEX	
890-5379-3	BH-23-02	Total/NA	Solid	Total BTEX	
890-5379-4	BH-23-02	Total/NA	Solid	Total BTEX	
890-5379-5	BH-23-03	Total/NA	Solid	Total BTEX	
890-5379-6	BH-23-03	Total/NA	Solid	Total BTEX	
890-5379-7	BH-23-04	Total/NA	Solid	Total BTEX	
890-5379-8	BH-23-04	Total/NA	Solid	Total BTEX	
890-5379-9	BH-23-05	Total/NA	Solid	Total BTEX	
890-5379-10	BH-23-05	Total/NA	Solid	Total BTEX	
890-5379-11	BH-23-05	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

GC Semi VOA

Prep Batch: 63901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	8015NM Prep	
890-5379-2	BH-23-01	Total/NA	Solid	8015NM Prep	
890-5379-3	BH-23-02	Total/NA	Solid	8015NM Prep	
890-5379-4	BH-23-02	Total/NA	Solid	8015NM Prep	
890-5379-5	BH-23-03	Total/NA	Solid	8015NM Prep	
890-5379-6	BH-23-03	Total/NA	Solid	8015NM Prep	
890-5379-7	BH-23-04	Total/NA	Solid	8015NM Prep	
890-5379-8	BH-23-04	Total/NA	Solid	8015NM Prep	
890-5379-9	BH-23-05	Total/NA	Solid	8015NM Prep	
890-5379-10	BH-23-05	Total/NA	Solid	8015NM Prep	
890-5379-11	BH-23-05	Total/NA	Solid	8015NM Prep	
MB 880-63901/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-63901/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-63901/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5331-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5331-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 63913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	8015B NM	63901
890-5379-2	BH-23-01	Total/NA	Solid	8015B NM	63901
890-5379-3	BH-23-02	Total/NA	Solid	8015B NM	63901
890-5379-4	BH-23-02	Total/NA	Solid	8015B NM	63901
890-5379-5	BH-23-03	Total/NA	Solid	8015B NM	63901
890-5379-6	BH-23-03	Total/NA	Solid	8015B NM	63901
890-5379-7	BH-23-04	Total/NA	Solid	8015B NM	63901
890-5379-8	BH-23-04	Total/NA	Solid	8015B NM	63901
890-5379-9	BH-23-05	Total/NA	Solid	8015B NM	63901
890-5379-10	BH-23-05	Total/NA	Solid	8015B NM	63901
890-5379-11	BH-23-05	Total/NA	Solid	8015B NM	63901
MB 880-63901/1-A	Method Blank	Total/NA	Solid	8015B NM	63901
LCS 880-63901/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	63901
LCSD 880-63901/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	63901
890-5331-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	63901
890-5331-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	63901

Analysis Batch: 64011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Total/NA	Solid	8015 NM	
890-5379-2	BH-23-01	Total/NA	Solid	8015 NM	
890-5379-3	BH-23-02	Total/NA	Solid	8015 NM	
890-5379-4	BH-23-02	Total/NA	Solid	8015 NM	
890-5379-5	BH-23-03	Total/NA	Solid	8015 NM	
890-5379-6	BH-23-03	Total/NA	Solid	8015 NM	
890-5379-7	BH-23-04	Total/NA	Solid	8015 NM	
890-5379-8	BH-23-04	Total/NA	Solid	8015 NM	
890-5379-9	BH-23-05	Total/NA	Solid	8015 NM	
890-5379-10	BH-23-05	Total/NA	Solid	8015 NM	
890-5379-11	BH-23-05	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

HPLC/IC

Leach Batch: 63862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Soluble	Solid	DI Leach	
890-5379-2	BH-23-01	Soluble	Solid	DI Leach	
890-5379-3	BH-23-02	Soluble	Solid	DI Leach	
890-5379-4	BH-23-02	Soluble	Solid	DI Leach	
890-5379-5	BH-23-03	Soluble	Solid	DI Leach	
890-5379-6	BH-23-03	Soluble	Solid	DI Leach	
890-5379-7	BH-23-04	Soluble	Solid	DI Leach	
890-5379-8	BH-23-04	Soluble	Solid	DI Leach	
890-5379-9	BH-23-05	Soluble	Solid	DI Leach	
890-5379-10	BH-23-05	Soluble	Solid	DI Leach	
890-5379-11	BH-23-05	Soluble	Solid	DI Leach	
MB 880-63862/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-63862/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-63862/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5379-8 MS	BH-23-04	Soluble	Solid	DI Leach	
890-5379-8 MSD	BH-23-04	Soluble	Solid	DI Leach	

Analysis Batch: 63993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5379-1	BH-23-01	Soluble	Solid	300.0	63862
890-5379-2	BH-23-01	Soluble	Solid	300.0	63862
890-5379-3	BH-23-02	Soluble	Solid	300.0	63862
890-5379-4	BH-23-02	Soluble	Solid	300.0	63862
890-5379-5	BH-23-03	Soluble	Solid	300.0	63862
890-5379-6	BH-23-03	Soluble	Solid	300.0	63862
890-5379-7	BH-23-04	Soluble	Solid	300.0	63862
890-5379-8	BH-23-04	Soluble	Solid	300.0	63862
890-5379-9	BH-23-05	Soluble	Solid	300.0	63862
890-5379-10	BH-23-05	Soluble	Solid	300.0	63862
890-5379-11	BH-23-05	Soluble	Solid	300.0	63862
MB 880-63862/1-A	Method Blank	Soluble	Solid	300.0	63862
LCS 880-63862/2-A	Lab Control Sample	Soluble	Solid	300.0	63862
LCSD 880-63862/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	63862
890-5379-8 MS	BH-23-04	Soluble	Solid	300.0	63862
890-5379-8 MSD	BH-23-04	Soluble	Solid	300.0	63862

Lab Chronicle

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-01
Date Collected: 09/29/23 09:00
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 12:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 12:49	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 12:42	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 12:42	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 15:55	CH	EET MID

Client Sample ID: BH-23-01
Date Collected: 09/29/23 09:05
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 13:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 13:16	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 13:05	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 13:05	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:00	CH	EET MID

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:10
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 13:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 13:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 13:27	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 13:27	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:14	CH	EET MID

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:15
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 14:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 14:10	SM	EET MID

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Lab Chronicle

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-02
Date Collected: 09/29/23 09:15
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			64011	10/04/23 13:49	SM	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 13:49	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:19	CH	EET MID

Client Sample ID: BH-23-03
Date Collected: 09/29/23 09:20
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 14:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 14:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 14:11	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 14:11	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:24	CH	EET MID

Client Sample ID: BH-23-03
Date Collected: 09/29/23 09:25
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 15:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 15:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 14:33	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 14:33	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:29	CH	EET MID

Client Sample ID: BH-23-04
Date Collected: 09/29/23 09:30
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 15:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 15:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 15:18	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 15:18	SM	EET MID

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Lab Chronicle

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-04
Date Collected: 09/29/23 09:30
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:34	CH	EET MID

Client Sample ID: BH-23-04
Date Collected: 09/29/23 09:35
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 15:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 15:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 15:41	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 15:41	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:39	CH	EET MID

Client Sample ID: BH-23-05
Date Collected: 09/29/23 09:40
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		50	5 mL	5 mL	64194	10/09/23 16:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 16:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 16:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 16:03	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:53	CH	EET MID

Client Sample ID: BH-23-05
Date Collected: 09/29/23 09:45
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 16:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 16:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 16:25	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 16:25	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 16:58	CH	EET MID

Lab Chronicle

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Client Sample ID: BH-23-05
Date Collected: 09/29/23 09:50
Date Received: 09/29/23 14:54

Lab Sample ID: 890-5379-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	63929	10/04/23 09:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64194	10/09/23 18:30	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64386	10/09/23 18:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			64011	10/04/23 16:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	63901	10/03/23 16:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	63913	10/04/23 16:47	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	63862	10/03/23 11:09	SMC	EET MID
Soluble	Analysis	300.0		1			63993	10/05/23 17:13	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: PLU 20-24-30

Job ID: 890-5379-1
SDG: 23E05218

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5379-1	BH-23-01	Solid	09/29/23 09:00	09/29/23 14:54	0'
890-5379-2	BH-23-01	Solid	09/29/23 09:05	09/29/23 14:54	2'
890-5379-3	BH-23-02	Solid	09/29/23 09:10	09/29/23 14:54	0'
890-5379-4	BH-23-02	Solid	09/29/23 09:15	09/29/23 14:54	2'
890-5379-5	BH-23-03	Solid	09/29/23 09:20	09/29/23 14:54	0'
890-5379-6	BH-23-03	Solid	09/29/23 09:25	09/29/23 14:54	2'
890-5379-7	BH-23-04	Solid	09/29/23 09:30	09/29/23 14:54	0'
890-5379-8	BH-23-04	Solid	09/29/23 09:35	09/29/23 14:54	2'
890-5379-9	BH-23-05	Solid	09/29/23 09:40	09/29/23 14:54	0'
890-5379-10	BH-23-05	Solid	09/29/23 09:45	09/29/23 14:54	2'
890-5379-11	BH-23-05	Solid	09/29/23 09:50	09/29/23 14:54	4'

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

www.xenco.com Page _____ of _____

Project Manager:	Chance Dixon	Bill to: (if different)	Garret Green
Company Name:	Vertex	Company Name:	XTO
Address:		Address:	
City, State ZIP:		City, State ZIP:	
Phone:	Email:	cdixon@vertex.ca	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	PLU 20-24-30	Turn Around	
Project Number:	23E-05218	☒ Routine ☐ Rush	
Project Location:		Due Date:	
Sampler's Name:	Hunter Klein	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	Yes No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.6
Total Containers:		Corrected Temperature:	2.4

ANALYSIS REQUEST

890-5379 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Pres. Code	Parameters: TPH	BTEX	Cl	Sample Comments
BH23-01	0'	Soil	9/29/23	9:00								
BH23-01	2'			9:05								
BH23-02	0'			9:10								
BH23-02	2'			9:15								
BH23-03	0'			9:20								
BH23-03	2'			9:25								
BH23-04	0'			9:30								
BH23-04	2'			9:35								
BH23-05	0'			9:40								
BH23-05	2'			9:45								
BH23-05	4'			9:50								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Hunter Klein		9/29 1454			
3						
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-5379-1
SDG Number: 23E05218

Login Number: 5379
List Number: 1
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-5379-1
SDG Number: 23E05218

Login Number: 5379
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/03/23 11:40 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chance Dixon
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 11/7/2023 2:38:39 PM

JOB DESCRIPTION

PLU Pierce Cnyon
SDG NUMBER 23E-05218

JOB NUMBER

880-35218-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

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11/7/2023 2:38:39 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Vertex
Project/Site: PLU Pierce Cnyon

Laboratory Job ID: 880-35218-1
SDG: 23E-05218

Table of Contents

Definitions/Glossary

Client: Vertex Job ID: 880-35218-1
Project/Site: PLU Pierce Cnyon SDG: 23E-05218

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Job ID: 880-35218-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-35218-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/2/2023 10:46 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: BES23-01-0.2' (880-35218-1) and WES23-01-0.2' (880-35218-2).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-66217 and analytical batch 880-66220 was outside the upper control limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-66217 and analytical batch 880-66220 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-66046 and analytical batch 880-66022 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-35156-A-6-C), (880-35156-A-6-D MS) and (880-35156-A-6-E MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BES23-01-0.2' (880-35218-1) and WES23-01-0.2' (880-35218-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-66046 and analytical batch 880-66022 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Client Sample ID: BES23-01-0.2'

Date Collected: 10/31/23 10:00
Date Received: 11/02/23 10:46

Lab Sample ID: 880-35218-1
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/04/23 17:22	11/06/23 12:06	1
Toluene	<0.00198	U F1	0.00198		mg/Kg		11/04/23 17:22	11/06/23 12:06	1
Ethylbenzene	<0.00198	U F1	0.00198		mg/Kg		11/04/23 17:22	11/06/23 12:06	1
m-Xylene & p-Xylene	<0.00397	U F1	0.00397		mg/Kg		11/04/23 17:22	11/06/23 12:06	1
o-Xylene	<0.00198	U F1	0.00198		mg/Kg		11/04/23 17:22	11/06/23 12:06	1
Xylenes, Total	<0.00397	U F1	0.00397		mg/Kg		11/04/23 17:22	11/06/23 12:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*11/04/23 17:22*	*11/06/23 12:06*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/04/23 17:22*	*11/06/23 12:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			11/06/23 12:06	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**82.1**		50.4		mg/Kg			11/02/23 20:58	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4		mg/Kg		11/02/23 11:05	11/02/23 20:58	1
Diesel Range Organics (Over C10-C28)	**82.1**		50.4		mg/Kg		11/02/23 11:05	11/02/23 20:58	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		11/02/23 11:05	11/02/23 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*11/02/23 11:05*	*11/02/23 20:58*	*1*
o-Terphenyl	*166*	*S1+*	*70 - 130*	*11/02/23 11:05*	*11/02/23 20:58*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**54.4**		5.02		mg/Kg			11/07/23 08:49	1

Client Sample ID: WES23-01-0.2'

Date Collected: 10/31/23 10:05
Date Received: 11/02/23 10:46

Lab Sample ID: 880-35218-2
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/04/23 17:22	11/06/23 12:26	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/04/23 17:22	11/06/23 12:26	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/04/23 17:22	11/06/23 12:26	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/04/23 17:22	11/06/23 12:26	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/04/23 17:22	11/06/23 12:26	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/04/23 17:22	11/06/23 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*11/04/23 17:22*	*11/06/23 12:26*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*11/04/23 17:22*	*11/06/23 12:26*	*1*

Client Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Client Sample ID: WES23-01-0.2'

Date Collected: 10/31/23 10:05
Date Received: 11/02/23 10:46

Lab Sample ID: 880-35218-2

Matrix: Solid

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/06/23 12:26	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/02/23 21:20	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		11/02/23 11:05	11/02/23 21:20	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/02/23 11:05	11/02/23 21:20	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/02/23 11:05	11/02/23 21:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*11/02/23 11:05*	*11/02/23 21:20*	*1*
o-Terphenyl	*151*	*S1+*	*70 - 130*	*11/02/23 11:05*	*11/02/23 21:20*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40.2**		5.00		mg/Kg			11/07/23 08:55	1

Surrogate Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-35218-1	BES23-01-0.2'	90	102
880-35218-1 MS	BES23-01-0.2'	98	105
880-35218-1 MSD	BES23-01-0.2'	97	112
880-35218-2	WES23-01-0.2'	101	110
LCS 880-66217/1-A	Lab Control Sample	87	108
LCSD 880-66217/2-A	Lab Control Sample Dup	93	108
MB 880-66217/5-A	Method Blank	106	149 S1+

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-35156-A-6-D MS	Matrix Spike	143 S1+	131 S1+
880-35156-A-6-E MSD	Matrix Spike Duplicate	138 S1+	130
880-35218-1	BES23-01-0.2'	147 S1+	166 S1+
880-35218-2	WES23-01-0.2'	132 S1+	151 S1+
LCS 880-66046/2-A	Lab Control Sample	79	96
LCSD 880-66046/3-A	Lab Control Sample Dup	73	89
MB 880-66046/1-A	Method Blank	188 S1+	219 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-66217/5-A
Matrix: Solid
Analysis Batch: 66220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66217

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/04/23 17:22	11/06/23 11:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/04/23 17:22	11/06/23 11:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/04/23 17:22	11/06/23 11:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/04/23 17:22	11/06/23 11:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/04/23 17:22	11/06/23 11:37	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/04/23 17:22	11/06/23 11:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*11/04/23 17:22*	*11/06/23 11:37*	*1*
1,4-Difluorobenzene (Surr)	*149*	*S1+*	*70 - 130*	*11/04/23 17:22*	*11/06/23 11:37*	*1*

Lab Sample ID: LCS 880-66217/1-A
Matrix: Solid
Analysis Batch: 66220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 66217

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08978		mg/Kg		90	70 - 130		
Toluene			0.100	0.08009		mg/Kg		80	70 - 130		
Ethylbenzene			0.100	0.07424		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1692		mg/Kg		85	70 - 130		
o-Xylene			0.100	0.08224		mg/Kg		82	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-66217/2-A
Matrix: Solid
Analysis Batch: 66220

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 66217

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1015		mg/Kg		101	70 - 130	12	35
Toluene			0.100	0.08627		mg/Kg		86	70 - 130	7	35
Ethylbenzene			0.100	0.08339		mg/Kg		83	70 - 130	12	35
m-Xylene & p-Xylene			0.200	0.1882		mg/Kg		94	70 - 130	11	35
o-Xylene			0.100	0.09193		mg/Kg		92	70 - 130	11	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: 880-35218-1 MS
Matrix: Solid
Analysis Batch: 66220

Client Sample ID: BES23-01-0.2'
Prep Type: Total/NA
Prep Batch: 66217

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U	0.0996	0.08381		mg/Kg		84	70 - 130		
Toluene	<0.00198	U F1	0.0996	0.06749	F1	mg/Kg		68	70 - 130		

QC Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-35218-1 MS — **Client Sample ID: BES23-01-0.2'**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 66220 — **Prep Batch: 66217**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U F1	0.0996	0.06324	F1	mg/Kg		63	70 - 130
m-Xylene & p-Xylene	<0.00397	U F1	0.199	0.1496		mg/Kg		75	70 - 130
o-Xylene	<0.00198	U F1	0.0996	0.07423		mg/Kg		75	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 880-35218-1 MSD — **Client Sample ID: BES23-01-0.2'**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 66220 — **Prep Batch: 66217**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.101	0.09246		mg/Kg		92	70 - 130	10	35
Toluene	<0.00198	U F1	0.101	0.06835	F1	mg/Kg		68	70 - 130	1	35
Ethylbenzene	<0.00198	U F1	0.101	0.06030	F1	mg/Kg		60	70 - 130	5	35
m-Xylene & p-Xylene	<0.00397	U F1	0.202	0.1377	F1	mg/Kg		68	70 - 130	8	35
o-Xylene	<0.00198	U F1	0.101	0.06812	F1	mg/Kg		68	70 - 130	9	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-66046/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 66022 — **Prep Batch: 66046**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/02/23 08:05	11/02/23 09:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/02/23 08:05	11/02/23 09:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/02/23 08:05	11/02/23 09:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*188*	*S1+*	*70 - 130*	*11/02/23 08:05*	*11/02/23 09:17*	*1*
o-Terphenyl	*219*	*S1+*	*70 - 130*	*11/02/23 08:05*	*11/02/23 09:17*	*1*

Lab Sample ID: LCS 880-66046/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 66022 — **Prep Batch: 66046**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1080		mg/Kg		108	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.8		mg/Kg		88	70 - 130

Eurofins Midland

QC Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-66046/2-A
Matrix: Solid
Analysis Batch: 66022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 66046

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	96		70 - 130

Lab Sample ID: LCSD 880-66046/3-A
Matrix: Solid
Analysis Batch: 66022

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 66046

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	889.5		mg/Kg		89	70 - 130	19	20
Diesel Range Organics (Over C10-C28)			1000	806.1		mg/Kg		81	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	73		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: 880-35156-A-6-D MS
Matrix: Solid
Analysis Batch: 66022

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 66046

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	990	1126		mg/Kg		110	70 - 130
Diesel Range Organics (Over C10-C28)	907	F1	990	1560	F1	mg/Kg		66	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	143	S1+	70 - 130
o-Terphenyl	131	S1+	70 - 130

Lab Sample ID: 880-35156-A-6-E MSD
Matrix: Solid
Analysis Batch: 66022

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 66046

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	990	1071		mg/Kg		104	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	907	F1	990	1598		mg/Kg		70	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	138	S1+	70 - 130
o-Terphenyl	130		70 - 130

QC Sample Results

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-66079/1-A
Matrix: Solid
Analysis Batch: 66353

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			11/07/23 07:30	1

Lab Sample ID: LCS 880-66079/2-A
Matrix: Solid
Analysis Batch: 66353

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	253.4		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-66079/3-A
Matrix: Solid
Analysis Batch: 66353

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	253.3		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 880-35219-A-2-B MS
Matrix: Solid
Analysis Batch: 66353

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	133		248	395.0		mg/Kg		106	90 - 110		

Lab Sample ID: 880-35219-A-2-C MSD
Matrix: Solid
Analysis Batch: 66353

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	133		248	390.8		mg/Kg		104	90 - 110	1	20

QC Association Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

GC VOA

Prep Batch: 66217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	5035	
880-35218-2	WES23-01-0.2'	Total/NA	Solid	5035	
MB 880-66217/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-66217/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-66217/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-35218-1 MS	BES23-01-0.2'	Total/NA	Solid	5035	
880-35218-1 MSD	BES23-01-0.2'	Total/NA	Solid	5035	

Analysis Batch: 66220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	8021B	66217
880-35218-2	WES23-01-0.2'	Total/NA	Solid	8021B	66217
MB 880-66217/5-A	Method Blank	Total/NA	Solid	8021B	66217
LCS 880-66217/1-A	Lab Control Sample	Total/NA	Solid	8021B	66217
LCSD 880-66217/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	66217
880-35218-1 MS	BES23-01-0.2'	Total/NA	Solid	8021B	66217
880-35218-1 MSD	BES23-01-0.2'	Total/NA	Solid	8021B	66217

Analysis Batch: 66395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	Total BTEX	
880-35218-2	WES23-01-0.2'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 66022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	8015B NM	66046
880-35218-2	WES23-01-0.2'	Total/NA	Solid	8015B NM	66046
MB 880-66046/1-A	Method Blank	Total/NA	Solid	8015B NM	66046
LCS 880-66046/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	66046
LCSD 880-66046/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	66046
880-35156-A-6-D MS	Matrix Spike	Total/NA	Solid	8015B NM	66046
880-35156-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	66046

Prep Batch: 66046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	8015NM Prep	
880-35218-2	WES23-01-0.2'	Total/NA	Solid	8015NM Prep	
MB 880-66046/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-66046/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-66046/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-35156-A-6-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-35156-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 66171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Total/NA	Solid	8015 NM	
880-35218-2	WES23-01-0.2'	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

HPLC/IC

Leach Batch: 66079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Soluble	Solid	DI Leach	
880-35218-2	WES23-01-0.2'	Soluble	Solid	DI Leach	
MB 880-66079/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-66079/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-66079/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-35219-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-35219-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 66353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-35218-1	BES23-01-0.2'	Soluble	Solid	300.0	66079
880-35218-2	WES23-01-0.2'	Soluble	Solid	300.0	66079
MB 880-66079/1-A	Method Blank	Soluble	Solid	300.0	66079
LCS 880-66079/2-A	Lab Control Sample	Soluble	Solid	300.0	66079
LCSD 880-66079/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	66079
880-35219-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	66079
880-35219-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	66079

Lab Chronicle

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Client Sample ID: BES23-01-0.2'

Date Collected: 10/31/23 10:00
Date Received: 11/02/23 10:46

Lab Sample ID: 880-35218-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	66217	11/04/23 17:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	66220	11/06/23 12:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			66395	11/06/23 12:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			66171	11/02/23 20:58	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	66046	11/02/23 11:05	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	66022	11/02/23 20:58	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	66079	11/02/23 13:01	SMC	EET MID
Soluble	Analysis	300.0		1			66353	11/07/23 08:49	CH	EET MID

Client Sample ID: WES23-01-0.2'

Date Collected: 10/31/23 10:05
Date Received: 11/02/23 10:46

Lab Sample ID: 880-35218-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	66217	11/04/23 17:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	66220	11/06/23 12:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			66395	11/06/23 12:26	SM	EET MID
Total/NA	Analysis	8015 NM		1			66171	11/02/23 21:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	66046	11/02/23 11:05	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	66022	11/02/23 21:20	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	66079	11/02/23 13:01	SMC	EET MID
Soluble	Analysis	300.0		1			66353	11/07/23 08:55	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: PLU Pierce Cnyon

Job ID: 880-35218-1
SDG: 23E-05218

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-35218-1	BES23-01-0.2'	Solid	10/31/23 10:00	11/02/23 10:46
880-35218-2	WES23-01-0.2'	Solid	10/31/23 10:05	11/02/23 10:46

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Chain of Custody

Houston, TX (281) 240-4200, Dallas TX (214) 902-0300
Midland TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392 7550 Carlsbad NM (575) 988-3199

W

880-35218 Chain of Custody

Project Manager	Chance Dixon	Bill to. (if different)	Garret Green
Company Name	Vertex	Company Name	XTO
Address		Address.	
City, State ZIP		City, State ZIP	
Phone	Email		cdixon@vertex.ca

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables. EDD ☐ ADaPT ☐ Other:

Project Name	PLU Pierce Canyon	Turn Around	
Project Number	23E-05218	☒ Routine ☐ Rush	
Project Location		Due Date	
Sampler's Name	Hunter Klein	TAT starts the day received by the lab, if received by 4:30pm	
PO #			

SAMPLE RECEIPT	Temp Blank.	Yes No	Wet Ice	Yes No
Samples Received Intact:	Yes No	Thermometer ID		TN1007
Cooler Custody Seals.	Yes No N/A	Correction Factor		-0.2
Sample Custody Seals.	Yes No N/A	Temperature Reading		-8.6
Total Containers		Corrected Temperature		-8.6

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTEX	Cl
BES23-01 0.2'	soil	10/31/23	10:00		C	5	X	X	X
WES23-01 0.2'	↓	↓	10:05		↓		↓	↓	↓

Pres. Code / Parameters

Preservative Codes
None NO DI Water H_2O
Cool Cool MeOH Me
HCL. HC HNO_3 HN
H_2SO_4. H_2 NaOH Na
H_3PO_4 HP
$NaHSO_4$ NABIS
$Na_2S_2O_3$ $NaSO_3$
Zn Acetate+NaOH Zn
NaOH+Ascorbic Acid SAPC

Sample Comments
23125

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg 1631 / 245 1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Hunter Klein		10/31	2		11/2/23 1046
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Vertex

Job Number: 880-35218-1
SDG Number: 23E-05218

Login Number: 35218
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 294088

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2324234725**
Incident Name	**NAPP2324234725 PLU PIERCE CANYON 20-24-30 BATTERY @ 0**
Incident Type	**Fire**
Incident Status	**Reclamation Report Received**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	PLU PIERCE CANYON 20-24-30 BATTERY
Date Release Discovered	08/16/2023
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Fire
Did this release result in a fire or is the result of a fire	Yes
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Valve | Crude Oil | Released: 0 BBL | Recovered: 0 BBL | Lost: 0 BBL.
Produced Water Released (bbls) Details	*Not answered.*
Is the concentration of chloride in the produced water >10,000 mg/l	*Not answered.*
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**More info needed to determine if this will be treated as a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(2) an unauthorized release of a volume that:** **(a) results in a fire or is the result of a fire.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 12/13/2023

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	Attached Document
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	54
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	82
GRO+DRO (EPA SW-846 Method 8015M)	82
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	10/31/2023
On what date will (or did) the final sampling or liner inspection occur	10/31/2023
On what date will (or was) the remediation complete(d)	10/31/2023
What is the estimated surface area (in square feet) that will be reclaimed	324
What is the estimated volume (in cubic yards) that will be reclaimed	3.6
What is the estimated surface area (in square feet) that will be remediated	195
What is the estimated volume (in cubic yards) that will be remediated	3.6
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
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.	
I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 12/13/2023
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only *Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**294326**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**10/31/2023**
What was the (estimated) number of samples that were to be gathered	**2**
What was the sampling surface area in square feet	**195**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	324
What was the total volume (cubic yards) remediated	3.6
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	324
What was the total volume (in cubic yards) reclaimed	3.6
Summarize any additional remediation activities not included by answers (above)	Contaminants were excavated and confirmation samples were collected.

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 (in .pdf format) 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.

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.

I hereby agree and sign off to the above statement	Name: Garrett Green Title: SHE Coordinator Email: garrett.green@exxonmobil.com Date: 12/13/2023

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	324
What was the total volume of replacement material (in cubic yards) for this site	3.6
Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeding commence(d)	12/13/2023
Summarize any additional reclamation activities not included by answers (above)	Reseeding not required on pad.
The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeding plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.	
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.	
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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.	
Requesting a restoration complete approval with this submission	No
Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.	

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CONDITIONS

Action 294088

CONDITIONS

Operator:	OGRID:
XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	5380
	Action Number: 294088
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Reclamation Report for Incident #NAPP2324234725 PLU PIERCE CANYON 20-24-30 BATTERY, thank you. This Reclamation Report is approved. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation including pictures of the contoured backfilled excavation surface and a thorough discussion on reseeding mixture, vegetation ratio, timelines, etc.., will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	12/15/2023